Updated Mineral Resource Estimation for the Marimaca Copper Project, Antofagasta Region, Chile

Report Prepared for: **Marimaca Copper Corp.**

Report Prepared by:
Luis Oviedo, P.Geo.
NCL Ingeniería y Construcción SpA
Marcelo Jo
MJO Engineering and Consultants in Metallurgy SpA

Effective date: May 18, 2023
Report date: June 26, 2023

Updated Mineral Resource Estimation for the Marimaca Copper Project, Antofagasta Region, Chile

Marimaca Copper Corp.
Address: Suite 2400, 745 Thurlow Street Vancouver, BC V6E 0C5
E-mail: jgutierrez@marimaca.com
Website : Marimaca.com
Tel: tel:+44 (0)20 7920 3150

NCL Ingeniería y Construcción SpA
Address: General del Canto 230
Santiago, Region Metropolitana, Chile
E-mail: ncl@ncl.cl
Website: www.ncl.cl
Tel: +56 2 2651 0800

NCL Project Number: 2303

Effective date: May 18th, 2023
Report date: June 26th, 2023

Authored by: Luis Oviedo, P. Geo. NCL Ingeniería y Construcción SpA and Marcelo Jo, MJO Engineering and Consultants in Metallurgy SpA

Reviewed by: Ricardo Palma, P. Eng. Consultant NCL

CERTIFICATE OF QUALIFIED PERSON

I, Luis Oviedo, P.Geo, I am a consultant and QP with NCL and I have an employment address at 230, General del Canto, Providencia, Santiago de Chile. This certificate applies to the technical report titled "Updated Mineral Resource Estimation for the Marimaca Copper Project, Antofagasta Region, Chile" that has an effective date May 18th, 2023 (the "technical report").

I am a registered Professional Geologist (P.Geo.) in Chile. I am a registered member of the Comisión Calificadora de Competencias en Recursos y Reservas Mineras (Chilean Mining Commission: RM, CMC) with the number 013. I graduated with a Geologist degree from the University of Chile in 1977. Postgraduate "Evaluation and Certification of Mining Assets". Universidad Católica de Valparaíso, 2008, Chile.

I have practiced my profession for over 45 years since graduation. I have been directly involved in resource estimates for all types of mines, audits, due diligences, half-lives and technical reports of resources for stock exchanges and financial institutions in Canada, Chile, Peru, Ecuador and Colombia. I am a "qualified person" as that term is defined in NI 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101"), JORC and other stock exchanges in the world.

I visited the Marimaca Project (the "Project") 3 times, 3 days in December 2016, 2 days in August 2019 and 3 days in February 2022.

I am independent of Marimaca Copper Corp. as Section 1.5 of NI 43-101 describes independence.

I have been involved with the Project since November 2016 for the preparation of the first resources estimation study in 2017, the preparation of the NI 43 -101 Technical Report "Updated Resource Estimate for the Marimaca Copper Project, Antofagasta Province Region II, Chile" May 2018, the NI 43-101 Technical Report "Updated and Expanded Resource Estimate for the Marimaca Copper Project, Antofagasta Province Region II, Chile" January 2020, the NI 43-101 Technical Report "Preliminary Economic Assessment, Marimaca Project, Antofagasta, II Region, Chile" August 2020, and the NI43-101 November 2022 "Updated Mineral Resource Estimation for the Marimaca Copper Project, and Expanded Resource Estimate for the Marimaca Copper Project, Antofagasta Province Region II, Chile"

I have read NI 43-101 and the technical report for which I am responsible has been prepared in compliance with NI 43-101.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible, being all sections excluding Chapter 13 (*Mineral Processing and Metalurgical Testing*) and related summary information on the same subject matter contained in this report, contain all the scientific and technical information that is required to be disclosed to make the technical report not misleading.

Effective date: May 18th, 2023
Report date: June 26th, 2023
Signed and sealed

Luis Oviedo H. P. Geo., QP

CERTIFICATE OF QUALIFIED PERSON

I, Marcelo Jo, chemical engineer, am employed as a general manager in MJO Engineering and Consultants in Metallurgy SpA.

This certificate applies to the technical report titled "Updated Mineral Resource Estimation for the Marimaca Copper Project, Antofagasta Region, Chile" that has an effective date May 18th, 2023 (the "technical report").

I am a competent person in extractive metallurgy of the Chilean Mining Commission N°360. Membership of Chilean Mining Engineer Institute. I graduated from chemical engineer from Santiago University of Chile 1988.

I have practiced my profession for 36 years. I have been directly involved in research and development of hydrometallurgy process: Thin Layer Leaching, Bacterial Leaching and Chloride Leaching projects, the SX EW operations of Cerro Colorado and Lomas Bayas in Chile and in the last last 10 years in my own metallurgical process consulting firm now MJO Engineering and Consultants in Metallurgy

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

I have visited the site of Marimaca project for one day on 22nd January 2020.

I am responsible for Sections 1.6 and 13 of the technical report. I am independent of Marimaca Copper Corp.

I have no previous involvement with the Marimaca Project.

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

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

Effective date: May 18th, 2023
Report date: June 26th, 2023

Marcelo Jo, Competent Person Extractive Metallurgy Chilean Mining Commission Nr. 360 General Manager

MJO Engineering and Consultants in Metallurgy SpA

LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 SUMMARY

This report provides an updated Mineral Resource Estimate (MRE) for the Marimaca Copper Project, located in the Antofagasta Province, Region II, northern Chile. Previous MRE results were reported in successive NI 43-101 compliance reports dated 2017, 2018, 2020, 2022 and 2023. In addition, one Definitive Feasibility Study (DFS) report corresponding to the resource hosted by the Marimaca 1-123 concession was published in 2017 and a Preliminary Economic Assessment (PEA) corresponding to the expanded resource was published in 2020. Marimaca Copper Corp. (formerly Coro Mining Corp.) owns and has operated the project since its discovery in 2016.

In 2021, the deep exploration project discovered attractive mixed and secondary sulphide mineralization beneath the previously evaluated upper oxide mineralized body (Marimaca Oxide Deposit or MOD). Following this discovery, in tandem with the Company's strategy to infill the MOD, the decision was made to proceed with an extensive infill drilling program. This program and associated field work was completed during the first 3 quarters of 2022. This MRE captures drilling from the 2021 program and drilling completed from February 2022 to August 2022, representing an additional 28,374m to the previous 110,790m accounted for in the 2022 Mineral Resource Estimate (NI 43-101 released in 2022 titled "Updated Mineral Resource Estimation for the Marimaca Copper Project, Antofagasta Region, Chile) (the "2022 MRE").

Marimaca Copper (MCC) mandated NCL Ingenieria y Construccion SPA (NCL) to visit the project, estimate the Mineral Resources and compile an independent technical report pursuant to Canadian Securities Administrators' National Instrument 43-101. A team of independent qualified persons, as National Instrument 43-101 defines the term, visited operations at Marimaca from 2016 to actual times.

This report summarizes the technical information that is relevant to support the estimation of updated Mineral Resource Estimation of the Marimaca Copper Project pursuant to Canadian Securities Administrators' National Instrument 43-101.

As a result of the completion of this report, the previous 2018 DFS, 2020 PEA and 2022 MRE studies no longer reflect the current economic potential of the project and these previous studies should be seen as historical in nature and should not be relied upon. As these studies are no longer current, all the information contained therein related to "advanced property" as defined in NI 43-101 is no longer relevant to this technical report.

1.1 Property Description and Ownership

The Marimaca Copper Project is located in Chile's Antofagasta Province, Region II, approximately 25 km west from the port of Mejillones, approximately 45 km north of the city of Antofagasta and 1,250 km north of Santiago, Chile. The project area is located at approximately 374,820 E and 7,435,132 S in WGS84 UTM coordinates.

Figure 1-1 shows the project location, highlighting the proximity to first class utilities and infrastructure. The Figure also summarizes Marimaca's mining property position in the region

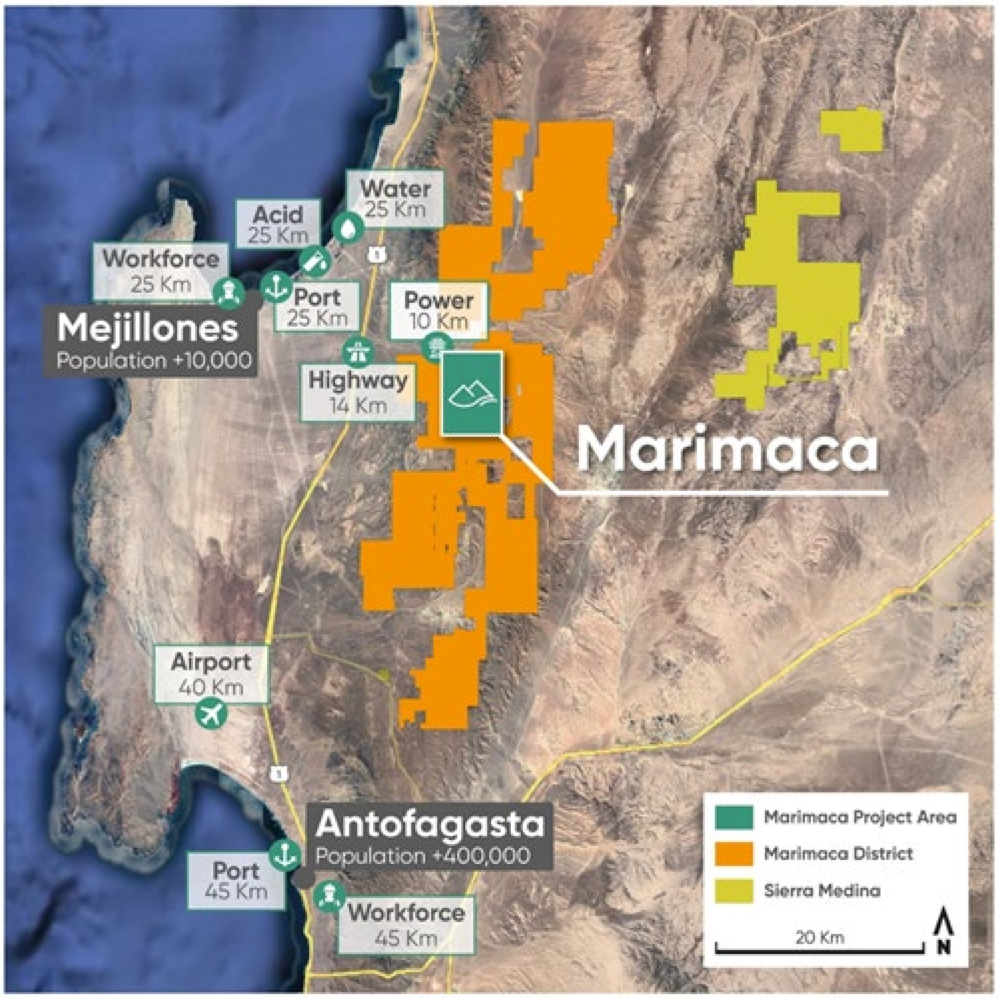


Figure 1-1: Marimaca Project location map, Marimaca Copper Corp., 2022

The Marimaca Project is comprised of 20 mining/exploitation concessions covering approximately 961 hectares. These concessions are listed in the national mining claims register, and are in Sierra Naguayán, Commune of Mejillones, Province and Region of Antofagasta. As shown in the Figure 1-1, tenements protecting project area are part of the much larger land position that the Company owns in the region.

Certain of the Company's interests in the mining/exploitation concessions were originally held via option agreements entered by Compañía Minera Cielo Azul ("MCAL"), a Chilean subsidiary of the Company. Most of the options held under these agreements have now been exercised.

MCAL currently has a provisional easement in respect of the surface rights over the concessions that provide for the Marimaca Project and elements of the wider Marimaca District. This provisional easement is registered in the name of MCAL, before the corresponding Real Estate Registrar. A definitive easement for the final development area of the Marimaca Project will be registered in due course.

The Company does not hold any water rights or maritime concessions. However, MCAL has entered into a water option agreement in October 2022 to secure the future water supply required for the Marimaca Project. Under the agreement, one of Chile's largest energy suppliers will supply seawater following its use in cooling systems at an electricity plant in Mejillones.

MCAL first obtained an Environmental Qualification Resolution (RCA) in July 2018 to be able to produce 10,000 tonnes of cathodes annually from the Marimaca 1-23 claims. Whilst this RCA still exists, it does not provide for the Marimaca Project as envisaged in the 2020 PEA.

A further RCA was obtained in November 2020 to provide for exploration and prospecting campaigns across the Marimaca Project and parts of the wider Marimaca District.

Currently, the Company is in the process of conducting environmental baseline studies to assess possible impacts that the Marimaca Project may have when it enters the Environmental Assessment System for purposes of obtaining an RCA for development. These studies do not currently identify any major environmental risks. In addition, there are no known material environmental liabilities in relation to the Marimaca Project.

1.2 History

Modern small-scale artisanal mining activities were undertaken in the general Project area from the 1990s to mid-2000s. Underground workings associated with small-scale mining reach a maximum of approximately 100m depth.

No modern exploration was undertaken until Coro Mining Corp (Coro), a predecessor company to Marimaca Copper, began to assemble the Project ground holdings. The Marimaca deposit was identified in 2016, following a reverse circulation (RC) drill program. Coro subsequently detailed geological surface mapping and rock chip sampling, additional RC drilling, core drilling to support geotechnical and geometallurgical studies, metallurgical test-work, and mining studies. An initial resource estimate was completed in January 2017, and Mineral Reserves were first estimated in 2018.

Coro completed a feasibility study in June 2018 (the 2018 Feasibility Study). This study considered an open pit mining using conventional equipment to feed a refurbished process plant, referred to as the Ivan plant, that would have the capability of producing 10,000t of cathode copper per year.

The 2018 Feasibility Study is not currently considered to be the preferred Project development option. Marimaca Copper is not treating the study as current, and the Mineral Reserve estimates are also not considered to be current. However, some of the baseline information generated in support of the 2018 Feasibility Study was used in the 2020 PEA. An Environmental Impact Statement (Declaración de Impacto Ambiental, DIA in the Spanish acronym) and the Mining Safety Regulations and Environmental Qualification Resolution (RCA) was approved on 5 July 2018. Mineral Resources were updated in late 2019, as part of an internal study of the Mixed area (MAMIX) and again in 2022 – the results of which were discussed in the 2022 MRE report. That captures a total of 110,790m drilled distributed across 429 drill holes. The 2023 MRE captures a total of 139,164m distributed across 554 drill holes.

Coro changed its name to Marimaca Copper in May 2020.

1.3 Geology, Mineralization and Deposit Types

The Marimaca deposit is located within a belt of Mesozoic age copper deposits, known as the Coastal Copper Belt, which range in (pre-mining) size from Mantos Blancos, (~500 Mt) to Ivan (~50 Mt). These deposits, which are recognized as both "manto-type" and IOCG types, occur in a variety of host rocks and alteration associations and have different morphologies and structure.

The host rocks in Marimaca are intrusives from the "Naguayán Stock", an equigranular monzodiorite that grades to diorite in part cut by monzodiorite porphyries and by various systems of dacitic and dioritic dikes (NE, NS, NW and WNW orientation).

A system of sub-parallel, planar, pervasive and persistent fractures occurring along an NS elongated structural belt is the most important structural feature of Marimaca, giving to the rock an appearance of "pseudo-stratification", composed of cent-decametric sub-parallel "sheeted-like" fractures. A WNW to NW system of late faults is important and created additional permeability favorable for the formation of an oxide blanket.

The Marimaca deposits consist of a copper oxide blanket, exposed at the surface extending for approximately 1,600 m along the NNW direction, 500 to 400 m wide and 200m to 300 m thick (Figures 7-10 and 7-11). Two thirds of the middle-upper part of the oxidized column correspond to copper oxides whereas the lower one-third corresponds to mixed and lesser chalcocite mineralization. Although general geometry is a blanket, the mineral zone interpretation was guided by the structural control, especially the NS dipping east and the late NW to EW structural system.

The mineralogy of the oxide zone consists of brochantite, atacamite, chrysocolla and wad occurring as disseminations and impregnation of fractures in the parallel band system with a

NS orientation, but also in diagonal faults systems with NE and NW orientation. The subjacent mixed zone consists of copper oxides and remnants of chalcocite and covellite, minor pyrite and chalcopyrite. The secondary sulfides carry mostly sooty chalcocite replacing pyrite and covellite after chalcopyrite.

The Marimaca alteration consists of a metasomatism with very little evidence of destructive hydrothermal alteration. The calc-sodic (Na-Ca) metasomatism is background alteration, whereas albitization and chlorite are alteration minerals related to mineralization. Some K-spar and biotite are also observed. At the oxide zone, the limonite, mostly goethite, is associated with copper mineralization.

Marimaca displays many characteristics of the IOCG mineralized system: primary mineralization consisting of low pyrite and chalcopyrite-magnetite, calco-sodic alteration, however no Au occurrences are recorded or observed. Marimaca differ from typical coastal IOCG districts by the intense supergene alteration and mineralization.

The formation of the supergene blanket such as that discovered and evaluated at Marimaca has been not described in any other IOCG district. There is strong evidence that the actual oxide body was formed due to the oxidation of a previous sulphide blanket. Remnants of this blanket were encountered consisted of chalcocite and covellite replacement of pyrite and chalcopyrite. Evidence of the oxidation process can be encountered in the Mixed zone, where zoned green and black copper oxides partially replace secondary sulphides. Mineralogic zoning and copper grade distribution in the blanket also suggest repeated events of lateral migration and accumulation. This process requires abundant pyrite to produce enough sulphuric acid, but as established the IOCG system is low in pyrite. It is possible that a very rich and pervasive chalcopyrite >> pyrite primary mineralization and a long-lived process of oxidation can explain the formation of the Marimaca's uncommon secondary blanket.

1.4 Exploration Status

The 2023 MRE update captures an additional 28,374 m of drilling relative to the 2022 MRE. The captured drilling was completed during the 2022 infill program. Figure 1-2 shows the distribution of new drill holes added and used for the purposes of the present 2023 MRE.

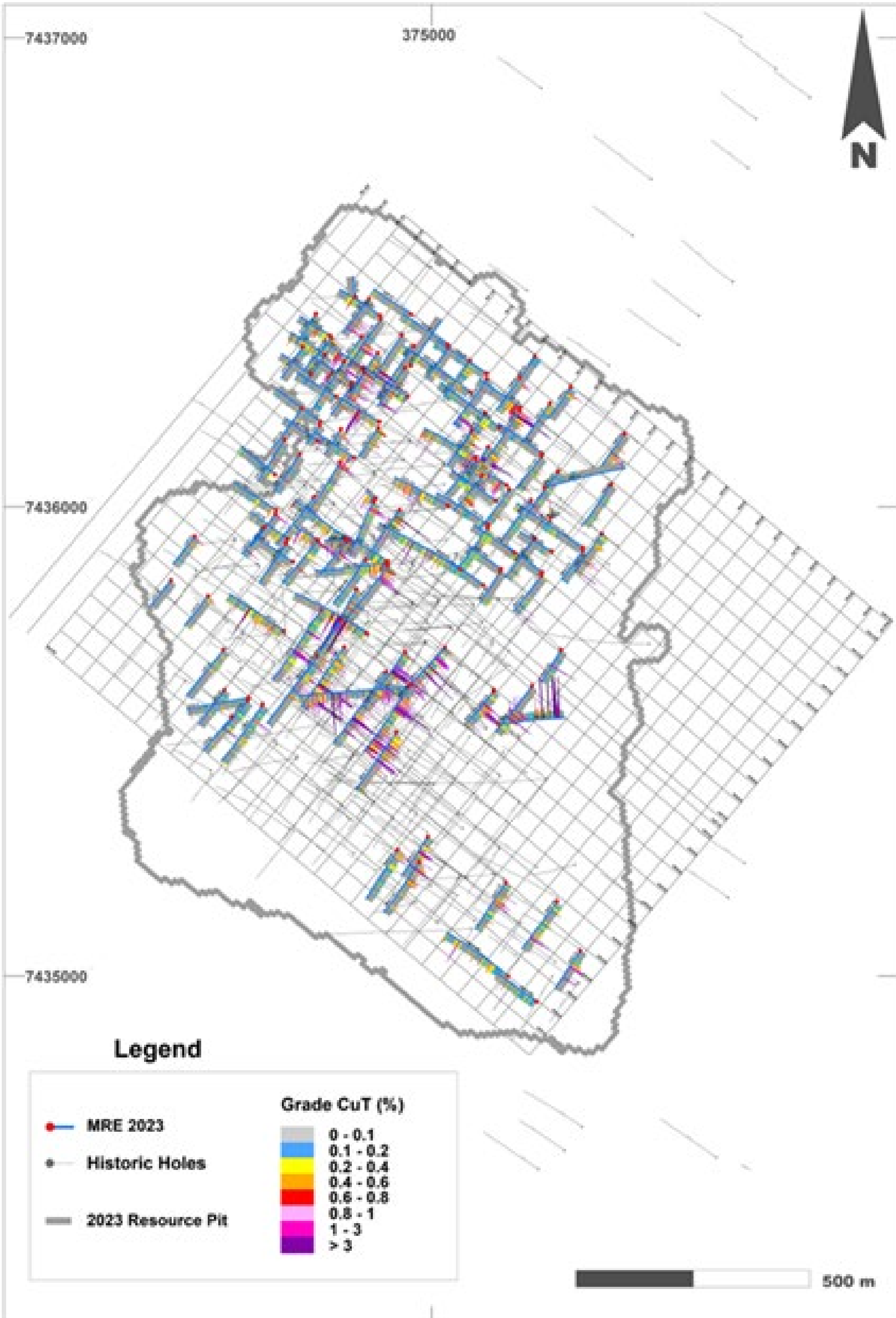


Figure 1-2: Location of new holes added for the 2023 MRE. Horizontal projections also show %CuT grades as histograms. Project local grid consisting in 50 m spaced sections in NE and NW directions is also shown. Marimaca Copper Corp., 2023

In addition to drilling since 2020 the following exploration work has been carried out:

- Full assay of the drilling sample database with Sequential Copper assays (mostly CuCN) for all the >0.1 Cu%. Since the 2021 campaign, Sequential Copper is the standard assay methodology for all samples
- Re-logging previous drill holes for a better definition of mixed and secondary sulphide mineralization, this work was benefited by the new Sequential Copper assaying
- Actualization and check of the Topographic field bases
- Completion of a new drone driven imaging and topographic orthorestitution
- Re-interpretation of the rock geochemistry
- High Resolution Magnetics and deep IP/R geophysics surveys
- Detailed surface mapping of dyke system, emphasizing rock types and contact relationships

1.5 Drilling, Sample Preparation, Analyses, QA/QC, Security and Specific Gravity

Assay samples reported in the 2022 MRE and the 2023 MRE were prepared at a laboratory site in Calama and assayed by Andes Analytical Assay Ltd. (AAA) in Santiago. Marimaca RC holes are drilled on a continuous 2-meter basis and riffle split on site up to one-eighth (12.5%) of its volume, after which samples are sent for preparation and assaying. Diamond drill hole (DDH) samples are obtained every 2 meters from a half-core.

All samples are transferred by laboratory personnel from the Project to Calama for preparation, and then returned to generate analysis batches with the corresponding control samples. Finally, they are sent to the laboratory for AAS assaying to obtain total copper (CuT) and soluble copper (CuS) grades.

Appropriate facilities in the field (historical adits) are used for storage of RC cuttings and rejects, as well as crushed rejects of DDH samples and trays with backup half-cores.

Specific gravity was determined from 634 samples collected during 2017-2022, using the water displacement method with paraffin coating. Measurements were done by Mecanica de Rocas (Rock Mechanics) lab in Calama.

The analytical quality control programs implemented at Marimaca involve the use of coarse/preparation and pulp duplicates for precision analyses, standard reference materials (SRM) and, only since 2018, fine blanks for contamination analyses. Check samples were only used during the initial discovery exploration campaign. Marimaca has protocols in place for handling analytical results that exceed acceptable limits, which can ultimately trigger re-assays of entire or portions of sample batches.

NCL reviewed Marimaca´s QA/QC programs with summary findings below:

Coverage: Around 20% in all cases, which more than meets industry standards, though with slight excess of duplicate sample coverage for RC holes, mostly in detriment of SRM sample coverage, which reached only 3% in the most recent campaign.

SRM samples: Materials obtained from Geostats (2016-2018) show good accuracy and precision, though with some uncertainty in a number of cases due to their low coverage. INTEM materials, certified standards prepared with Marimaca's mineralized samples (2018-present) show generally improved results, with very good accuracy and precision.

Duplicate samples: Both preparation and pulp duplicates show very good precision, with virtually no observations. However, field duplicates should also be considered for insertion in the future, in order to properly control the first split right after drilling.

Check samples: The initial drilling campaign shows sufficiently good accuracy, despite a lack of other control measures, due to the considerable number of control samples and a decisively strong assay correlation between laboratories.

Blank samples: Fine blanks (technically SRMs with grades sufficiently close to the detection limit) show very good results, with no apparent signs of contamination. The lack of blank samples in early campaigns is of moderate to low concern, partly mitigated after a review of the quality controls reported by both laboratories. However, coarse blanks should be considered for insertion in the future, in order to properly control contamination during sample preparation.

The security as was observed in the field and in the digital files appears to be well kept and follows standard industry best practices. NCL considers that both company and laboratory personnel used care in the collection, management and assay of drill hole data. This, along with an extensive review of reports and analytical results suggest that, apart from minor concerns, the resource database is free of apparent bias.

1.6 Mineral Processing and Metallurgical Testing

Marimaca Copper Corp. has completed five metallurgical test programs (Geomet I, II, III, IV and V) and a variability study to characterize the metallurgical response to samples collected from its Marimaca copper project. Tests were performed considering parameters such as: mineral subzone, agglomeration conditions, particle size, column height, irrigation rate and acid concentration in the irrigation solution. Mineralized material at the Marimaca project is expected to be crushed, agglomerated, leached and extracted through a solvent extraction (SX) and electrowinning (EW) circuit. Low-grade mineralized material will be sent to a run-of-mine (ROM) leach.

Metallurgical results have been consistent across metallurgical testwork phases 1-5. Results support the metallurgical performance assumptions made in the 2020 PEA (76% recovery of CuT in heap leaching and 40% for ROM leaching). For the purpose of this Resource Estimation, no new changes to the mineral processing assumptions have been made relative to the 2020 PEA and 2020 MRE. Since the 2020 PEA and 2020 MRE, Marimaca has completed the Geomet V program which included column tests completed at the 2020 PEA industrial operating conditions (4m column heights).

Geomet I and II

During Geomet I, seven (7) samples where generated for column testing from copper mineralized zones defined during the 2016 drilling campaign. These were obtained from a matrix linking the spatial location with the mineral zones. The scope of Geomet I included the mechanical preparation of the material, its characterization, head particle size analysis, sulphation tests, iso-pH tests, leaching tests at two crush sizes in seven columns of 6” x 1 meter in duplicate including leach residue analysis. Phase 2 (Geomet II) of the metallurgical program was commissioned using the same seven (7) samples.

The recoveries and the acid consumption that were estimated from the performed tests for the indicated copper grades. The leaching kinetics for all samples is fast, at one-third of the leaching cycle achieving 70% to 80% recovery. The expected net (Gangue) acid consumption is estimated to be between slightly below 40 kg/t up to 60 kg/t.

Geomet III

In Geomet III the samples tested were of a higher proportion of brochantite/atacamite and chrysocolla mineral-type as these two mineral-types will be treated in the first years from the near-surface (5 to 10 meters) mining. Thirty-seven (37) composites where obtained from 13 drill hole locations - 10 were Reverse Circulation (RC) and 3 were from Diamond Drill Hole (DDH) core. This test program included the Head Chemical Characterization of the 37 composites (CuT, CuS, FeT, Al, Mg, CAA, CO3, AIS, FeTS and MgS) and the completion of 42 iso-pH 1.5 tests, 37 of them at 48hrs and 5 at 72 hrs. Regarding copper recovery, except for samples M-21, M-22 and M-23, over 100% of the soluble copper ratio (acid soluble assay) was recovered. This is consistent with this trend in the Geomet II column testing for the oxide mineral-type. The samples tested extracted 4 percentage points more copper than their copper solubility ratio. On average, the total Cu extraction was 84.13% and the average solubility ratio was 79.4%. It can be inferred therefore that under the test conditions a fraction of the acid insoluble copper was dissolved. The net (Gangue) acid consumption averaged 39.3 kg/t for the 37 composites.

Geomet IV

Results from the Geomet IV column leach tests were favourable indicating strong recoveries and relatively fast leach kinetics across samples, relative to the acid soluble copper ratios for the samples and it was noted that there is a linear relationship between time and acid consumption and that a higher material height produced a lower specific acid consumption while still achieving the recovery rates observed in the testing program. Results support the recovery assumptions made in the 2020 PEA of 75.7% recovery of total copper for heap leach and 40% for the ROM leach. Recoveries exceeded the acid soluble component (CuS) of total copper in virtually all samples, some by significant margins, indicating a larger proportion of the copper is acid soluble and may be recovered in heap leaching. The use of seawater was also confirmed to be compatible with heap leaching process with no reduction in recovery and some increases in recovery noted in certain mineral sub-zones.

Variability Program

Results from the Variability Program demonstrate relatively uniform metallurgical behaviour within each mineral zone when considering acid consumption and copper recoveries. Similar to results observed in the Phase 4 metallurgical program, the majority of the composite samples returned recoveries that exceeded the solubility ratio, indicating that all of the acid soluble copper was recovered as well as additional copper not reported in the soluble copper assays. Additionally, the BROC, CRIS and WAD samples generally returned recoveries that exceeded the leaching potential, while the MIX and ENR samples reached recoveries between the solubility ratio and the leaching potential.

The iso-pH acid consumption test also demonstrated a strong correlation when compared with the AAC test which provides strong validation for the results. Copper recoveries did not demonstrate significant sensitivity to acid level test between 2.5 gpl, 5 gpt and 10 gpl. A slightly higher copper recovery is observed with higher acidity, but the effect is very limited. The sensitivity of acid consumption to acid level was higher than the copper recovery sensitivity. Acid consumption decreases materially at lower acidity. This is a known characteristic of the Marimaca ore and will play an important role in the processing plant operating condition design.

Geomet V

The Phase 5 Program was designed to confirm the 2020 PEA process design conditions and to evaluate potential optimization opportunities of both copper recovery and acid consumption identified during Phases 1 – 4 and the variability study. The results of the Phase 5 Program are positive, with optimization opportunities identified in most of the samples studied and tested.

The Heap Leach Program Design consisted of the following components:

- Sampling and Sample Preparation
- Chemical Head Characterization and Mineralogical Analysis
- Iso-pH Bottle Roll Tests
- Acid Level Sensitivity Bottle Roll Test
- Sulfation Tests
- Minicolumn Tests
- Column Tests

The ROM leach Program Design consisted of the following components:

- Sampling and Sample Preparation
- Chemical Head Characterization and Mineralogical Analysis
- Iso-pH Bottle Roll Tests
- 3 Acid Level Sensitivity Bottle Roll Test

- Crushed Column Tests
- 1m3 Container Test
- Sequential ROM Column

Results from Phase 5 demonstrate metallurgical performance in scaled-up, industrial height operating design conditions. Results confirm the previous understanding of the Marimaca project's metallurgical performance based on results from Phases 1-4. Phase 5 also provides further data to support acid consumption performance, particularly the confirmation of the low levels of both carbonates (<1.0%) and nitrates (<0.03%) with the Marimaca oxide deposit sample set.

1.7 Mineral Resources Estimate

The Mineral Resources Estimation discussed herein is based on information from 139,164 m of DDH and RC drill, stored in a secured central database, and evaluated using a geostatistical block modeling technique.

Rock-structure and Mineral Zone distribution were interpreted by hand on paper in a set of orthogonal vertical cross sections oriented NE and NW, at 1:1,000 metric scale (see examples in Figures 1-3 and 1-4). All the deposit area was covered by a set of 50m spaced sections. Mineral Zones identified are: Brochantite, Chrysocolla, Enriched, Mixed, and Wad. In addition, a Chalcopyrite unit was identified and modelled but it has been considered as waste for the purpose of this MRE, which is based on leachable material.

The order of interpretation was litho-structure first and then the mineral zone into transparent overlays. Mineral Zone (MZ) interpretations were used as MRE domains. The mineral zones interpretation was based primarily on the drillhole logging.

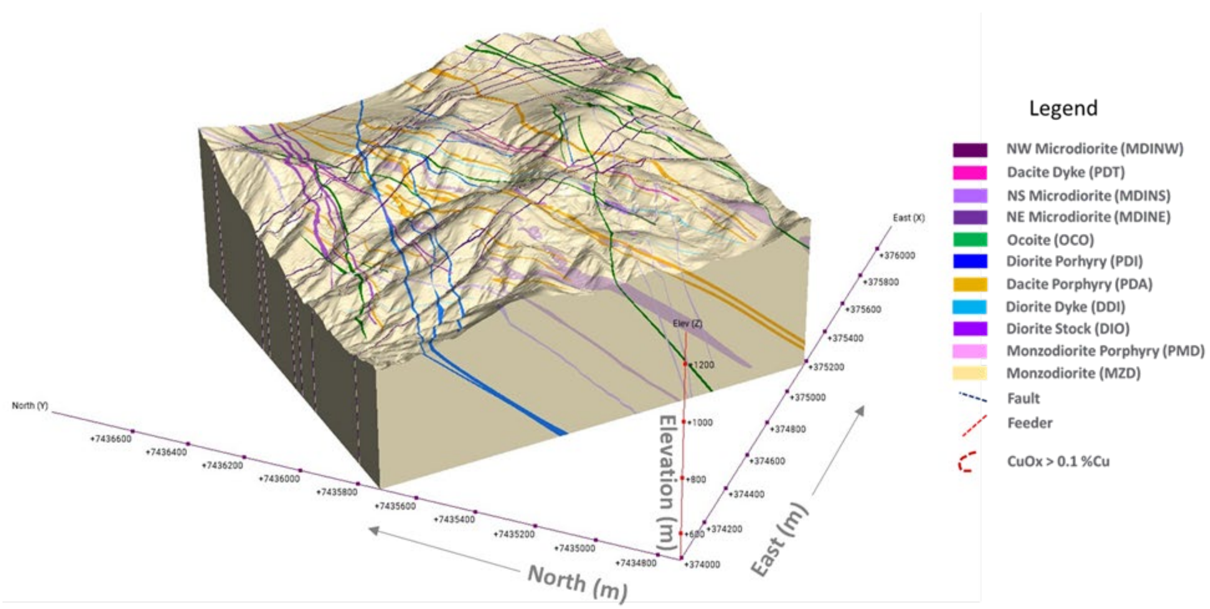


Figure 1-3: Marimaca Project. 3D Lithological Model (2023) built in Leapfrog Geo, Marimaca Copper Corp., 2023

The 3D models for litho-structure (Figures 1-3 and 1-5) and mineral zone were then assembled in Leapfrog TM using sections and drill hole data by consultants, Atticus Geo. For the 2023 MRE exercise the 2020 Leapfrog TM lithological model was fully updated considering the rock and structure units revision by detailed surface mapping and drill hole sample logging. The Mineral Zone model was also updated, mostly reflecting the results from new added infill drilling.

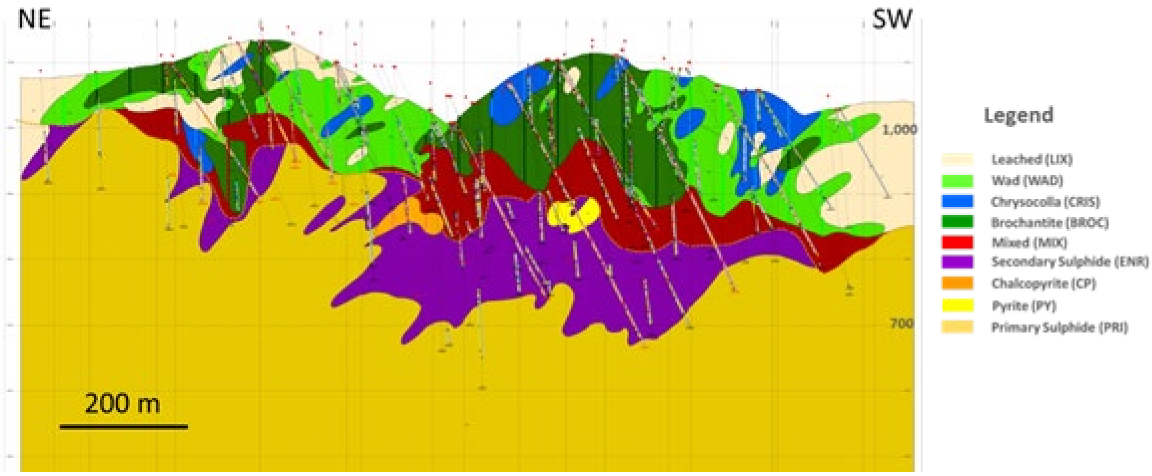


Figure 1-4: Marimaca Project. Updated Mineral Zones Section Interpretation, Marimaca Copper Corp., 2023

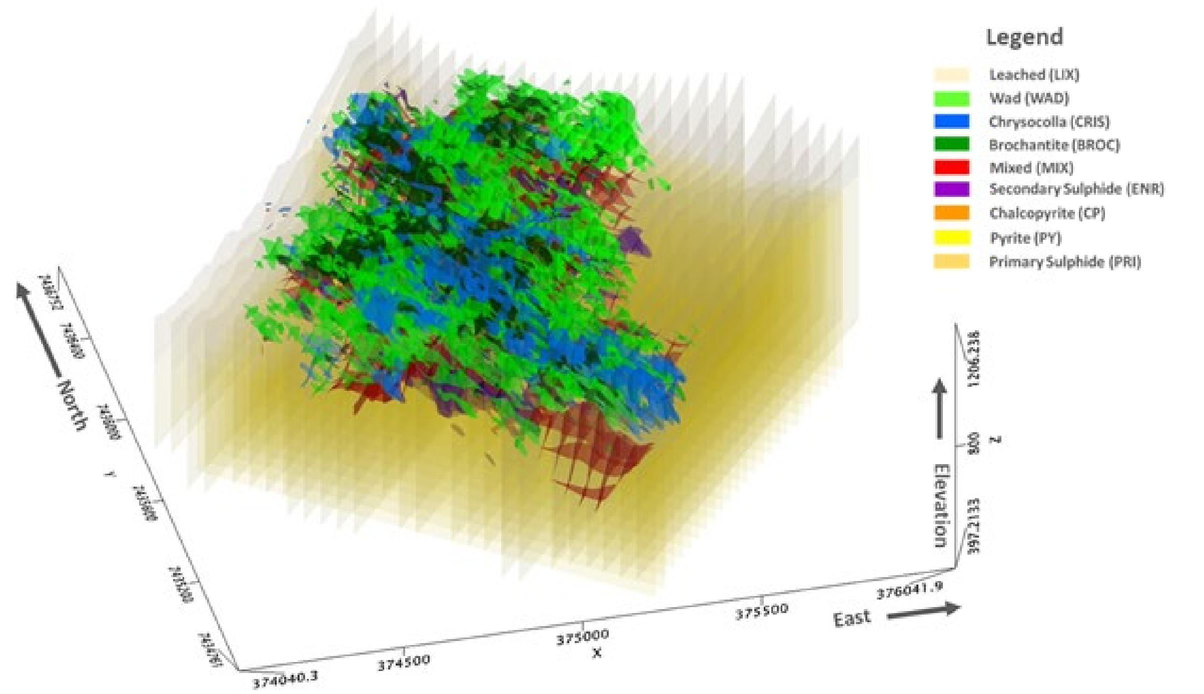


Figure 1-5: Lithological Model Section Integration (3D view looking NE), Marimaca Copper Corp., 2023

The following stages were developed to build the resources model of the Marimaca deposit and generate the resource estimate:

- Analysis of exploration data and definition of the estimation populations
- Validation of three-dimensional solids to the defined population
- Statistical analyses of the samples of CuT and CuS in each population
- Variography and anisotropy analyses. Definition of preferential directions, calculation and adjustment of variograms per population
- Detection and definition of treatment of outliers
- Definition of the Block Model
- Definition of the estimation strategy and Kriging plans per element and population
- Estimation of grades for each element of each population
- Categorization of resources
- Validation of the Model through:
  - Comparative statistics between composites and estimated blocks
  - Analyses of smoothing of grades
  - Moving window analyses of composites and blocks estimated in different directions and Nearest Neighbor comparison
  - On screen validation
- Final Report of the geological resources by category

The drilling database contains data from a total of 139,164 m of drilling, including 52 Diamond Drill (DDH): 11,978 m and 502 Reverse Circulation (RC) holes: 127,186 m. Hole collars and deviation were surveyed. Samples were carefully logged and assayed by Total and Soluble Cu

(CuT and CuS). All >0.1%CuT were assayed by Cyanide Soluble Cu (CuCN) as part of Sequential Cu methodology, looking for to improving the quality of mixed and secondary sulphide logging. The resource estimation was restricted to CuT and CuS.

Table 1.1 presents the information contained in the database.

Table 1-1: Marimaca Database General Information

	Total	RC	DDH
#Drill	560	508	52
Drilled mts	140,603	128,626	11,977

	TOTAL		RC		DDH	
	#Samples	Meters	#Samples	Meters	#Samples	Meters
Samples with CuT > 0	69,682	139,354	63,693	127,386	5,989	11,968
Samples with CuS > 0	69,682	139,354	63,693	127,386	5,989	11,968

*Note: total drilling informing the 2023 MRE is 139,164 m over 554 holes (6 additional holes noted above fall outside MOD area and are not included in the 2023 MRE)

The drilling, logging, sampling, analysis and recording information procedures are consistent with generally recognized industry best practices. NCL concludes that the samples are representative of the source materials and there is no evidence that the sampling process introduced any bias.

The average specific gravity (SG) of each estimation unit was calculated using a set of 634 measures from the DDH campaigns and surface samples, divided according to each mineral zone. Outliers were not considered to obtain average figures; the following Table shows the specific gravity for each of the mineralized zones (Table 1-2).

Table 1-2: Mineral Zones Specific gravity

SZMIN	Mean (t/m3)
Brochantite	2.639
Chalcopyrite	2.746
Chrysocolla	2.665
Enriched	2.681
Mixed	2.695
Wad	2.628
Lix	2.657
Pyrite	2.729
Waste	2.642

Marimaca implemented analytical quality control measures, consistent with accepted industry best practices. The analytical quality control program includes the use of control samples inserted with all samples submitted.

To validate the use of data from the DDH and RC exploration campaigns, twin holes samples (RC vs. DDH) close to 10m maximum, from both exploration campaigns were compared using the GS Lib getpairs routine.

An analysis of the samples' length was done to check if regularization was required (compositing). Practically all the samples are 2 meters long, so it was concluded that no further action in this regard was needed. Therefore, the samples to be used in the grade modeling process are the raw samples from the drill hole database, coded according to the MZ solid that contains their centroids.

The contact characteristics between the units to estimate were reviewed according to the mean grade of the samples, in relation to their distance to the contact defined in the solids model.

The existence of outliers in the estimation populations was analyzed using the log-probability curves for each sample's population, looking for singularities in the curves that may signal the presence of an outlier limit. Identified values were used to cap the different populations.

Correlograms were performed for five Mineral Zones of the geological model (Brochantite, Chrysocolla, Enriched+Mixed, Wad and Chalcopyrite). The variography of CuT was developed using the total samples inside the estimation MZ solids. Correlograms in distinct directions were calculated, according to the structural zones defined in the structural model and discussions with Marimaca's technical team. The determination of the nugget for each population was done using down-hole correlograms.

Ordinary Kriging was used for grade interpolation given the nature of the deposit and the data availability. Four kriging plans were defined to be executed in sequential order. The general concept is to "fill" the grades model, starting with a restrictive estimation plan that considers only interpolation between drill holes, separated distances below the equivalent of 85% of the variogram sill. Then, the following plans increase the search distance and release other restrictions gradually, until the estimation is complete.

Resource Classification was done according to the conditions defined by the number and location of samples in the neighborhood of each block. This criterion attends the requirements established by the CIM code. The first pass generates block estimates with a minimum of two drill intercepts, both within distances shorter than the D_{85}.The second pass maintains the restriction of the number of drill intercepts, but enlarges the search range by twice the D_{85}. These two passes generate Measured and Indicated Resources respectively. The third pass increment the search radius to 4 times the D_{85} and reduces the number of drillholes within this range to one, generating Inferred Resource. A fourth pass was added using a very large search radio, to ensure that all the blocks inside the geological model are estimated. This fourth pass generates Potential mineralized rock.

Visual Validation, Statistic Validation, SWAT plots and Nearest Neighbor were done to ensure the quality of the generated block model. Validations carried out concluded that the estimated grades preserve the characteristic of the mean grade, global variability and tendencies of the original samples.

Once the block model was finished and validated, a Whittle pit was generated using the following technical parameters (Table1-3):

Table 1-3: Technical and Economical Parameters for Whittle Run

PARAMETERS	2023
Mining cost (base)	$1.51/t mined
Mining Cost Adjustment Factor ("**MCaf**") ($/t-10m bench)	$0.04/t mined
Heap Leach ("**HL**") Cost (including G&A and mining cost component from pit to Heap Leach)	$5.946/t processed
Run of Mine ("**ROM**") Process Cost (including G&A and mining cost component from pit to ROM leach)	$1.654/t sold
Selling Cost including SX-EW processing cost	$0.164/lb
Heap Leach Recovery	76% of CuT
ROM Recovery	40% of CuT
Pit Slope angle [1]	42° - 52°
Cu Price	4.0 USD/lb

[1] *The pit slope is estimated at a range of 42° - 52° based on the geotechnical information currently available, but this is anticipated to improve as more data is generated*

The technical and economical parameters used for the 2023 Whittle run were informed by the 2020 PEA cost assumptions. Due to the designation of mined material to either heap leach or ROM, certain cost elements from mining costs have been reallocated to heap leach costs and ROM cost to be appropriately captured in the Whittle run relative to the 2020 PEA reporting. However, on an aggregate basis, they are identical. The 2020 PEA cost assumptions are considered to be the most relevant cost assumptions for the 2023 MRE Whittle run at this stage. The assumptions used in the 2023 MRE are identical to the 2022 MRE.

Table 1-4: Technical and Economical Parameters for Whittle Run relative to 2022 MRE assumptions

PARAMETERS	2022 MRE	2023 MRE
Mining cost (US$/t mined)	$1.51 base ($1.76 avg.)	$1.51 base ($1.76 avg.)
Mining Cost Adjustment Factor (US$/t-10m bench)	$0.04	$0.04
Heap Leach Cost (including G&A and mining cost component from pit to Heap Leach)	US$5.94/t processed	US$5.94/t processed
Run-of-Mine Cost (including G&A and mining cost component from pit to ROM)	US$1.65/t processed	US$1.65/t processed
SX-EW processing cost and selling cost (US$/lb Cu)	$0.16	$0.16
Heap Leach Recovery (% CuT)	76%	76%
ROM Recovery (% CuT)	40%	40%
Pit Slope angle	42 - 52°	42 - 52°

For slope angles, the same figures from the 2022 MRE were used, as no new geotechnical information was available as of the 2023 MRE Whittle run. Slope angle zones were defined in the 2020 MRE and were projected linearly to cover the complete area of the new block model.

Table 1-5 summarizes the In Pit Resources per category for a cut off grade of 0.15% CuT, including all the Mineral Zones estimated. Detail per Mineral Zone is given in the body of this report.

Table 1-5: In Pit Consolidated Mineral Resource Statement, Marimaca (COG 0.15% CuT), NCL Consulting (L. Oviedo, May 18th 2023)

Mineral Resource Category and Type	Quantity (kt)	CuT (%)	CuS (%)	CuT (t)	CuS (t)
Total Measured	96,954	0.49	0.28	473,912	268,628
Total Indicated	103,358	0.41	0.21	425,797	219,690
Total Measured and Indicated	**200,312**	**0.45**	**0.24**	**899,709**	**488,319**
Total Inferred	**37,289**	**0.38**	**0.15**	**141,252**	**55,802**

* Pit shell constrained resources with demonstrated reasonable prospects for eventual economic extraction (RPEEE) are generated using series of Lerchs-Grossmann pit shell optimizations completed by NCL
* CuT means total copper and CuS means acid soluble copper. Technical and economic parameters include: copper price US$4.00/lb; base mining cost US$1.51/t ($1.76/t average); Heap Leach ("HL") processing cost US$5.94/t (incl. G&A); Run-of-Mine ("ROM") processing cost US$1.65/t (incl. G&A); selling cost US$0.16/lb Cu; HL recovery 76% of CuT; ROM recovery 40% of CuT; and 42°-52° pit slope angle
* With the economic parameters stated above, the Cut-Off grade of the Mineral Resource Estimate is approximately 0.15% CuT.
*An external dilution factor was not considered during this resource estimation. Internal dilution within a 5 m x 5 m x 5 m is considered and the use of small loading equipment is foreseen for adequate selectivity. Assumes 100% mining recovery.
*Quantities and grades in a mineral resource estimate are rounded to an appropriate number of significant figures to reflect that they are approximations.
* Mineral resources which are not mineral reserves do not have demonstrated economic viability. Due to the uncertainty which may attach to inferred mineral resources, it cannot be assumed that all or any part of an inferred mineral resource will be upgraded to an indicated or measured mineral resource as a result of continued exploration

Table 1-6 shows the sensitivity of the 2023 MRE to variations in the CuT cutoff grade.

Table 1-6: Sensitivity of Tonnes, Grades and contained Metal to changes in the Cut Off Grade (base case cut-off 0.15% CuT), NCL Consulting (L. Oviedo, May 18th, 2023)

Cut-off grade (% CuT)	Measured			Indicated			Measured + Indicated			Inferred		
	Quantity (kt)	CuT [%]	CuS [%]	Quantity (kt)	CuT [%]	CuS [%]	Quantity (kt)	CuT [%]	CuS [%]	Quantity (kt)	CuT [%]	CuS [%]
0.40	44,031	0.77	0.44	37,549	0.69	0.38	81,580	0.73	0.41	12,080	0.64	0.24
0.30	60,181	0.65	0.38	55,492	0.58	0.31	115,673	0.62	0.35	18,827	0.54	0.21
0.25	70,621	0.60	0.35	67,997	0.52	0.28	138,618	0.56	0.31	23,581	0.48	0.19
0.22	77,843	0.56	0.32	77,027	0.49	0.26	154,870	0.53	0.29	27,236	0.45	0.18
0.20	82,953	0.54	0.31	83,830	0.47	0.25	166,783	0.50	0.28	30,189	0.43	0.17
0.18	88,291	0.52	0.30	91,309	0.44	0.23	179,599	0.48	0.26	33,002	0.41	0.16
0.15	96,954	0.49	0.28	103,358	0.41	0.21	200,312	0.45	0.24	37,289	0.38	0.15
0.10	113,350	0.44	0.24	127,615	0.36	0.18	240,965	0.39	0.21	46,612	0.33	0.13
0.05	136,069	0.38	0.21	164,998	0.29	0.15	301,067	0.33	0.17	66,200	0.25	0.10
0.00	146,110	0.35	0.19	178,217	0.27	0.14	324,327	0.31	0.16	71,957	0.24	0.09

* Pit shell constrained resources with demonstrated reasonable prospects for eventual economic extraction (RPEEE) are generated using series of Lerchs-Grossmann pit shell optimizations completed by NCL
* CuT means total copper and CuS means acid soluble copper. Technical and economic parameters include: copper price US$4.00/lb; base mining cost US$1.51/t ($1.76/t average); Heap Leach ("HL") processing cost US$5.94/t (incl. G&A); Run-of-Mine ("ROM") processing cost US$1.65/t (incl. G&A); selling cost US$0.16/lb Cu; HL recovery 76% of CuT; ROM recovery 40% of CuT; and 42°-52° pit slope angle
* With the economic parameters stated above, the Cut-Off grade of the Mineral Resource Estimate is approximately 0.15% CuT.
*An external dilution factor was not considered during this resource estimation. Internal dilution within a 5 m x 5 m x 5 m is considered and the use of small loading equipment is foreseen for adequate selectivity. Assumes 100% mining recovery.
*Quantities and grades in a mineral resource estimate are rounded to an appropriate number of significant figures to reflect that they are approximations.
* Mineral resources which are not mineral reserves do not have demonstrated economic viability. Due to the uncertainty which may attach to inferred mineral resources, it cannot be assumed that all or any part of an inferred mineral resource will be upgraded to an indicated or measured mineral resource as a result of continued exploration.

1.8 Local Resources and Infrastructure

Antofagasta and Mejillones are modern cities with all regular services, serving a combined population of approximately 570,000. Numerous mining-related businesses are located in the cities. Power lines and water supply intakes are located near the property. Both Antofagasta and Mejillones are relevant shipping ports, especially Mejillones, which is a mega-port for larger cargo. In addition, there are five thermoelectric plants in Mejillones and the port represents the most important sulfuric acid terminal in the north of the country. The installed capacity of electric production currently available at Mejillones is close to 900 MW, while the sulphuric acid storage facilities import more than 6 million tons per year.

While Mejillones is an industrial port and most of the labor force is specialized in this type of job, Antofagasta has the largest labor force dedicated to mining in northern Chile. The level of specialized mining knowledge is high and they participate both in the work of large and medium scale mining. The city of Antofagasta is a "mining cluster", where research, education, technical training centers and the largest suppliers of equipment and services for mining in the country operate.

1.9 Conclusions and Recommendations

A team of independent consultants, under the leadership of NCL, was retained by Marimaca to visit the Marimaca deposit three times, one on the second week of December 2016, another in August 2019 and a third one in February 2022, inspect the project, review and audit the data and estimate the Mineral Resource. NCL examined the different sources of input information: raw data (QA/QC), exploration, geology and mineral modelling estimation units.

The purpose of the investigation was to estimate the Mineral Resource, in compliance with recognized industry best practices and report them according to Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards for Mineral Resources and Mineral Reserves (May 2014).

NCL carried out a Resource Estimation of the Marimaca Project, resulting in the estimation of Measured, Indicated and Inferred Resources. For a cutoff grade of 0.15% CuT, the Resources inside an optimized pit envelope are 91.0Mt of 0.49% CuT and 0.28% CuS of Measured Resources, 103.4Mt of 0.41% CuT and 0.21% CuS of Indicated Resources and 37.3Mt of 0.38% CuT and 0.15% CuS of Inferred Resources.

Since 2016, aggressive exploration in Marimaca has defined copper mineralization zones amenable to open pit mining. The regional exploration potential of the exploration of the properties is good.

The technical information on Marimaca attests to the high overall quality of the exploration and design work completed by site personnel. NCL examined the data, the exploration, and the geology modeling and produced the Mineral Resource estimates of Marimaca. NCL concluded that the models, Mineral Resources and Statements for Marimaca are appropriately categorized and free of material errors.

The QPs consider that the work carried out by Marimaca in relation with the Resource Estimation is of excellent quality and the following general recommendations are made to Marimaca:

- Continue to update the 3D geology and structural models of the Marimaca Oxide Deposit
- Improve the Marimaca Oxide Deposit rock model in order to optimize future dilution and losses
- Integrate the geotechnical data within the geological model
- Develop and improve the resolution of the geo-metallurgical model prior for use in a Feasibility Study, including the evaluation of the impurities mitigation identified in

Geomet V and optimizations of heap leaching conditions for acid consumption and copper recovery

- Additional exploration on the Marimaca satellite properties and sulphide potential beneath the Marimaca oxide mineralization
- Progress the study phase and preliminary engineering of the Marimaca Project and towards a Definitive Feasibility Study and relevant permitting

A budget of $14.6M is estimated to complete the recommended list of activities.

Activity	Cost Estimate
Geological, structural, rock, and geometallurgical model updates	US$1,600,000
Further exploration drilling on sulphide and satellite oxide targets	US$3,000,000
Preliminary engineering and supporting documentation for permitting submissions	US$4,500,000
Definitive Feasibility Study engineering, preparation and report	US$5,500,000
Total	**US$14,600,000**

Other than those disclosed in this technical report, NCL is not aware of any other significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the Marimaca Project.

2 INTRODUCTION AND TERMS OF REFERENCE

The Marimaca Project is located near Antofagasta in the Antofagasta Province, Region II of Chile. The Marimaca Copper Corp. (MC) is a British Columbia company incorporated under the Business Corporations Act of B.C., on September 22, 2004, with a registered office at the 745 Thurlow Street, Suite 2400, Vancouver, BC V6E 0C5.

Marimaca is a Canadian public company listed on the Toronto Stock Exchange (symbol MARI) which as a result, generates the requirement for Marimaca to file a technical report to support the disclosure of Mineral Resource memorandum.

In 2016, MC retained the services of NCL Ingenieria y Construccion SpA (NCL) to visit the MC project and compile a technical report pursuant to National Instrument 43-101 Standards of Disclosure for Mineral Projects and Form 43-101 published in January 2017. Following 2017, MC has executed several further drilling campaigns and has gathered new geological mapping and sampling information which has been reviewed and utilized by the QP for this technical report. A visit to the site was made in August 2019, for a total of three days, where QP had the possibility to visit the surface and the underground workings present in the newly drilled areas. A further visit to the site was made in February 2022, for a total of three days.

This technical report updates and summarizes the relevant technical information to support the new Mineral Resources Estimation for the Project. This technical report is based on an inspection of the property by a team of qualified persons, as this term is defined in National Instrument 43-101, conducted for 2 days in December 2016 and August 2019, and for 3 days in February 2022. In February 2023 MC began compiling a new dataset of technical information based on the 2022 drilling campaign. This dataset was available to NCL in electronic format in the first half of 2023 for review and discussions with technical personnel. The qualified persons have reviewed such technical information and determined it to be adequate for the purposes of this report. The authors do not disclaim any responsibility for this information.

2.1 Term and Reference

The scope of work is defined in an engagement letter executed between MC and NCL and involves mobilizing a qualified person to visit the subject mineral assets to review the technical information relevant to support the Mineral Resources estimate. The objective is to provide an estimation of the Mineral Resources for Marimaca as of May 2023, and to compile a technical report pursuant to National Instrument 43-101 to support the disclosure of Mineral Resources by NCL. Responsibilities for each report section are listed in Table 2-1.

Table 2-1: Responsibility of Report Section

1	SUMMARY	MC/NCL
2	INTRODUCTION AND TERMS OF REFERENCE	MC/NCL
3	RELIANCE ON OTHER EXPERTS	MC/NCL
4	PROPERTY DESCRIPTION AND LOCATION	MC/NCL
5	ACCESSIBILITY, CLIMATE, LOCAL RESOURCES AND INFRASTRUCTURE AND PHYSIOGRAPHY	MC/NCL
6	HISTORY	MC/NCL
7	GEOLOGICAL SETTING AND MINERALIZATION	MC/NCL
8	DEPOSIT TYPES	MC/NCL
9	EXPLORATION	MC/NCL
10	DRILLING	MC/NCL
11	SAMPLE PREPARATION, ANALYSIS AND SECURITY	MC/NCL
12	DATA VERIFICATION	MC/NCL
13	MINERAL PROCESSING AND METALLURGICAL TESTING	MJ
14	MINERAL RESOURCE ESTIMATE	NCL
15	MINERAL RESERVE ESTIMATE	
16	MINING METHODS	
17	RECOVERY METHODS	
18	PROJECT INFRASTRUCTURE	
19	MARKET STUDIES AND CONTRACTS	
20	ENVIRONMENTAL STUDIES, PERMITTING, SOCIAL AND COMMUNITY IMPACT	
21	CAPITAL AND OPERATING COSTS	
22	ECONOMIC ANALYSIS	
23	ADJACENT PROPERTIES	MC/NCL
24	OTHER RELEVANT PROPERTIES AND INFORMATION	MC/NCL
25	INTERPRETATIONS AND CONCLUSIONS	MC/NCL
26	RECOMMENDATIONS	MC/NCL
27	REFERENCES	MC/NCL
28	ANNEX 1	MC/NCL
29	ANNEX 2	MC/NCL

2.2 Qualification of NCL

NCL includes more than 40 professionals, offering expertise in a wide range of resource estimation and engineering disciplines. The independence of NCL is ensured by the fact that it holds no equity in any project it investigates and that its ownership rests solely with its staff. These facts allow NCL to provide its clients with conflict-free and objective recommendations. NCL has proven assessments of Mineral Resources, project evaluations and audits, technical reports and autonomous feasibility evaluations to bankable standards on behalf of exploration and mining companies, and financial institutions worldwide. Through its work with many major international mining companies, NCL has established a reputation for providing valuable consultancy services to the global mining industry.

A group of professionals from the NCL Santiago offices compiled the technical report. In accordance with National Instrument 43-101 guidelines, qualified persons visited the Marimaca project between December 2016 and February 2022 as shown in Table 2-2.

Table 2-2: Qualified Person and professional's involvement

Company	Qualified Person	P. Engineer	Site Visit	Responsability
NCL	Luis Oviedo	Ricardo Palma	Dec-16	Overall responsibility on behalf of NCL
NCL	Luis Oviedo		Aug-19	
NCL	Luis Oviedo		Feb-22	
MJO	Marcelo Jo		Jan-20	Metallurgy

2.3 Basis of Technical Report

This technical report is based on information made available to NCL by MC in electronic files and information collected during the site and office visits. The author has no reason to doubt the reliability of the information provided by MC. Other information was obtained from the public domain. This report is based on the following sources of information:

- Discussions with Marimaca, personnel
- Information posted by MC in Intralinks; and
- Additional information from public domain sources
- New Intralinks and digital information from the 2021-2022 campaigns
- NCL's NI 43-101 Technical Report dated February 2018
- NCL's NI 43-101 Technical Report dated January 2020
- NCL´s NI 43-101 Technical Report dated November 2022
- Press Release dated May 18th, 2023

The qualified persons have reviewed such technical information and do not disclaim any responsibility for the information provided and reviewed.

2.4 Declaration

NCL's opinion contained herein and effective May 18th, 2023 is based on information collected by NCL throughout the course of NCL's investigation. The information in turn reflects various technical and economic conditions at the time of writing the report. Given the nature of the mining business, these conditions can change significantly over relatively short periods. Consequently, actual results may be significantly more or less favorable.

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

NCL is not an insider, associate or affiliate of MC. The results of the report by NCL are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings.

2.5 Units and Currency Definitions

All units in this report are metric, unless specified explicitly in the text. The Currency used is dollars of the United States of America.

3 RELIANCE ON OTHER EXPERTS

NCL has not performed an independent verification of the land titles and tenures of this report. NCL did not verify the legality of any underlying agreements that may exist concerning the permits or other agreements between third parties but has relied on the information provided by the legal advisors of MC, Bofill Mir and Alvarez Jana Abogados, (Av. Andrés Bello 2711, piso 8, Las Condes, Santiago, Chile), in an opinion letter sent to MC on June 19th 2023 regarding title matters discussed in Chapter 4 of this technical report. This letter is attached as Appendix 1.

On the technical side, MC's professionals Sergio Rivera, Vice President of Exploration, Paola Kovacic, Exploration Manager, made vital contributions to the exploration of the project and the implementation of this report.

4 PROPERTY DESCRIPTION AND LOCATION

The concessions that make up the Marimaca Project and the surrounding Marimaca District concessions are in Chile's Antofagasta Province, Region II, within 25 km west of the port of Mejillones, approximately 45 km north of the city of Antofagasta and 1,250 km north of Santiago, Chile's capital city. The project area is located at approximately 374,820 E and 7,435,132 S in WGS84 UTM coordinates.

Figure 4-1 shows the project location, highlighting the proximity to first class utilities and infrastructure. The figure also summarizes Marimaca's mining property position.

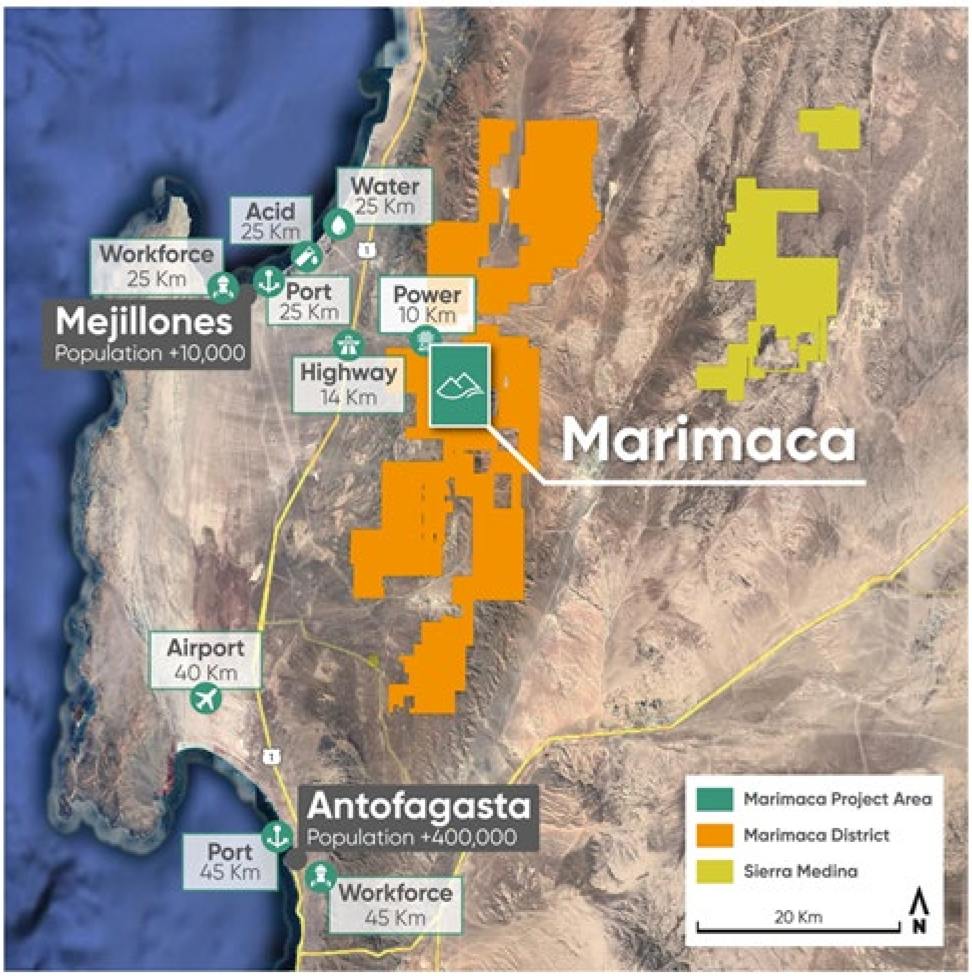


Figure 4-1: Marimaca Project location map, Marimaca Copper Corp., 2022

4.1 Mineral Tenure

The Marimaca Project is comprised of 20 mining/exploitation concessions covering approximately 961 hectares. These concessions are listed in the national mining claims register, and are in the area of Sierra Naguayán, Commune of Mejillones, Province and Region of Antofagasta.

All other concessions held by entities within the Marimaca group currently form part of the wider Marimaca District or the area of Sierra de Medina.

4.1.1 Properties that Comprise the Marimaca Project

The Marimaca Project is protected by the mining/exploitation concessions listed in Table 28-1 of Annex 1 and as shown in Figure 4-2. These concessions are located in zones that are referred to as La Atómica, Marimaca 1-23, Atahualpa and certain parts of the zone referred to as Llanos/Mercedes. Each of these zones are made up of several mining/exploitation concessions.

Each of the mining/exploitation concessions that make up the Marimaca Project are in good standing and all required annual claim fees (*patented*) have been made up to and including 2023, without interruption.

Compañía Minera Cielo Azul ("MCAL"), a Chilean subsidiary of the Company, originally held certain of the Company's interests in the mining/exploitation concessions via option agreements entered into. Most of the options held under these agreements have now been exercised, as summarized below.

Certain concessions that underpin the Marimaca Project are held by other Chilean subsidiaries of the Company, namely Sociedad Contractual Minera Compañía Minera NewCo Marimaca ("Newco Marimaca"); and (iii) Inversiones Cielo Azul Limitada ("ICAL").

In addition, certain net smelter return (NSR) royalty interests have been created over the concessions that make up the Marimaca Project. These include the 1.0% NSR granted to Osisko Gold Royalties in September 2022, for which the Company received US$15.5 million.

The following information sets out all of the additional NSR interests over the Marimaca Project properties. Table 28-1 of Annex 1 also provides further information on NSR interests that apply to individual concessions.

Marimaca 1-23 Claims

The Company acquired 100% of the Marimaca 1-23 claims for US$12.2 million. A 1.5% NSR is payable on these claims, with the Company/MCAL retaining an option to purchase 1% of this interest within 24 months from commencement of commercial production from the claims.

The Osisko royalty terms require these buyback rights to be exercised prior to the commencement of commercial production.

La Atómica

The Company acquired 100% of the La Atomica property for US$6.0 million, which was paid from 2017 to 2021. A 1.5% NSR is payable on this, with the Company/MCAL retaining an option to purchase 0.5% of the 1.5% NSR for US$2.0 million at any time.

The Osisko royalty terms require these buyback rights to be exercised prior to the commencement of commercial production.

Atahualpa

Under the terms of a January 2018 LOI, the Company acquired 100% of the Atahualpa, Tarso, Sierra and Sorpresa properties for US$6.0 million. A 2% NSR was payable under the original option agreement. The Company acquired this interest for US$2.2 million.

Olimpo y Cedro (formerly called Naguayán)

The Company acquired 100% of the Olimpo y Cedro properties for US$6.5 million, which was paid from 2018 to 2022. A 1.5% NSR is payable on the properties, with the Company/MCAL retaining an option to purchase 0.5% of the 1.5% NSR for US$2 million within the first 12 months of commencement of commercial production from the properties.

Llanos/Mercedes

The Company/MCAL acquired the Llanos/Mercedes properties pursuant to the exercise of an option agreement for total consideration of US$2 million payable between 2019 and 2023. In addition, the Llanos and Mercedes properties are subject to a 1% NSR. The Company/MCAL has an option to purchase this for US$0.5 million within 24 months from commencement of commercial production from the properties.

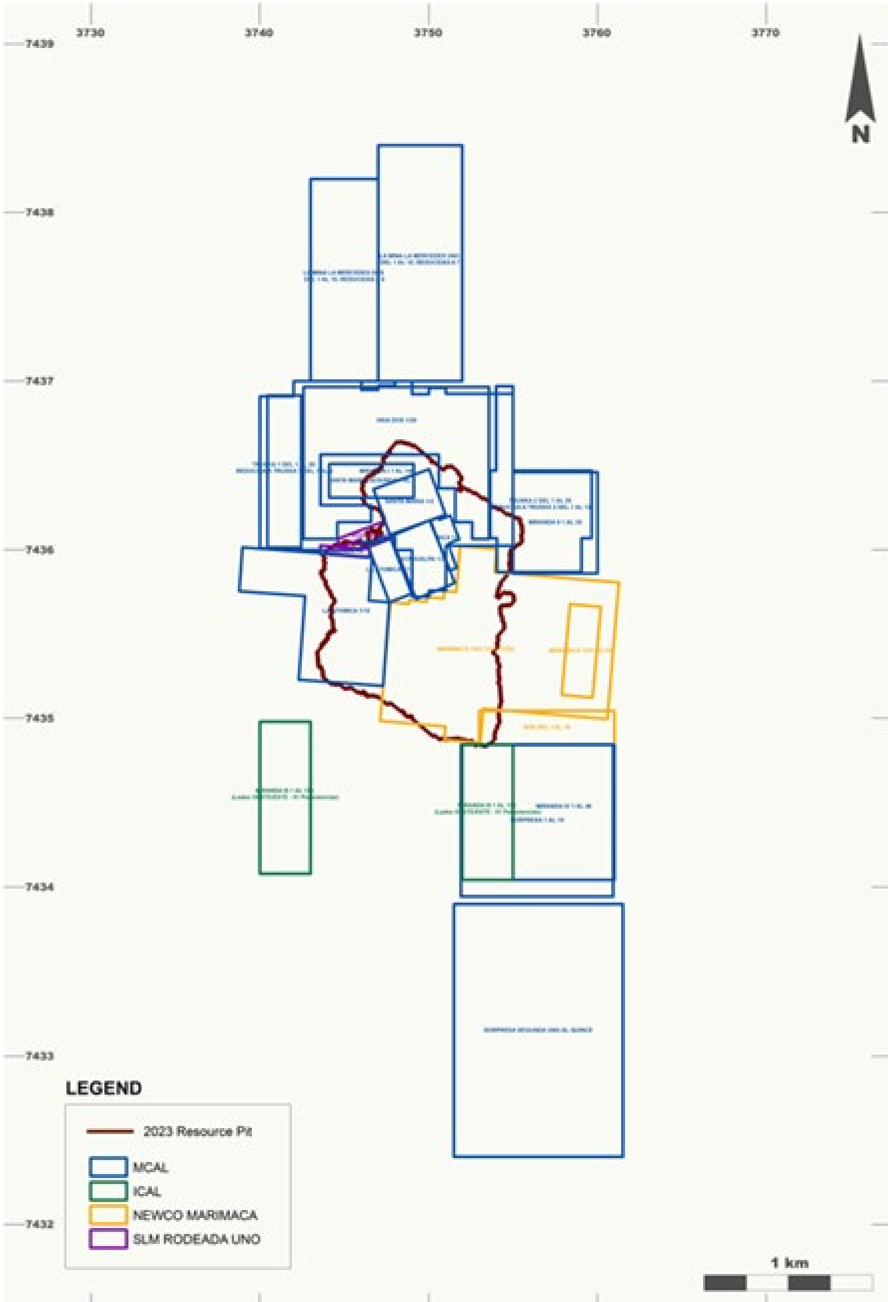


Figure 4-2: Marimaca Project Concessions, Marimaca Copper Corp., 2023

Table 28-1 of Annex 1 shows the list of concessions that comprise the Marimaca Project in more detail.

4.2 Mineral Rights in Chile

The Political Constitution of the Republic of Chile (“*Constitución Política de la República*”) provides that the Chilean State has absolute, exclusive, inalienable and imprescriptible property over all mines and mineral substances located within the national territory, with the exception of surface clays, notwithstanding the ownership of natural or legal persons over the superficial land in the interior of which they are located.

Private individuals may develop mining exploration and exploitation works on the basis of mining concessions granted by judicial resolution. In accordance with Chilean mining legislation, there are two types of mining concessions in Chile: exploration concessions and exploitation concessions. The main characteristics of each are the following:

Exploration Concessions: the titleholder of an exploration concession has the right to carry out all types of mining exploration activities within the area of the concession. Exploration concessions can overlap or be granted over the same area of land; however, the rights granted by an exploration concession can only be exercised by the titleholder with the earliest dated exploration concession over a particular area.

For each exploration concession the titleholder must pay an annual fee of approximately US$1.30 per hectare to the Chilean Treasury and exploration concessions have duration of two years. At the end of this period, the exploration concession may be (a) renewed as an exploration concession, for a new term of up to two further years and in which case the titleholder must waive at least 50% of the surface area of the existing exploration concession, or (b) be converted, totally or partially, into exploitation concessions by exercising the pre-emptive right described in the next paragraph. As of February 2023, exploration mining concessions will have a fixed duration of 4 years, with no possibility of renewal and the annual fee will increase to approximately US$3.87 per hectare.

A titleholder with the earliest dated exploration concession has a preferential right to an exploitation concession in the area covered by the exploration concession. This preference pre-empts the rights of third parties with a later dated exploration concession for the same area, or of third parties without an exploration concession at all, and must be enforced in exploitation mining granting proceedings. Similarly, a pre-existing exploration concession with an earlier dated claim for a mining exploration concession (“*pedimento*”) can void subsequent overlapping mining exploration concessions.

Nonetheless, for an exploration concession’s preemptive rights to remain valid, the titleholder of an exploration concession must oppose any exploitation concession applications from third parties within the same area. This opposition must be filed within thirty days from the date upon which the survey request for any overlapping exploitation concession in process of being granted is published in the Mining Gazette. The opposition will suspend the exploitation mining concession granting process until the decision on the opposition –either rejecting the opposition or determining where the survey cannot take place given the exploration concession's existence and preferred rights– is final.

If the opposition is not filed in a timely manner, then: (a) the exploration mining concession will lose its rights to the overlapped area where the subsequent exploitation mining concession is granted; or (b) the subsequent exploitation concession cannot be voided on the basis of the overlap.

Exploitation Concessions: The titleholder of an exploitation concession is granted the right to explore and exploit the minerals, located within the area of the concession and to take ownership of the minerals that are extracted. Exploitation concessions cannot overlap or be granted over the same area of land.

Exploitation concessions are of indefinite duration and an annual fee is payable to the General Treasury of the Republic in relation to each exploitation concession of approximately US$6.50 per hectare. As of February of 2023, the exploitation mining fees per hectare will be calculated as follows: (i) approximately US$25.80 from year 1 to 5; (ii) approximately US$51.59 from year 6 to 10; (iii) approximately US$58.04 from year 11 to 15; (iv) approximately US$77.38 from year 16 to 20; (v) approximately US$193.45 from year 21 to 25; (vi) approximately US$386.90 from year 26 to 30; and (vii) approximately US$773.81 from year 30 on. These fees will be reduced to approximately US$6.50 per hectare if the project is in operation and to US$19.5 per hectare if the project is not in operation yet but is included in a mining project that has obtained an Environmental Approval Resolution or is in the process of obtaining one. It is believed that the authorities are currently reviewing the application of this regime and considering a possible delay until 2024, for the purpose of issuing the regulations required to govern the procedure to qualify for reduced fee rates.

Where a titleholder of an exploration concession has applied to convert the exploration concession into an exploitation concession, the application for the exploitation concession and the exploitation concession itself take the date of the exploration concession.

A titleholder to an exploitation concession must apply to annul or cancel any subsequent exploitation concessions which overlap the area covered by its exploitation concession within the 4-year term from the date upon which the judicial awarding of such exploitation concession is published in the Mining Gazette. If the holder of the earliest exploitation concession fails to annul the later exploitation concession, then the judicial decision that declares the statute of limitations to have elapsed will also extinguish the earliest mining concession in the overlapped surface. The preferential right over the areas covered by mining concessions is determined by the chronological order of the mining concessions judicial request. Therefore, the first mining concessionaire to request a mining concession over a certain area shall have the preferential right to explore or exploit such area once its mining concession is dully constituted. If that mining concessionaire fails to duly constitute its mining concession (due to not meeting deadlines or fulfilling requirements), then the preferential right shall pass to the mining concessionaire that has presented its judicial request right after the one who failed to constitute.

Rights over exploration and exploitation mining concessions in process of being granted may be transferred and disposed of once the judicial request has been duly registered in the corresponding Mining Registrar.

4.3 Surface Rights

MCAL currently has a provisional easement in respect of the surface rights over the concessions that provide for the Marimaca Project and elements of the wider Marimaca District. This provisional easement is registered in the name of MCAL, before the corresponding Real Estate Registrar. A definitive easement for the final development area of the Marimaca Project will be registered in due course.

4.4 Water Rights

The Company does not hold any water rights or maritime concessions. However, MCAL entered into a water option agreement in October 2022 to secure the future water supply required for the Marimaca Project. Under the agreement, one of Chile's largest energy suppliers will supply seawater following its use in cooling systems at an electricity plant in Mejillones. The option has a term of 5 years, with the ability to extend for 2 years. The option period will allow the Company to advance final project permitting and technical studies, including water pipeline studies that are already underway. The exercise of the option will trigger the execution of a water supply agreement priced on a take-or-pay basis for the Marimaca Project's life of mine. The principal terms of the water supply agreement have been negotiated and agreed in the option documentation.

4.5 Environmental Liabilities and Permits

MCAL first obtained an Environmental Qualification Resolution (RCA) in July 2018 to be able to produce 10,000 tons of cathodes annually from the Marimaca 1-23 claims. Whilst this RCA still exists, it does not provide for the Marimaca Project as envisaged in the 2020 PEA.

A further RCA was obtained in November 2020 to provide for exploration and prospecting campaigns across the Marimaca Project and parts of the wider Marimaca District.

Currently, the Company is in the process of conducting environmental baseline studies to assess possible impacts that the Marimaca Project may have when it enters the Environmental Assessment System for purposes of obtaining an RCA for development. These studies do not currently identify any major environmental risks. In addition, there are no known material environmental liabilities in relation to the Marimaca Project.

There are no other significant factors and risks that may affect access, title, the right or ability to perform work on the Marimaca Project.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES AND INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The Project is connected to the well-maintained Chilean public road system (Figure 5-1) and is easily accessed from Mejillones (25km west) and Antofagasta (45km south) through paved highway Route 1. The Antofagasta Airport is located 40km south of the Project. The project can be accessed following the paved roads derived from Route 1. A network of unpaved roads connects the project area to Mantos Blancos and to the National Highway 5. Figure 5-1 shows the main access roads connecting Marimaca Project with the main neighboring cities and mining operations.

Figure 5-1: Accessibility to Marimaca Project, Marimaca Copper Corp., 2023

5.2 Local Resources and Infrastructure

Antofagasta and Mejillones are modern cities with all regular services, serving a combined population of approximately 570,000. Numerous mining-related businesses are located in the cities. Power lines and water supply intakes are located near the property. Both Antofagasta and Mejillones are relevant shipping ports, especially Mejillones, which is a mega-port for larger cargo. In addition, there are five thermoelectric plants in Mejillones and the port represents the most important sulfuric acid terminal in the north of the country. The installed capacity of electric production currently available at Mejillones is close to 900 MW, while the sulphuric acid storage facilities import more than 6 million tons per year.

While Mejillones is an industrial port and most of the labor force is specialized in this type of job, Antofagasta has the largest labor force dedicated to mining in northern Chile. The level of specialized mining knowledge is high and they participate both in the work of large and medium scale mining. The city of Antofagasta is a "mining cluster", where research, education, technical training centers and the largest suppliers of equipment and services for mining in the country operate.

5.3 Climate

The Project is located approximately 39km north of the Tropic of Capricorn. The minimum temperatures vary between 10 and 15°C, and the maximum temperatures are between 20 and 29°C, while the average relative humidity oscillates between 67 and 70%. The climate is extremely dry, and the average annual rainfall is 2-3 mm as an annual average of 24 hours.

In the region, rainfall is very rare and decade's events of rain, which can reach up to 12 to 30mm over 24 hours, can occur. In the Project area, however, they have no major impact because they do not have high slope drainage from the coastal cliff, a feature that develops both to the south and north of the Mejillones Peninsula (see Figure 5-2).

Towards the east, the central depression zone extends, and it is characterized by vast areas of low slope, the so called "pampas", where the weather conditions are extremely arid and with notable variations in temperature between day and night. These, in general, vary between 28ºC (day) and 2°C (night) or less depending on altitude.

5.4 Physiography

The Marimaca Project is in the Cordillera de la Costa (Coastal Cordillera), a relevant physiographic unit in the Northern Territory of Chile. Although this cordillera characteristically displays a western border consisting of 0 to 700 m in the high cliff, in the Mejillones area the regularity is interrupted by the Mejillones Peninsula (Figure 5-2), and the Cordillera looks dissected by a series of valleys, most of them controlled by regional faults. Relief altitude varies between 0 and 1,000 m. Towards the east, the Cordillera grades to the Central Depression, and the landscape consist of flat lands or "pampas".

Vegetation is minimal outside of inhabited valleys where irrigation and the “Camanchaca”, sea mist that comes from the nearby ocean, support very scarce to null vegetation that can withstand the desert environment.

Figure 5-2: Project location, showing relevant physiographic elements (vertical 3x). View toward NE. (CCF coastal cliff; MP: Mejillones Peninsula), Marimaca Copper Corp., 2022

6 HISTORY

The Marimaca Project is in an old mining district known as “Mineral de Naguayán” or “Distrito Minero Naguayan”. Modern small-scale artisanal mining activities were undertaken in the general Project area from the 1990s to mid-2000s. Underground workings associated with small-scale mining reach a maximum of approximately 100m depth.

No modern exploration was undertaken before Coro Mining Corp (Coro), a predecessor company to Marimaca Copper, began to assemble the Project ground holdings. The Marimaca deposit was identified in 2016, following a reverse circulation (RC) drill program.

Coro subsequently detailed geological surface mapping and rock chip sampling, additional RC drilling, core drilling to support geotechnical and geometallurgical studies, metallurgical testwork, and mining studies. An initial resource estimate was completed in January 2017, and Mineral Reserves were first estimated in 2018.

Coro completed a feasibility study in June 2018 (the 2018 Feasibility Study). This study considered an open pit mining using conventional equipment to feed a refurbished process plant, referred to as the Ivan plant, which would have the capability of producing 10,000t of cathode copper per year.

The 2018 Feasibility Study is not currently considered to be the preferred Project development option. Marimaca Copper is not treating the study as current, and the Mineral Reserve estimates are also not considered to be current. However, some of the baseline information generated in support of the 2018 Feasibility Study was used in the 2020 PEA. An Environmental Impact Statement (Declaración de Impacto Ambiental, DIA in the Spanish acronym) and the Mining Safety Regulations and Environmental Qualification Resolution (RCA) was approved on 5 July 2018. Mineral Resources were updated in late 2019 (reported in the 2020 MRE), and again in 2022 – the results of which are discussed in this report. The 2022 MRE captures for a total of 110,790m drilled distributed across 429 drill holes. In most of the south-central area of the MOD, the drill grid is 50x50 m centers with holes oriented 310° and 220°. At the northern part, hole distance is at 100 m centers, chiefly oriented 310º azimuth. This MRE captures drilling from the 2021 program and drilling completed from February 2022 to August 2022, representing an additional 28,374m to the previous 110,790m accounted for the 2022 MRE (NI 43-101 released in 2022 titled "Updated Mineral Resource Estimation for the Marimaca Copper Project, , Antofagasta Region, Chile)

Coro changed its name to Marimaca Corp. in May 2020.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Introduction

The region consists mostly of Jurassic volcanic and intrusive rocks, and minor exposures of older Triassic acid volcanic and Paleozoic rocks. The main structural system is the Atacama Faults System (AFZS), active since the Jurassic. These NS to NE oriented faults formed the fabric of the Coastal Cordillera and especially control its eastern border. Figure 7-1, (taken from Ramirez, 2007) summarizes the main geological units for the area.

The metallogeny along the Coastal Cordillera is dominated by the occurrence of Cu-Ag “manto-type” and IOGC type deposits. The classic “manto - type” deposits (Buena Esperanza, Michilla, Mantos de La Luna and Ivan) are hosted by andesitic volcanic rocks. Mantos Blancos is a particular type of “manto - type” deposit, much larger in Cu content and hosted by bimodal acid and intermediate La Negra volcanic rock units. A few deposits are veins hosted in intrusive displaying IOCG affinity (Espinoza et al, 1996; Kojima et al, 2009).

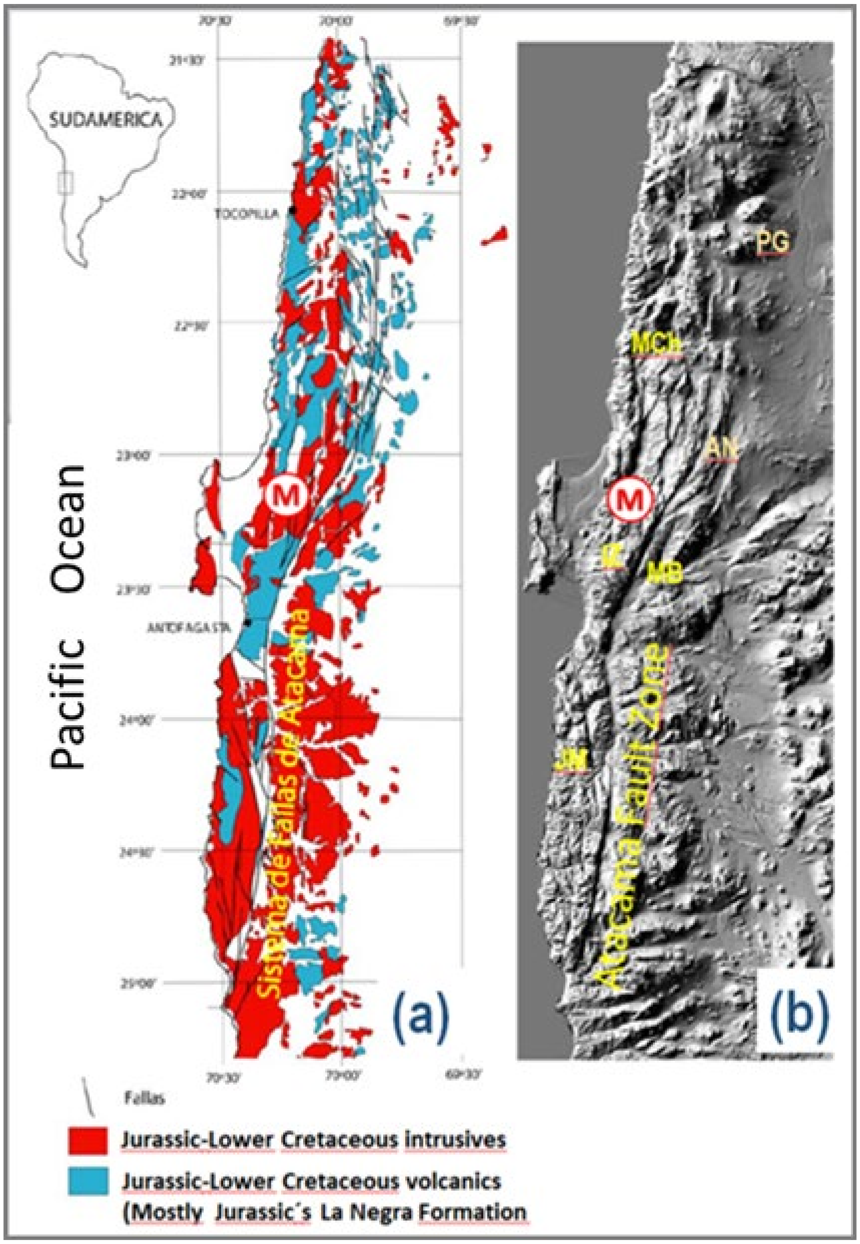


Figure 7-1: Regional Coastal Cordillera Geology (taken from Ramirez, 2007); a) corresponds to a summary of Jurassic intrusives and volcanics. b) corresponds to a DEM that highlights the Atacama Fault System and the main copper deposits (PG: Puntillas-Galenosa; MCh: Michilla; AN: Antucoya; IZ: Ivan-Zar; MB: Mantos Blancos; JM: Julia-Montecristo). Letter M shows the location of Marimaca Project.

7.2 Regional Geology

The geological setting is largely based on the published Mejillones and Peninsula of Mejillones 1: 100,000 geology maps by SERNAGEOMIN (Cortes, et al, 2007, Figure 7-2). This is complemented by specific studies carried out in the Mejillones Peninsula (Lucassen et al., 2000, Herve et al., 2007, Casquet et al., 2014). Economic geology studies have been carried out by geology graduates of the Universidad Católica del Norte (Vergara, 1985; Veliz, 1994; Gonzales, 2002).

New information regarding the nature of La Negra formation and Jurassic intrusive events, especially age determinations and new interpretations about the tectonic and metallogenic evolution have been presented by Mpodozis et al, (2015) and by Mpodozis and Cornejo (2019).

The oldest exposed rocks are late Paleozoic and Triassic in age, consisting of metasediments and intermediate intrusions. Intrusive stocks from early Jurassic to lower Cretaceous characterize the area. These were dated at 155-154 Ma by Cortes et al (2007), but recently adjusted to the interval 174-169 Ma by Mpodozis et al (2015) and Mpodozis and Cornejo (2019). The younger intrusive of this unit hosts the mineralization at Marimaca. The La Negra Formation volcanic, a LIPS like volcanic bimodal event dated in the interval 180-170 Ma (Mpodozis et al., 2015, Lopez et al, 2017; Mpodozis and Cornejo, 2019) extends to south, north and east of the area (Figure 7-2).

A notable system of dyke assembly intrudes both the intrusive stocks and the volcanic. They are bimodal in composition, from gabbro to rhyodacite composition and extend for tens of kilometers (Cortes et al, 2007). As per previous (Scheuber and Gonzales, 1999; Cortes et al. 2007) and recent dating data (Mpodozis et al, 2015; Mpodozis and Cornejo, 2019), the age range for this dyke swarm, mostly based in K-Ar methods, is in the 148-145 Ma interval, which is coincident with the main event of “Manto-Type” copper mineralization (Mpodozis and Cornejo, 2019).

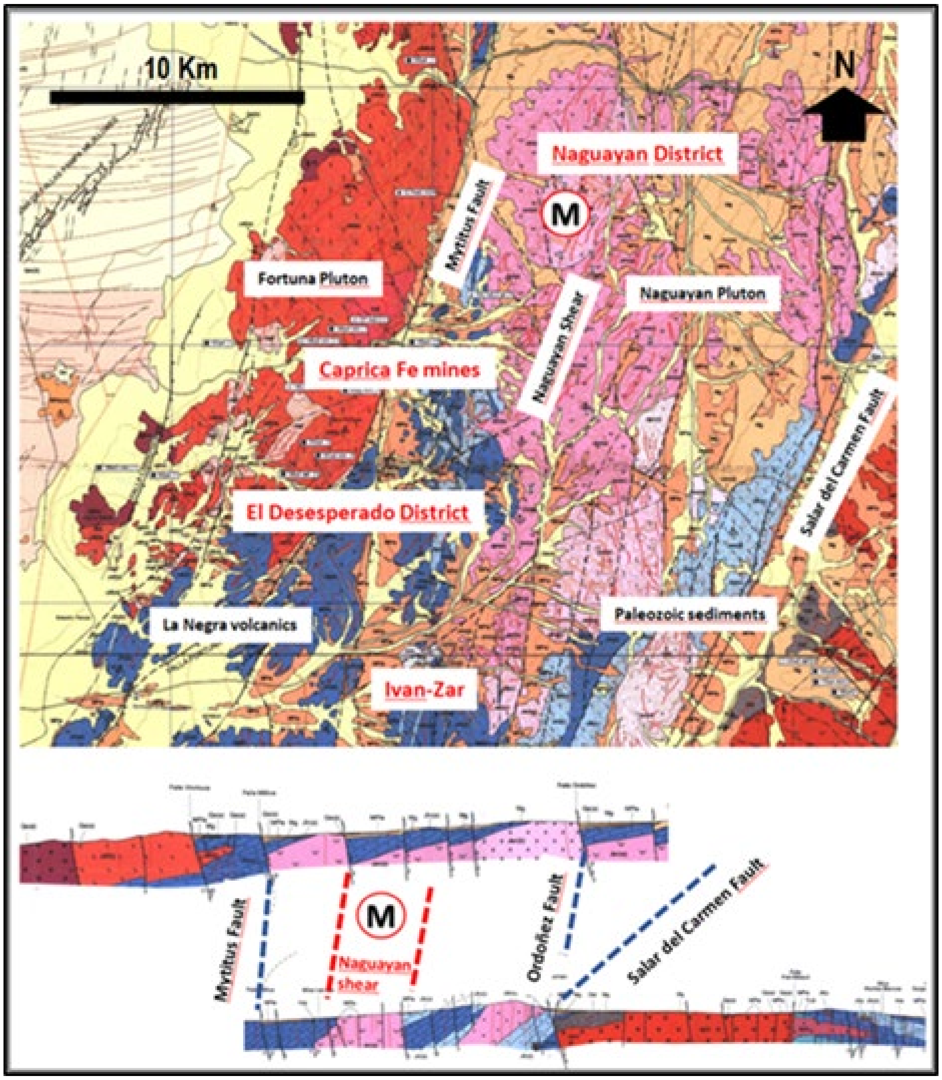


Figure 7-2: Marimaca Project Regional Geologic Setting (taken from Cortes, et al. 2007)

The Tertiary units correspond to marine sediments, which mark the paleo-coastal lines in the Mejillones Peninsula. Part of valleys and pampas towards the east are filled by gravels with intercalations of ash deposits dated 10-12 Ma (Cortes, et al, 2007).

The metallogenic setting the area consists of "manto-type" copper deposits hosted by La Negra Formation volcanics, as well as some IOCG-affiliated vein districts, hosted by Jurassic intrusive (Espinoza et al., 1997; Maksaev and Zentilli, 2002, Sillitoe and Perello, 2005). Towards the eastern border there are some porphyry-type copper systems of late Jurassic to lower Cretaceous age (Figure 7-3) as Antucoya. The recent discovery of Cachorro copper deposit (Arriagada, 2021), described as like Mantos Blancos style mineralization is re-opening the ground for exploration of larger manto-type copper deposits in the region.

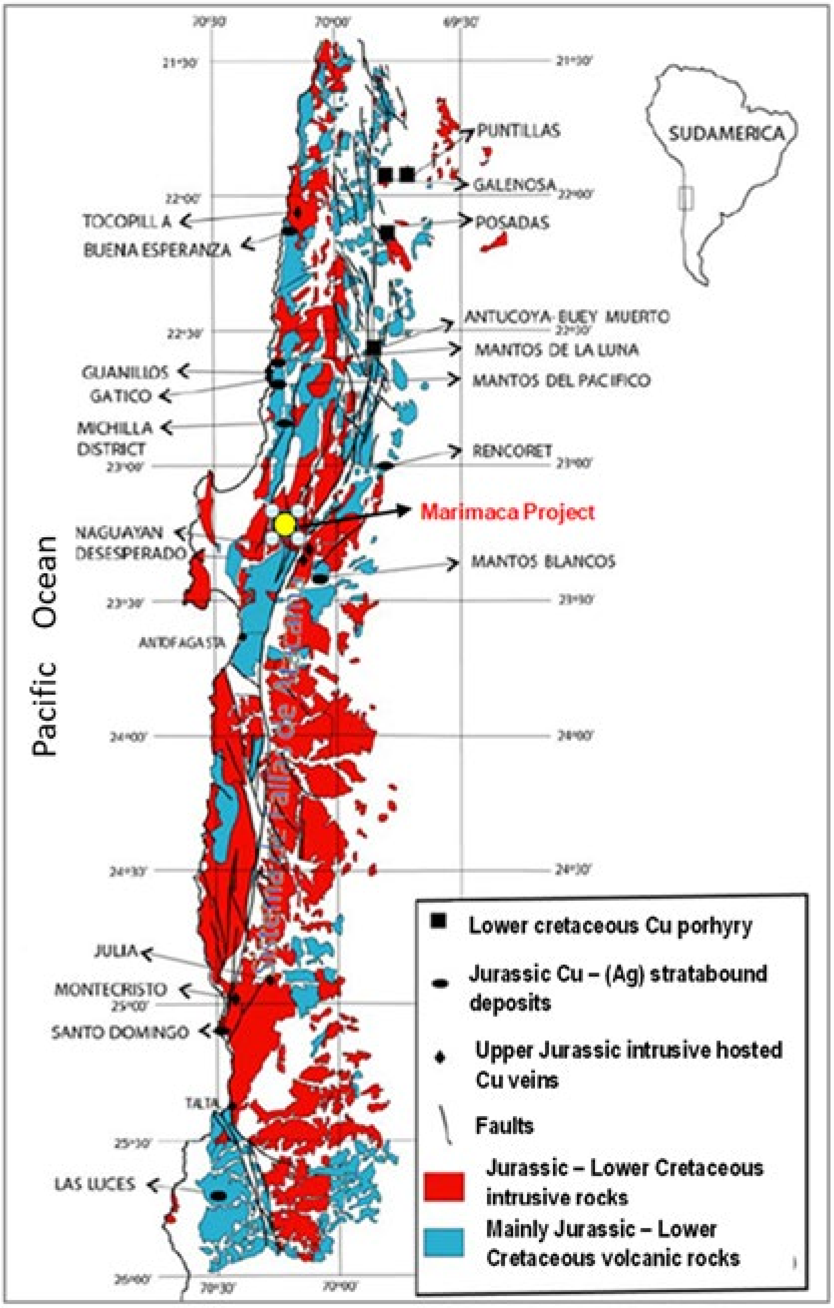


Figure 7-3: Coastal Cordillera main Copper Deposits Location (taken from Ramirez, 2007)

The “manto-type” copper deposits typically correspond to sulfides and copper oxides hosted by volcanic rocks, especially by the brecciated and vesicular upper portions of lava flows but also by crosscutting veins and breccia bodies. Rock alteration, usually albitization and K-feldespar replacement is weak and difficult to distinguish from diagenetic alteration (Sato, 1984).

IOCG veins districts are hosted by Jurassic intrusive (Gatico, Naguayán, Montecristo; Espinoza et al, 1997, (Figures 7-1 and 7-2). Marimaca, located at the old Naguayán District is an anomaly in the context of this type of IOCG mineralization occurrences, due to their special structural and supergene mineralization features.

A key aspect of regional metallogenesis is the post-Jurassic geomorphological and climatic evolution that allowed the generation of deep columns of supergene enrichment and oxidation. In Michilla the oxidized and mixed minerals extend up to 200 m depth, the same as Mantos Blancos. At Marimaca deepest oxidation evidence reaches locally more than 400 m.

7.3 Local Geology

The dominant rock types are intrusives from the “Naguayán Plutonic Complex” defined by Cortes et al. (2007). In Marimaca, the country rock is an equigranular to porphyritic monzodiorite intruded by a Dyke Swarm System consisting of various bimodal dyke episodes ranging in composition from gabbro to rhyodacite oriented NS to NE, NW and WNW and dipping 45-50° to 60-75° towards east and south-east.

The main Naguayán’ structural fabric, consists of a NS to NNE oriented sheeted-like fractures zone, including faults and dykes, controls the mineralization at Marimaca and can be observed for kilometers beyond the project area limits. A general view of the project setting is shown in the photograph of Figure 7-4 where the “stratified” appearance of the parallel fractured intrusive and the ensemble of dyke swarm can be noted.

Figure 7-4: Marimaca Project Geologic Setting. Panoramic view from Marimaca area towards south, showing Monzodiorite Stock and Dyke (darker bands) Swarms outcrops (looking ESE). Note also, the north-south trending dipping east “stratified” fabric, as well as the clearer coloured bands characteristics of the “Hanging Wall Alteration” front. The Highest hill is Cerro Naguayán (1,578 m elevation) (Marimaca Copper Corp., 2018)

Background rock alteration consists of Na-Ca metasomatism. The mineralization is related to albite-actinolite-chlorite-iron oxide alteration. The NS to NE parallel fracture and related veins control chalcopyrite-magnetite-rich primary mineralization.

Intense, extensive and pervasive events of supergene oxidation have produced the actual copper oxide blanket that forms the mineral deposit at Marimaca. The surface data show that the copper oxides are controlled by a very strongly fractured host rock creating a high permeability background generated by the superposition of several events of fracturing and dikes intrusions. The oxidation resulted from the alteration of a previous secondary sulfide enriched blanket that produces zonation from brochantite-atacamite at cores immediately surrounding the secondary sulfides remnant patches and successive external haloes of predominant chrysocolla and further external wad.

As compared with other deposits of the belt, Marimaca is fully hosted by intrusive, rock units that become extremely permeable thanks to intense fracturing. Thus, the mineralization style is very different from the neighboring typical volcanic-hosted Manto-type copper deposits. At the same time, although the nature of primary mineralization is IOCG, the development of a consistent secondary blanket, makes a difference when compared with the typical IOCG from the Coastal Cordillera (Espinoza et al, 1996; Kojima et al, 2009).

Rock & structure interpretation framework has been updated for the purposes of this MRE 2023 exercise. The geologic surface map has been detailed and updated, emphasizing dyke systems and related structure definition. Subsequently, the lithologic & structural sets of sections were also updated as well as the 3D litho & structure model. A comprehensive sequence of intrusive and structural episodes was established, providing the project with a more robust geologic background sustaining the mineralization model and MRE calculations.

Perhaps litho & structural model update, no other material changes have been registered for the definition of mineral zones and rock alteration. Nevertheless, because of the results from detailed infill drilling, the mineral zone interpretation was updated both on sections and 3D model. No substantial changes were appreciated in the updated interpretation.

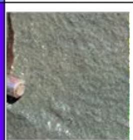
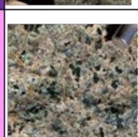
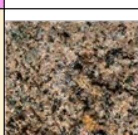
Lithology

Rock types mapped at surface are shown in the geologic map presented at Figure 7-5. 2D section interpretation of main lithologic unit as well as structures are shown on Figure 7-6 (a), complemented with mineral zone distribution for same section to observe the lithological-structural controls of the mineralization (Figure 7-6 (b)). A detailed description of main rock types is provided in Table 7-1 and the interpreted sequence of dyke emplacement stages is presented in Figure 7-7.

Two main rock units has been mapped in the project area: the Naguayan Stock (NS), which is part of the previously described Naguayan Plutonic Complex (Cortes, et. Al., 2007), and the Dyke Swarm System (DSS). Units field distribution and emplacement stages can be revised at surface geology (Figure 7-5) and time scheme (Figure 7-7).

Pre dyke units from NS were mapped as Monzodiorite (MZD) and Monzodiorite Porphyry (PMD). Between them, contact relationships revealed certain evidence of gradational texture change. The MZD is the most common country rock (Figure 7-5, Table 7-1). Is recognized as a coarse to medium-grained. equigranular, quartz monzodiorite. The monzodiorite Porphyry (PMD) is similar in composition to the MZD but displays an evident porphyritic texture. It ground mass is characterized by interstitial quartz and K-Spar graphic textures. (Table 7-1).

Table 7-1: Marimaca Project: summary characteristics of the main rock type units (Marimaca Copper Corp., 2023)

EVENT	ROCK TYPE (CODE)	PHOTO	Mineralogy/Texture/Clasification	Contact-Age Relationships/ Surface Distribution	Age Relationships/Regional Equivalent Unit
STAGE IV. NW Dykes	NW MICRODIORITE (MDINW)		Fine grained microdiorite, bearing plagioclase and amphibole. Some "gabroic" variation has been described showing clinopiroxene and olivine. Commonly altered to chlorite and epidote.	Late dyke event intruding all previous units. Distributed along main WNW to EW oriented structural system corridors. Controls copper oxide distribution and main structural domains.	Dyke units of different composition described by Vergara (1985) and by Cortes, et. al. (2015). Described as "Dyke Swarms" and linked to mineralization by Mpodozis, et. al. (2015)
STAGE III. Late NS Dykes	DACITE DYKE (PDT)		Porphyritic dacite to daciandesite, containing plagioclase, hornblende as "needles" and relicts pyroxene phenocrysts. Ground mass contains K-Spar and chlorite.	NS trending eastward dipping dykes, intruding all previous units. Intruded by NW late dykes systems. Has been observed towards the central part of Marimaca	Same as previous
	NS MICRODIORITE (MDINS)		Intergranular, fine to medium grained diorite to quartz diorite, composed of plagioclase and pyroxene strongly altered to chlorite, with abundant disseminated magnetite	NS trending dykes intruding DIO, PDI, MDI and OCO units. Intruded by NW trending dykes. Structural orientation is NS dipping 45-50 towards east.	Same as previous
STAGE II. NE Dykes	NE MICRODIORITE (MDINE)		Microgranular to weakly porphyritic diorite, scarce plagioclase and pyroxene phenocrysts and a fine amphibole, chlorite, magnetite matrix.	Intrudes OCO and PDI and is cross cut by late NS to NW dykes Roughly parallel at the north side of the PDI NE dyke system. Distributed at the extreme NW of the area	Same as previous
	OCOITE (OCO)		Coarse porphyritic diorite. "Ocoite" is the common name given in Chile to this type of rock, characterized by + 5mm fresh plagioclase phenocrysts in a pyroxene and magnetite ground mass.	Post PDI but sometimes shows gradational contacts with PDI. Ocoite dykes are NE to NNE oriented, sub-parallel to MDINE and PDI dyke systems.	Same as previous
	DIORITE PORPHYRY (PDI)		Porphyritic fine grained ground mass bearing diorite. Mineralogy includes chiefly plagioclase and pyroxene phenocrysts; same with the groundmass, that also contains olivine relicts.	Intrudes NS dyke system and is clearly intruded by the late NS and NW dykes. This unit of dykes has been observed towards the NW, where a main single dyke extends for more than 1.5 km.	Same as previous
STAGE I. Early NS-NNE Dyke and Intrusions	DACITIC PORPHYRY (PDA)		Fine grained porphyritic dacite, containing plagioclase and scarce pyroxene phenocrysts. Ground mass contains K-Spar. Common amigdules filled by quartz, chlorite and sericite.	PDA dykes looks cross cut by NE and NW units of Stages II through IV. Occurs as NS oriented dipping eastward trends at the central part of the area. It can be traced for kms along the strike.	Same as previous
	DIORITE DYKE (DDI)		Porphyryitc to glomeroporphyric textured diorite to quartz monzodiorite rock. Characterized by the occurrence of pyroxene, hornblende and biotite, displaying alteration to a mixture of biotite and chlorite. Intergranular K-Spar, quartz, magnetite and sulphides is commn in the groundnd mass.	Intrudes DIO and is clearly intruded by the main dyke systems. Discrete occurences of NS trending dykes has been observed towards the central part of Marimaca and are related to the sulphide mineralization.	Same as previous
	DIORITE STOCK (DIO)		Inequigranular, medium to coarse grained quartz diorite, bearing pyroxenes partially replaced by amphibole. Pervasive to moderate secondary biotite alteration and fine chalcopyrite and pyrite dissemination.	Observed in isolated outcrops and mostly in drill holes, intruding MZD and intruded by the main NS to NW dyke system. Occurs as small stocks partially aligned NS in the central south part of Marimaca.	This is the early unit of NS dykes stage and is related to the hypogene mineralization
Naguayan Plutonic Complex	MONZODIORITE PORPHYRY (PMD)		Porphyryitc monzogranite to quartz monzodiorite, containing lesser pyroxene, hornblende and a quartz-orthoclase rich matrix. Commonly pyroxenes are altered to amphibole and chlorite. Ground mass is characterized by interstitial graphyc textured quartz and K-Spar with chlorite and titanite.	Shows gradational contacts with MZD. It is intruded by all the younger set of dykes and similar intrusions. The PMD unit occurs mostly towards central and south part like NS elongated small stocks.	Recognized by Vergara (1985) as part of his UCENA unit and by Cortes et. Al. (2015) as part of the "Naguayan Plutonic Complex"
	MONZODIORITE (MZD)		Equigranular, medium to coarse grained pyroxene, hornblende and biotite bearing Quartz Monzodiorite - monzonite. Interstitial K-Sp and quartz.	Is the oldest rock unit. This unit is cross cut by all the dyke swarm system. Most common country rock in the project area.	U-Pb dating in the 169-173 Ma range. Defined as "Unidad Oriental Cerro Naguayan (UCENA)" by Vergara (1985) and as "Naguayan Plutonic Complex" by Cortes et. Al. (2015). Also recognized as "Naguayan Stock" by Mpodozis et. al (2015) and Mpodozis and Cornejo (2019)

The dyke units are part of the major Dyke Swarm System (DSS) that characterizes the area. Individual dykes average 1 to 2 m in width. As an exception, some PDI and PDA bodies reach widths of 10 to 20 m. Along strike, dykes often extend for many hundreds of meters or even kilometers. They vary in composition from rhyodacite to gabbro; and occur as sets oriented NE, NS andNW to EW. Most are dipping east parallel to the main ground fracture system oriented NS to NE dipping 45-60 east, but the NW to WE oriented are vertical. A notable change in dyke orientation characterized each emplacement Stage, at same time a change in dipping is noted, the oldest being less inclined (45-50° east) than the youngest (60-70° east).

Most of dykes are Diorite in composition. Those related to mineralization are Quartz Diorites. Stages I and III are finished by the intrusions of late, post-mineral, Dacite to Daciandesite dykes. Textures vary from fine equigranular to coarse porphyrytic. Mineralogy of phenocryst phase in most of cases are pyroxene, plagioclase and amphibole. Ground mass of more basic rocks is fine grain mixture of pyroxene, plagioclase and magnetite, perhaps in the more acidic dacites the groundmass is K-Spar and quartz rich. Fine grained equigranular rocks carries plagioclase and pyroxene. In more basic lithologies as MDINW and PDI olivine has been observed.

Following is a summarized description of different types of dykes ordered as a time sequence of successive intrusion events (Table 7-1 and Figure 7-7):

- **Stage I: Early NS-NNE Dyke and Intrusions**. Consists of three main rock types: the oldest is a medium to fine grained Quartz Diorite (DIO), characterized by pervasive biotite alteration and fine chalcopyrite and lesser pyrite dissemination. Outcrops of DIO are distributed mostly at the south-central part of the area, intruded by dykes of porphyritic Quartz Diorite (DDI), that displaying a K-Spar, quartz, magnetite and fine sulphide rich groundmass (see Figure 7-5). DIO dykes are commonly related to the distribution of small stocks of DIO. The Dacitic Porphyry (PDA) intrudes previously described rock units, sub-volcanic like textures such as devitrification and common occurrences of amygdales are characteristics of the PDA. Previous interpretations lead to the PDA a direct relationship with mineralization, but it is only a spatial coincidence, because was emplaced later along same structures as the DIO and DDI. This unit is distributed along a NS corridor through the central part of the area (Figure 7-5). Stage I dykes and intrusions are related to the higher-grade Cu mineralization areas.

- **Stage II: NE Dykes**. Characterized by three main rock types: oldest is a fine-grained porphyritic Diorite (PDI), containing olivine relicts. Dykes of PDI are NNE eastward dipping oriented and most prominent dykes of this unit occurs at the NW part of the area (Figure 7-5). PDI are intruded by NE to NNE trending dykes of coarse porhyritc Diorite (OCO) displaying a characteristic texture named “Ocoite” in Chile (details in Table 7-1). OCO dykes are common at the E and W parts of the area (Figure 7-5). Late dykes from this Stage are NE oriented fine grained Microdiorite (MDINE), a microgranular to weakly porphyritic textured rock, commonly distributed towards the NW part of the area (Figure 7-5). The Stage II NE Dykes controls the western extension of the oxide blanket as observed at surface and sections (Figures 7-6 (b) and 7-10).

- **Stage III Late NS Dykes**. Includes fine grained, intergranular, disseminated magnetite bearing Diorite to Quartz Diorite (MDINS) dykes, oriented NS and distributed along the E and W parts, but there is a set of same type of rocks that occurs like NE trending dykes at the south-central part of the area (Figure 7-5). Late intrusions of this Stage are porphyryitc Dacite to Daciandesite (PDT), characterized by "needles" of amphibole. PDT dykes are NS oriented and occurring at the central part of the area (Table 7-1 and Figure 7-5).

- **Stage IV NW Dykes**. Consist in a series of NW to WNW oriented dykes (Figures 7-5, 7-6 (a) and Table 7-1), related to a system of faults that displaces the oxide blanket. Rocks are fine grained microdiorite, perhaps some "gabbroic" composition has been described due to the occurrence of clinopyroxene and olivine in some samples. This set of late dykes related NW trending structures, partially controls the distribution of high Cu grades in the oxide blanket.

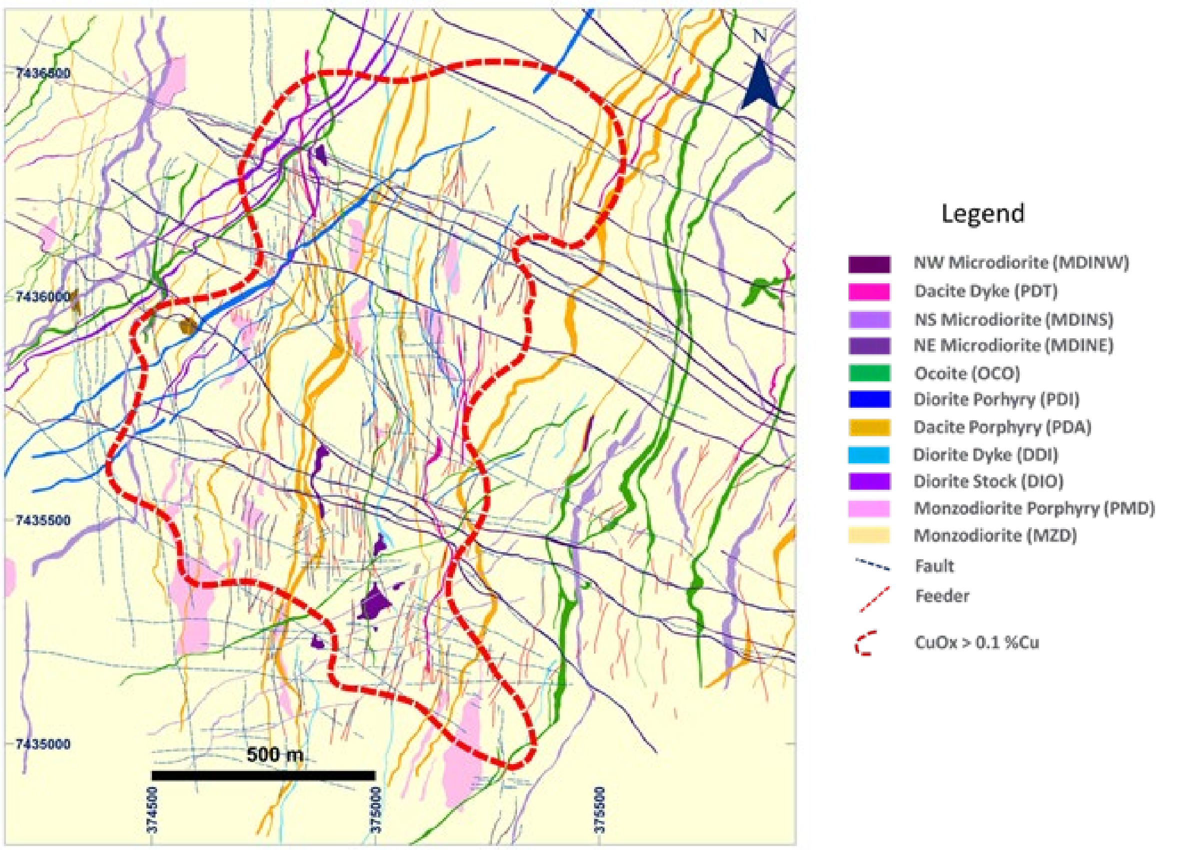


Figure 7-5: Marimaca Project Detailed Sub-Surface Interpreted Geology (Kovacic, 2017; IMG, 2019)

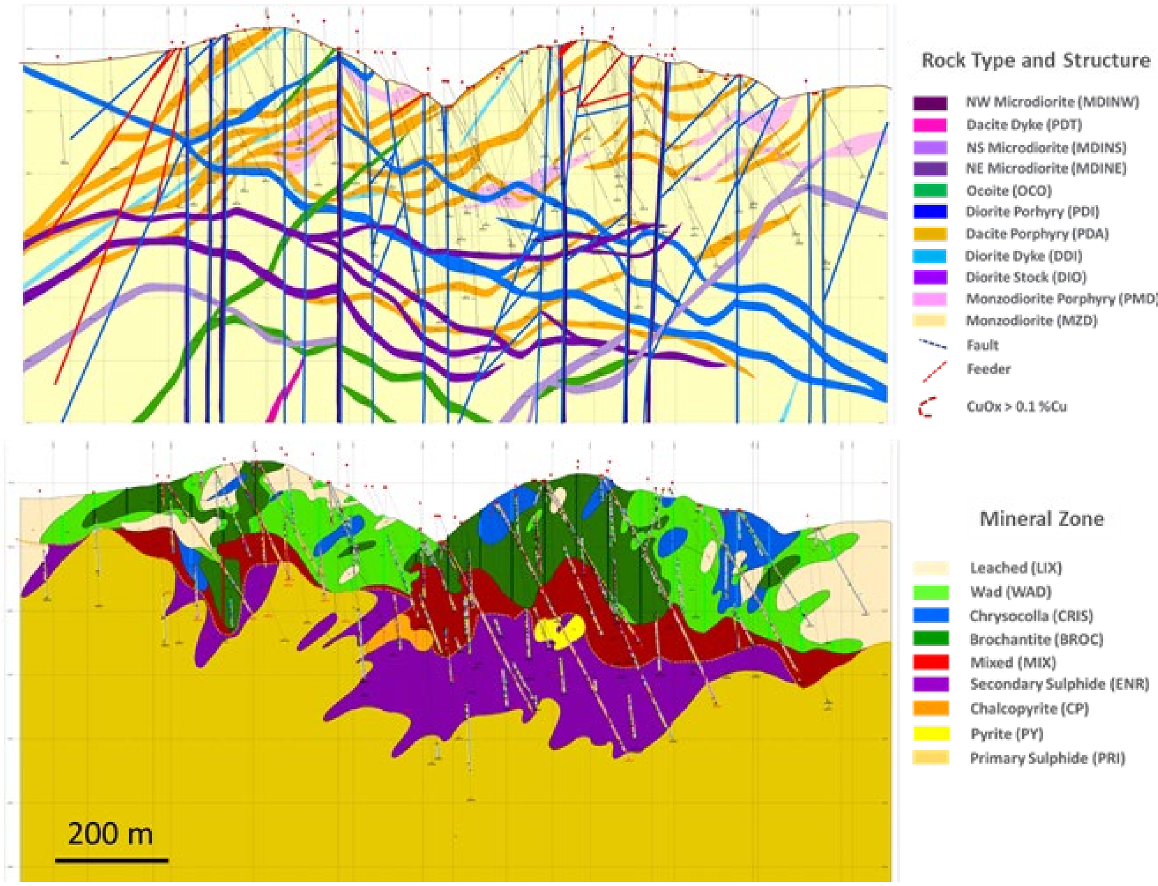


Figure 7-6: Marimaca Project, Illustrative Litho-Structure (a) and Updated Mineralization Section NE100 (b). Sections are 220°south-east (Marimaca Copper Corp., 2023)

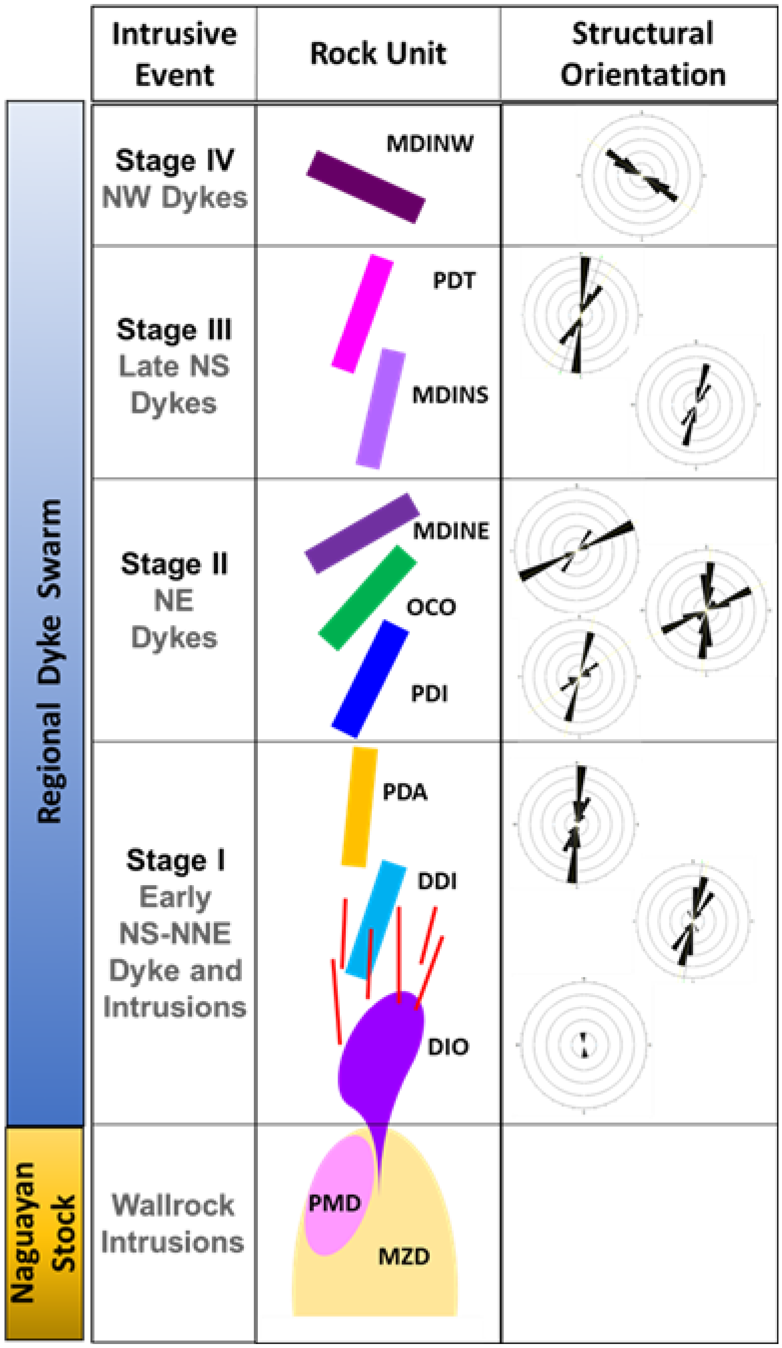


Figure 7-7: Marimaca Project. Summary of main rock type units emplacement Stages (Marimaca Copper Corp., 2023)

The lithological arrangement of Marimaca is complex and reveals several superimposed structural, magmatic and mineralization-alteration events (Figure 7-7). Shortly after the cooling of the monzodiorite stock, regionally related to the initiation of a major extensional tectonic event (Scheuber and Gonzales, 1999; Mpodozis and Cornejo, 2019) that allowed the formation of the parallel fracture-fault zone, the Stage I of dykes and intrusions was emplacedproducing the main IOCG mineralization event. Change in tectonic and magmatic regime explains the successive stages of diking changing in composition and structural orientation. Extensional controlled tilting and late events of faulting and dyke emplacement complete the complex litho-structural setting.

Although radiometric ages from Cortes et al. (2007) for the NPC are in the range of 140-150 Ma, recent more precise dating by Mpodozis et al. (2015) and Mpodozis, and Cornejo (2019) are in the range of 174-169 Ma. According to Lopez et al (2019), part of these ages is coincident with the older ages from the base of La Negra Formation. Age of diking in the region is in the range of 148 to 145 Ma, which is compared with the age of mineralization at the main copper deposits in the region such as Mantos Blancos and Michilla (Mpodozis and Cornejo, 2019), but at Marimaca field evidences (Figure 7-7) reveals that the main IOCG event of mineralization is older and intimately related to the late stage of cooling of the Naguayán Plutonic Complex (Mpodozis and Cornejo, 2019)

For the purposes of more robust support the mineralization interpretation and create a 3D rock-structure model, the previous litho-structural 2019 model was updated. Methodology consisted of update surface map a 1:1,000 scale, establish a revised, comprehensive sequence of dyke emplacement events and interpret a detailed litho-structural framework regular set of NW and NE vertical sections, getting a consistent correlation from surface to drill hole data. Sections were digitized and a 3D model was built by means of Leapfrog^{TM} by Atticus Geo. (Figure 7-8). Using the 3D model elements Figure 7-9 illustrates the evolution of the different dyke Stages (Figure 7-7), although not restored considering the block tilting due to the extensional tectonic regime for most of the NS and RDS emplacement.

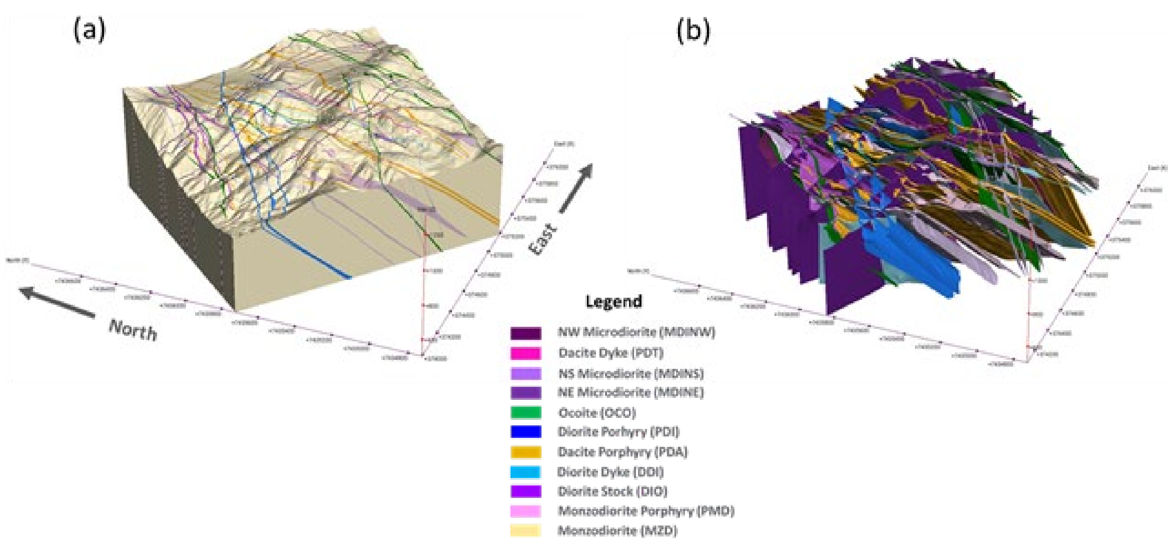


Figure 7-8: Marimaca Project: 2020 MRE 3D. Lithologic model (from Leapfrog TM 3D Model produced by Atticus Geo, 2023)

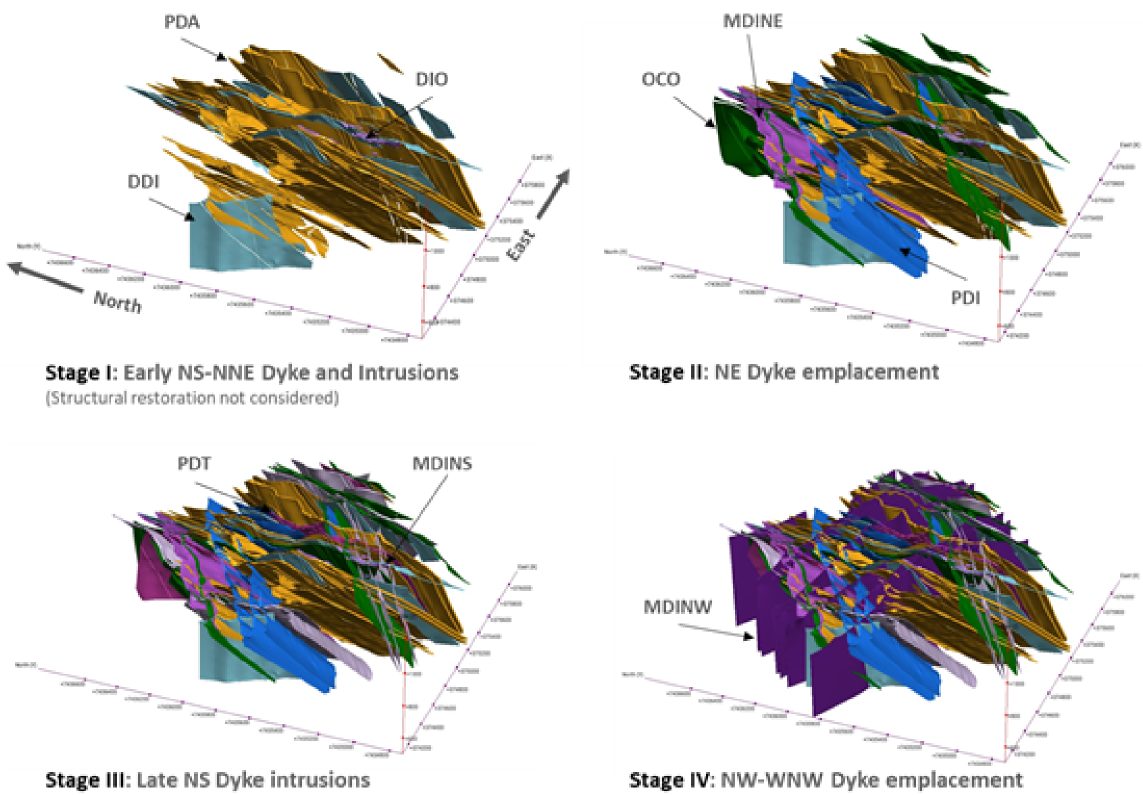


Figure 7-9: Marimaca Project: MRE 2023 3D Lithologic model illustrating the successive stages of dinking (from Leapfrog TM 3D Model produced by Atticus Geo, 2023)

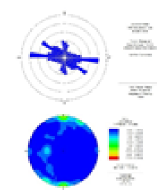
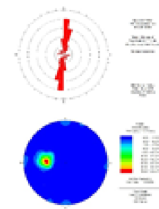
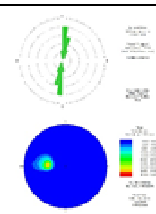
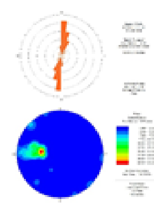
Structure

Structure plays a key role in the control of secondary mineralization at Marimaca. Although previously described, dykes are *per se* first order structural features that controls the mineralization, has been decided to consider this units like rock types, rather than typical planar like structures. It must be recognized that dykes sealed different episodes of faulting and record the abrupt changes in stress conditions and orientations that affected the area once the NPC was cooled and uplifted. All details about different events of diking, including composition description, preferred orientations and relationship with mineralization has been described in 7.3.1 item of this report and not be repeated here.

The pervasive parallel fracturing that characterizes the structural wallrock background at Marimaca is the most relevant structural feature but is hard to represent in maps and sections. It has been decided not to represent them as a series of lines, leaving the idea that it is an intrinsic attribute of Marimaca's wallrock unit nature. Nevertheless, is described as a structural feature in this chapter and adequately cited throughout the text..

Main planar structures mapped and interpreted are faults, feeders, banding and veins. Surface occurrence and 2D interpretation of main structural features are shown in Figures 7-5, 7-6 (a) and main characteristics, mapping criteria and distribution are summarized in Table 7-2. More detailed descriptions, structural rosettes, and illustrative photographs can be revised in 2020 MRE and 2022 MRE reports (Oviedo and Palma, 2020 and 2022)

Table 7-2: Marimaca Project: summary of main structure characteristics (Marimaca Copper Corp., 2022)

STRUCTURE TYPE (CODE)	DESCRIPTION	MAPPING CRITERIA	DISTRIBUTION	STRUCTURAL ORIENTATION
FAULT (FAL)	Fault planes controlling contacts between rock types or alteration-mineralization zones. Evident from outcrops but also from geomorphological expressions such as ridges or creeks. Faults controlled most of the supergene copper mineralization.	Shear zones and broken fractures. Gouge and slickensides as main kinematic markers. Normally displaces dykes and are sealed by copper mineralization	There are some NS main faults but mineralized and are described as "Feeders". The most prominent faults are vertical and strike EW to NW-SEE. This structural system controls the supergene alteration and mineralization and divides the mineralized zone into discrete structural domains. Late micro diorite dykes (MDINW) are controlled by the late faulting. Also controls the geomorphology of some main creeks.	
FEEDER (FEE)	Copper mineralized faults. Widths of centimeters to meters. Clearly post parallel fracture development. Some shows vein aspect filled by iron oxides and partially brecciated. Some remnants of primary mineralization is preserved in some feeders.	1 to 5 meters wide mineralized fault-veins. Mineralization extends to the fracture borders. Part of the filling material looks brecciated, related to Fe-Cu mineralization.	Most of the old mining workings follow the high copper grade feeders. Oriented NS to NNE and dip 45 to 70° east. Are more common towards the Marimaca sector.	
BANDING (BAN)	The most pervasive and characteristic structural system of the area. Observed as sheet like fracturing, extending for kilometers and controls the distribution of primary as well as oxide mineralization.	Characterized by a pervasive and persistent sub-parallel sheeted-like fracturing. Fracture spacing is close to 3 to 7 fractures per meter. Oriented NS to NNE and dipping 45-50° east. Observed like a "pseudo stratification" of the intrusive host. Main NS trending dykes are roughly parallel to the banding.	Extensively distributed in the project area. Apparently more pervasive in the central mineralized area.	
VEINS (VTS)	1 to 3 meters wide structures, magnetite-hematite with or without copper mineralization. Tourmaline is common as well as gypsum, quartz and actinolite.	Easily recognized because of their massive aspect, with "gossan" like, goethite-hematite rich, expressions at surface. Some also consisted of sets of centimetric of parallel veinlets.	Commonly related to feeder like structures. Some magnetite rich veins are controlled by dyke contacts. Strikes NS to NNE and dips vertical to 60° east. Mapped for hundred of meters, observable in most of the old mining workings, especially underground at Atahualpa	

The sub-parallel, planar, penetrative and persistent structure system is the most conspicuous structural feature of Marimaca. It was described in previous reports as "banding" (BAN in Table 7-2). This rock structural fabric gives the rock an appearance of "pseudo-stratification", consisting of decametric, sub-parallel fractures that show different types of penetration, filling, spacing and persistence. Preferent orientation of the parallel fractures is 360° to 010-020° dipping 45-50° east. This type of fracturing provided important part of the structural permeability that controls the development of the oxide blanket.

Feeders structure details are summarized in Table 7-2. These structures are NS, NNE to NE subvertical oriented mineralized faults, bearing gouges and damage zones. Fault zone widths are in the range of a few centimeters to 10 m. Slickenside evidence of vertical and lateral movements. Strong supergene alteration, limonite staining, and fracture filling as well as copper oxide mineralization is a characteristic of this feeder-fault zone (Table 7-2).

Veins (Table 7-2) are 1-3 m wide iron and copper oxide rich structures. At the upper oxide mineralized zone, they are affected by strong supergene alteration. Gangue minerals such as tourmaline, quartz, actinolite, and gypsum are common. At surface, they can be easily recognized because the structurally aligned gossan outcrops. Some veins are dyke contact controlled, especially DDI and PDA type. Underground workings offer excellent examples of strongly oxidized veins. At non-supergene altered core samples veins usually display “pink” halos of K-Spar and/or hematite-stained albite.

There are NS, NE and NW trending faults (see description at Table 7-2), the same as dyke orientation (Figure 7-7), and probably at same age order. NS trending faults, feeders, and veins are related to the Stage I initial structural event, they are closely related to the earlier emplacement of DIO and PDA units and development of the parallel structure system. The Stage II, related to NE trending dykes are also related to faults oriented along same way.

The late NW trend of faults also displays relationships with dykes emplaced at the late Stage IV, and were considered post mineral, but recent 220° infill drilling demonstrates that an event of late chrysocolla rich oxidation was controlled by this fault system (Figure 7-16). On the other hand, prominent faults such as the Manolo Fault, display later events of pyrite-sericite alteration, meaning that the mineralization-alteration system remains active even up to the later events of faulting, and/or that part of the supergene alteration was already synchronous with heated late fluids circulation through the active NW faults.

The structures in combination with lithology, especially dykes, are key factors controlling the mineralization in the Marimaca deposit. The structural ensemble composed by the parallel fracture system, feeders and veins, linked to the main NS dyke system emplacement, controlled primary mineralization-alteration. There is evidence that this first stage of hypogene mineralization-alteration occurs at the main extension tectonics stage and continues during the process of block tilting.

New diking sealed a major structural adjustment from NS to NE and jump from NW and EW. This later structural event culminated with the uplifting process and related supergene alteration and hypogene sulfides oxidation. At this stage, the supergene process was favored by a pervasive permeability created by the combination of the NS diking-banded fracturing, and the various NS to NE faulting and the late NW to EW renewed diking and faulting. This step gives to the mineralization the actual geometry of a sub horizontal to eastward dipping secondary blanket. Post oxidation movements along NW-WNW faults has been observed such as the main Marimaca Fault that down dropped the southern block as will be described in the mineralization chapter of this report.

Alteration

The most relevant alteration related to oxide mineralization is supergene, consisting of limonites, and minor clays mixed with copper oxides. Goethite and minor hematite are common limonites staining fractures or fill open fractures. Fault gouge is commonly composed by limonites mixed with, gypsum and rock flour. Jarosite is less common except as halos of some NW faults zones such as Manolo in the southern part of the area and some veins located towards the east.

The Marimaca hypogene background alteration consists of calco-sodic metasomatism. This is characterized by the replacement of mafics by actinolite and magnetite and the plagioclase and orthoclase by albite. The DIO and DDI units display biotite-magnetite replacement related to fine copper sulfide dissemination.

Mineralization related alteration consist of earlier actinolite-magnetite, which is characteristic of veins, feeders and rock banding, such type of alteration is common at district scale, and it is related to white albite-chlorite replacement and vein halo development. Strong albite is also related to the brecciation textures observed as related to veins and feeders, in some cases is associated with sericite and chlorite and in others, with hematite. Tourmaline has been observed related to the main feeder veins at the Atahualpa and La Atómica zones.

Because no direct relationship of wall rock alteration with copper mineralization or another metallurgical parameter at the oxide zones has been encountered, no detailed descriptions or studies concerning alteration have been completed to date. Nevertheless, the presence, abundance and mode of occurrence of certain alteration minerals such as albite, K Feldespar, actinolite, biotite, etc. has been detailed recorded in drill sample logging.

Mineralization

The Marimaca deposit consists of a copper oxide (secondary or supergene) blanket, exposed at the surface that extends for approximately 1800 m along the NNW direction, 500 to 700 m wide and 200 to 350 m thick (Figures 7-10, 7-11 and Table 7-3). Two thirds of the middle-upper part of the oxidized column correspond to copper oxides whereas the lower one-third corresponds to mixed and lesser secondary sulphide mineralization. Although general geometry is a blanket, the mineral zone interpretation was guided by the structural control, emerging the main structural orientations, especially the NS dipping east and the late NW to EW structural system.

Table 7-3: Marimaca Project. Mineral Zone summary. (Marimaca Copper Corp. 2023)

MINERALIZATION ZONE (CODE)	PHOTO	MINERALOGY/Cu GRADE	TEXTURE AND OCURRENCE	ZONING
BROCHANTITE (BROC)		Mineral zone composed of more than 60% atacamite most of clino-atacamite variety and lesser brochantite. 30% to 35% corresponds to chrysocolla and wad. Minor amounts of cuprite, tenorite and Cu-limonites has been mapped representing less than 1% of total Cu minerals in the unit. Average Cu grade is 0.7%, analytical sulphuric acid solubilities are more than 75%, and the CNCu analytical solubilities are less than 3%.	Mainly occurs as veinlets, veins and fracture filling and staining where crystals are easily observable by eye. Disseminations are less common. Replacement relationships are atacamite by chrysocolla and remnants of chalcocite replaced by atacamite.	Atacamite derives from oxidation of chalcocite and covellite, inmediately surrounding the higher graded mixed zones in the central part of the oxide blanket and appear to be replaced by chrysocolla and outer halos of wad. This unit is deeper in the Marimaca sector but, because faulting and erosion, is exposed at surface towards north in the Atahualpa sector.
CHRYSOCOLLA (CRIS)		This mineral is composed of more than 60% chrysocholla, with 30-35% consisting of oxides such as atacamite and wad. Other minerals and species such of cuprite and tenorite have been observed totaling less than 2%. Average Cu grade is 0.4%, the analytical acid solubilities more than 70% and CNCu solubility of less than 3%.	Most common occurrence as fracture filling and staining. Fewer late veinlets. Common textures as atacamite replacement, but looks to be replaced by wad.	This unit is a product of alteration of the atacamite central zones and occurs as borders and in depht NW structures. Well preserved by topography in the Marimaca and southern most sector. Mostly eroded in the central Atahualpa and La Atómica sectors. Grades outwards to more wad rich zones.
WAD (WAD)		Composed mostly by a mineral substance identified by hand lens as Cu Wad and lesser Cu-limonites, which amounts to more than 80% of the Cu mineralogy. Green oxides and chrysocholla amounts to close to 20%, whereas other species such as tenorite represent less than 1%. Cu grades are in the 0.1 to 0.4% range, analytical acid solubilities 30-50%, and CNCu solubility less than 5%.	Main occurrence is as fracture staining. Commonly observed in fractures cross-cutting green oxides.	The most common unit towards the edges of the Cu oxide blanket. Part of it has been defined close to the high grade cores but this results from the abundance of tenorite like minerals rather than pure wad type species. This led to the definition of two Wad estimation domains based on their Cu grades.
MIXED (MIX)		Corresponds to the mineral zone composed of Cu oxides and secondary sulphides. Commonly contains green Cu Oxides such as atacamite and chrysocolla plus chalcocite. Other minerals included in this zone are "almagrados" (local name for a mix of cuprite-Cu limonites-chalcocite), chalcopyrite, covellite and tenorite. Average Cu grade is 0.6-0.7% and analytical acid solubility 40-60%, the CNCu solubility are in the 40-50% range.	Most common occurrence is as fracture filling and staining. Textures reveal replacement of chalcocite by atacamite and late fractures and cavities are filled by chrysocolla and atacamite.	Mixed zones are common in the transition between enriched sulphides and green oxides, very close to the oxide/sulphide interface. Patches of mixed zones have been defined occasionally in the green oxide zones. More common towards the central part of the Cu oxide blanket at Marimaca and Atahualpa, but less common at La Atómica.
ENRICHED SULPHIDES (ENR)		The enriched zone is defined by the content of secondary Cu sulphides, chiefly chalcocite and lesser covellite in a percentage of more than 50%. Remnants of chalcopyrite and pyrite are also mapped in this unit. Average Cu grade is the 0.6-0.7% range, and analytical solubilities of less than 15%, but CNCu solubilities are in the 45-75% range.	Massive to earthy occurrences of chalcocite and covellite defines this unit. Replacement textures bordering/staining pyrite mostly by chalcocite and chalcopyrite, by covellite, have been observed.	Controlled by main feeders and other faults. Its relationship with oxide suggest that a previous enriched blanket was developed and then oxidized in several stages to reach the current state. Most common at Marimaca and Atahualpa, lesser remnants at La Atomica. The term "enriched sulphide" is user the same as "secondary sulphide" or "chalcocite zone", meaning a mineralization zone defined by abundace of chalcocite that could replace either clacopyrite or pyrite
CHALCOPYRITE (CP)		This unit is composed of more than 50% chalcopyrite and pyrite, with a minor percentage occupied by secondary copper sulphides and traces of Cu oxides plus limonites. Average Cu grade is in the 0.7-0-9% range, solubilities less than 10% for acid and 15% for CNCu.	Chalcopyrite occurs as massive filling of veins and bands related to magnetite. Disseminations around veinlets or veins occurrences are common and more related to pyrite. Replacement textures by chalcocite and covellite have been observed.	Although a global zone of primary sulphides has been delineated beneath the oxides, insufficient drilling information exists for more detailed definition. Up to now the most frequent chalcopyrite intercepts have been obtained at the east sector. In particular, the MAD-22 drilling intercepts larger bodies of chalcopyrite whose extent is unknown.

Table 7-3 provides a detailed description of the defined copper mineral zones. Figure 7-10 shows the distribution of the mineralized zones at the surface in relation to the geology and structure. A typical cross section is also shown in Figure 7-6 (a) as compared with lithology-structure. (Figure 7-6 (b). Figure 7-10 shows the oxide blanket as controlled by the dykes and structure. Figure 7-11 is a view of Mineral Zone model looking NE, emphasizing the zonation and the outcropping nature of the blanket. Photos from Figure 7-12 illustrate the control of oxide mineralization by the parallel fracture of the ground monzodiorite.

It is necessary to clarify here that the term “Brochantite” mineral zone is already atacamite rich, with lesser brochantite. It was defined earlier in the project resulting from the dominant occurrence of bluish less greenish clinoatacamite that was confused with the copper sulphate. In the same way the term “enriched sulphide” is used the same as “secondary sulphide” or “chalcocite zone”, meaning a mineralization zone defined by the relative abundance of chalcocite and covellite that could replace chalcopyrite or coating pyrite.

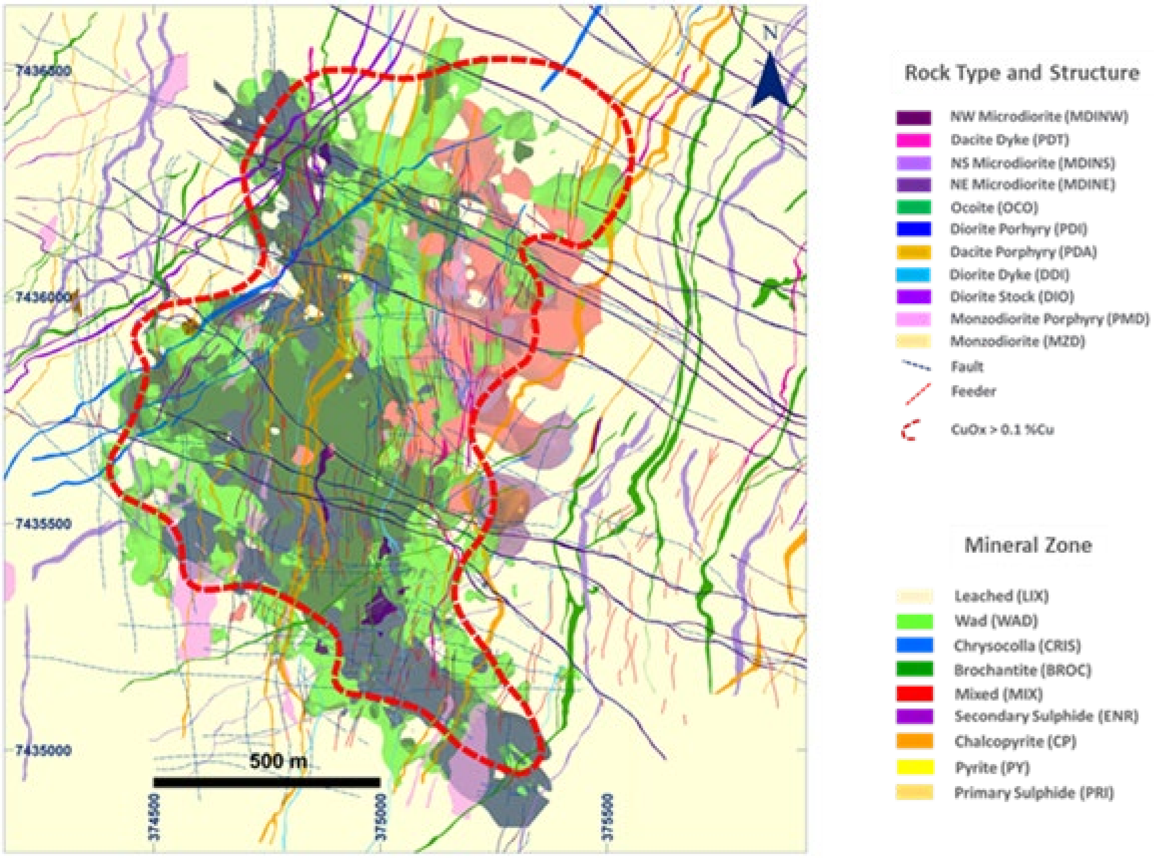


Figure 7-10: Marimaca Project. Sub-Surface Mineralization Map (Marimaca Copper Corp., 2023)

The secondary blanket displays vertical as well as lateral zoning: copper oxides dominate the upper part mostly atacamite, brochantite, chrysocolla and wad (Figures 7-6 (b), 7-10 and 7-11). Below oxides, there is an irregular zone of mixed oxide and sulphide mineralization; sulphides are mostly chalcocite, covellite, and remnants of chalcopyrite. The lower zone consists of secondary sulphides, chiefly chalcocite and covellite, the former occurring mostly as sooty chalcocite replacing or coating pyrite and chalcopyrite, whereas the latter occurs as replacing chalcopyrite. In some holes, remnants of primary sulphide mineralization were encountered massive veins of chalcopyrite-magnetite (Figure 7-11).

Bottom of secondary blanket has been interpreted as an NS to NNW oriented, westward dipping irregular rugged surface due to the strong structural control, resulting from the superposition of different type and orientation of structures. The limit between oxide and mixed-secondary sulphides looks smoother, but the bottom of secondary sulphide is irregular and strongly controlled by a combination of NS_NNE and NW-WNW fractures. A main NW fault, named Marimaca Fault, uplifted the northern block and juxtaposed lower parts of the blanket characterized by high grade brochantite-atacamite and mixed mineralization, with upper more chrysocolla rich upper parts, down dropped and protected from erosion at the southern part. This is well illustrated in the section of Figure 7-6 (b), and also looking Figure 7-11.

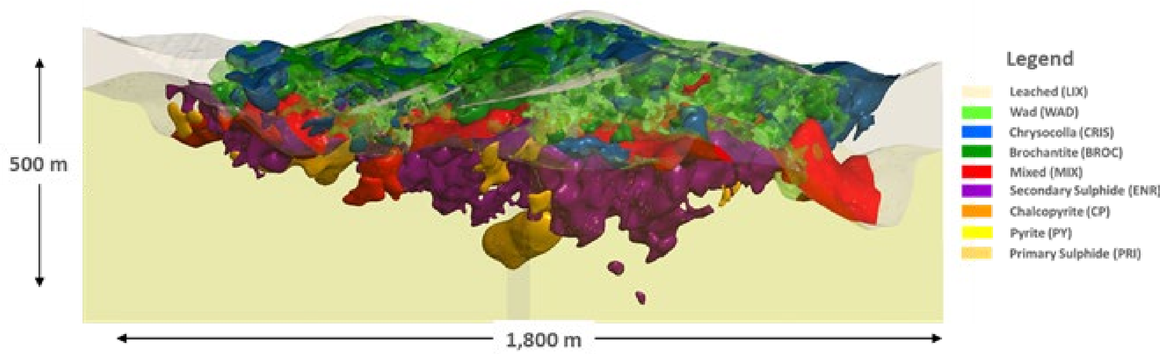


Figure 7-11: 3D view of the Marimaca oxide blanket looking towards NE (Mineral domains modelled in Leapfrog). (Marimaca Copper Corp., 2023)

Lateral zoning in the upper oxides consists of atacamite-brochantite cores surrounded by chrysocolla and outer wad halos. The infill drilling demonstrates that late NW faults also hosted significant chrysocolla mineralization that, at least, crosscut the first stage of oxide zoning (Figures 7-10 and 7-11).

In the blanket, most of the copper oxides occur as fracture staining and fracture-vein-veinlets filling. A key factor that controls the copper oxide distribution is the filling and staining of the parallel fractures. This occurrence helps to enhance the mineralization continuity in between the different sets of feeders, veins and dyke contacts (see illustrative photos in Figure 7-12).

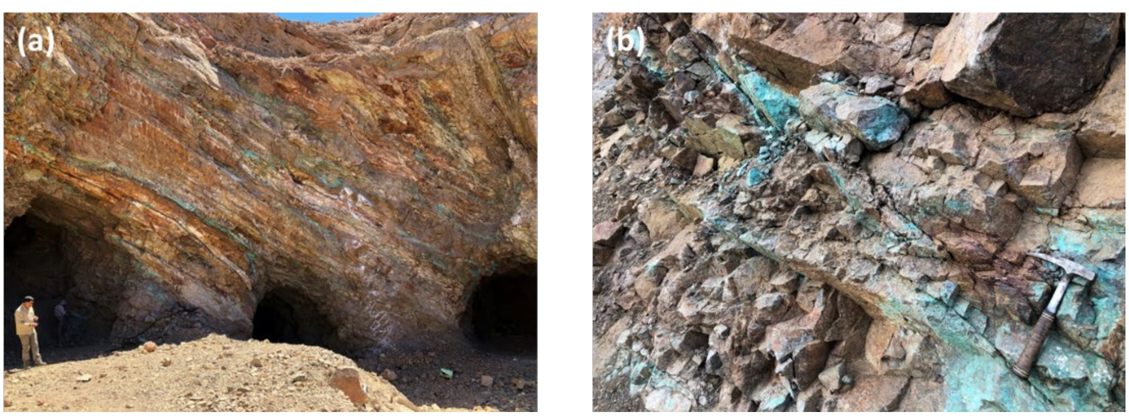


Figure 7-12: Copper Oxide Mineralization Outcrops. (a) intense sheeted fractured monzonite hosting bands of green copper oxides and some "almagrado" rich bands with clay halo at Marimaca 1-23 sector; (b) detail of green copper mineralization at sheeted fractures exposed in a new road cut at Atahualpa sector (hammer for scale reference) (Marimaca Copper Corp., 2021)

Gangue minerals are mostly limonites, chiefly goethite and minor hematite, iron oxides, clays, and minor gypsum. Carbonates are minor in occurrence. Alteration minerals related to mineralization are amphiboles such as actinolite, chlorite and magnetite.

For mineralization interpretation and modeling, six main zones of mineralization or mineral domains have been defined (Table 7-3). These were interpreted by hand on a paper set of 53 orthogonal sections, digitized, and the solids created in a 3D Leapfrog ™ model, Figure 7-13 illustrates the 3D grid of 50 m spaced sections and Figure 7-14 shows the basis for the 3D modeling of the blanket. These include, the drill hole location, blanket mineral domains, lower limit or Top of Sulphide limit and the 3d solid model. 3D model views are shown on Figures 7-14 and 7-15, emphasizing the data and construction as well as the 3D interpreted solids.

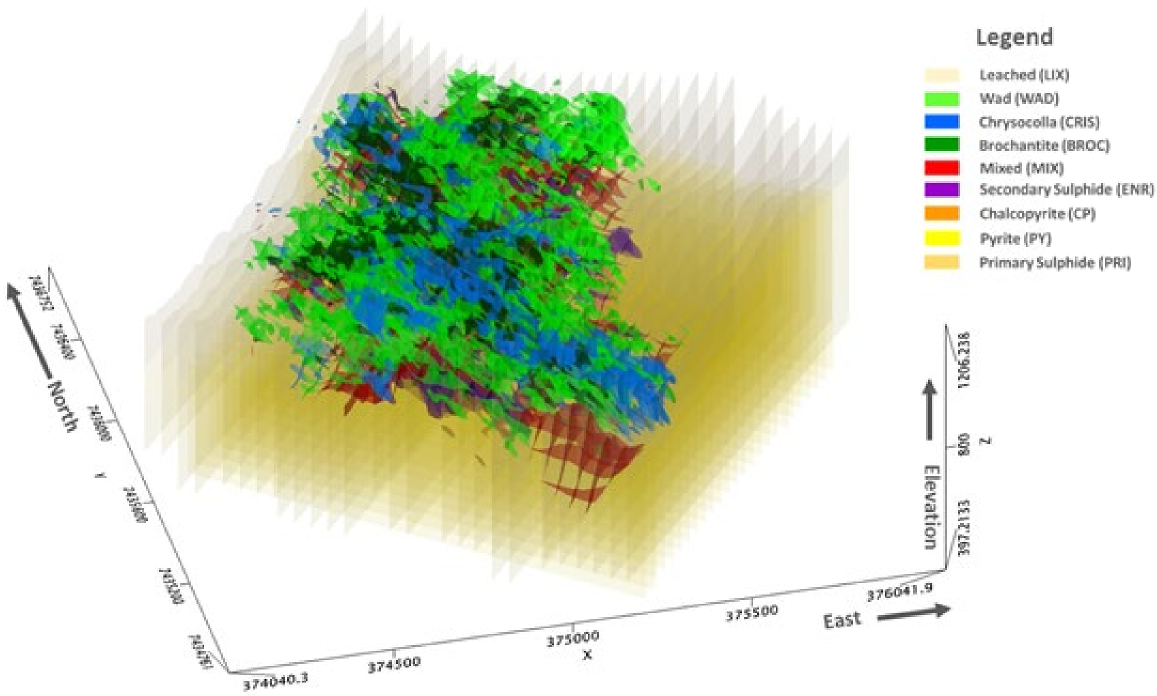


Figure 7-13: 3D view of the 50 m spaced section grid interpreted for mineral zone domains (Marimaca Copper Corp., 2023)

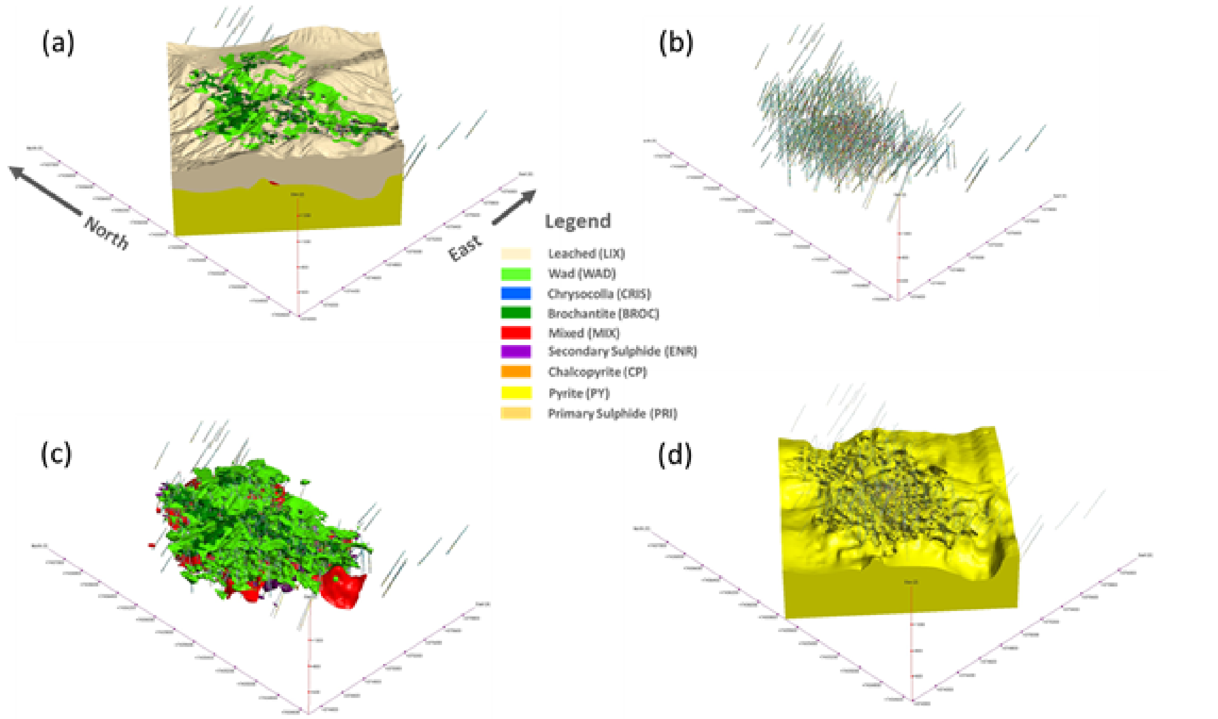


Figure 7-14: Marimaca Project: updated mineral zones views from 3D model. (a) View towards north-east of mineralization zones solid model; (b) drill hole data projection; (c) Mineral zone 3D Model; (d) top of sulfide 3D view. Views from Leapfrog TM model produced by Atticus Geo, 2023.

Mineral zone or domains definition was based on copper oxide relative percentage content. Definition was also assisted by characteristics ranges of acid soluble (CuS) and cyanide soluble (CuCN) assay results. Those values must be consistent with the relative abundance of high Cu sulphuric acid soluble species such as typical green oxides, as compared with secondary coper sulphide species characterized by higher relative cyanide solubilities (Table 7-3). The appropriate solubility range used for help in the definition of Wad, or non-green Cu species, was the relatively low acid solubility in the range of 30-50% (Table 7-3).

The brochantite (atacamite) zone contains more than 60% of atacamite and 30% to 35% of chrysocolla and minor wad. In terms of 3D zonation (Figures 7-10, 7-11 and 7-15), this zone is located at the high-grade cores, immediately surrounding the higher graded mixed zones. The chrysocolla zone is bordering the brochantite, and it is characterized by more than 60% of chrysocolla. The wad zone (Table 7-3; Figure 7-16) is the outer and lower grade, containing more than 80% of non-green copper oxides; this species is described as wad.

The mixed zone consists into a mixture of oxides and secondary sulphides with lesser pyrite and chalcopyrite. The type of oxides and sulphides shows a zoning from central parts in which atacamite-brochantite replaced or are mixed with covellite and chalcocite, to borders where black oxides are related to remnants of weakly chalcocite replaced pyrite. Thus, the nature of mixed zone changes from cores to border zones by mixing secondary sulfides or pyrite with either green or black oxides This must reflects the nature and zoning of the primary mineralization and the effects of cumulative, further oxidized, secondary enrichment process (Table 7-3 and Figure 7-17).

The secondary sulfide zone consists of chalcocite and lesser covellite (percentage of more than 50%, Table 7-3) that occurs as fracture staining, sulfide coating, or massive replacement in breccias or veins (bands). Occurrence of massive chunks of chalcocite has been observed. Most of chalcocite occurs as pyrite replacement or coating, perhaps covellite is always replacing chalcopyrite. CuCN characteristic values are in the 45-75% range (Table 7-3). A zonation of remnants zones of enriched sulfides is encountered beneath the central part of the blanket, and within mixed zones.

The chalcopyrite zones are not well defined due to a lack of enough drilling information. In some deep drill holes, massive occurrences of chalcopyrite are the most frequent. Some pyrite, these can be found in this sulfide zones. Most of the time, actinolite and magnetite are related to chalcopyrite occurrences.

Hole MAD-22 from last geotechnical campaign and included in this MRE exercise intercepts for the first time a consistent section of primary mineralization consisting of stringers and massive occurrences of chalcopyrite and magnetite. Detailed core logging reveals that first event of alteration consist of pervasive replacement by magnetite accompanied by apatite and actinolite. Mineralization event produces stockworking and veins filled by massive chalcopyrite. Pyrite was deposited in veins and veinlets pre and post mineralization. Results from this intercept were released by Marimaca Copper Corporation on December 15th, 2022. Those results reveal for the first time the probable nature of primary mineralization before the extensive and intensive supergene event that produces the secondary oxide blanket and subsequent superimposed events of uplift and oxidation.

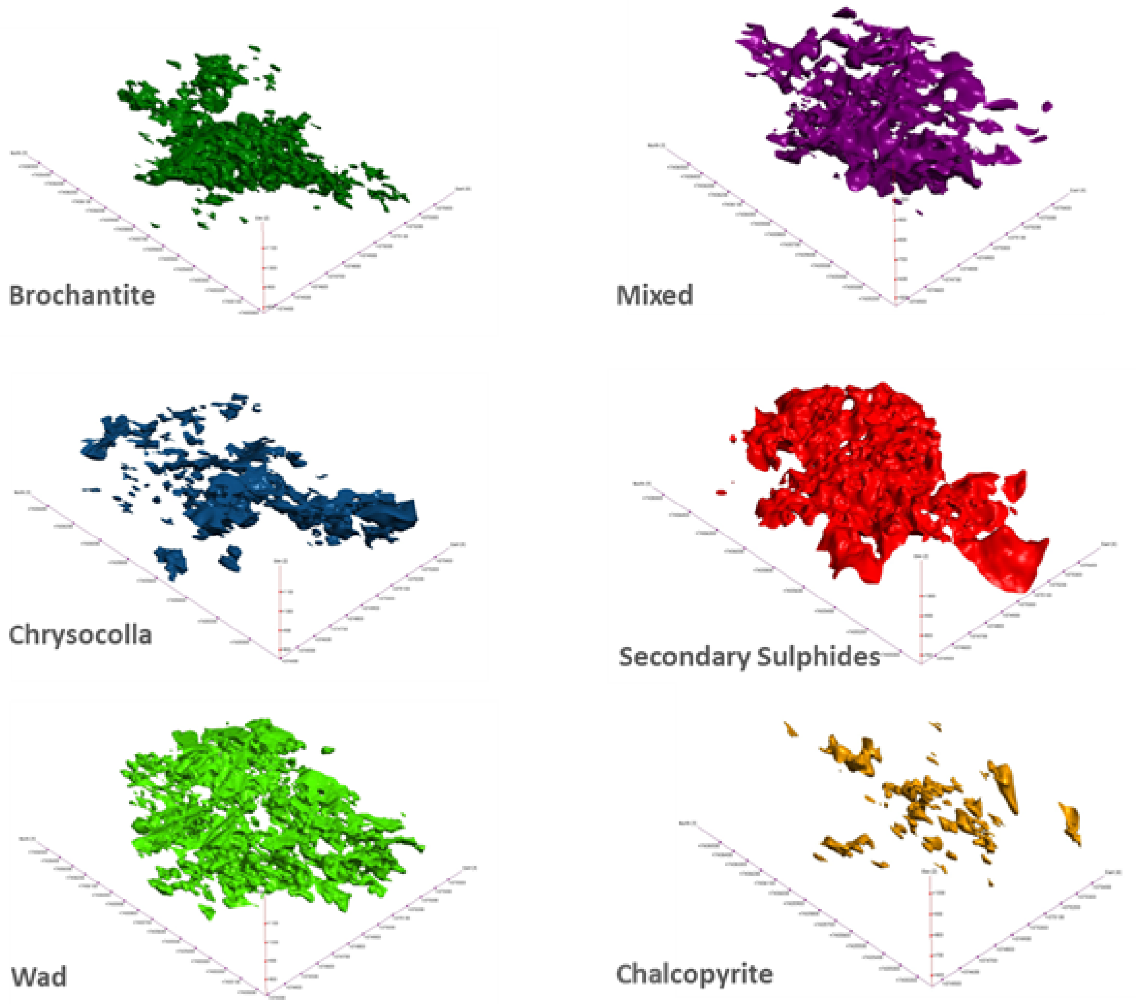


Figure 7-15: Copper oxide blanket mineral zones views from 2022 3D model. Views from Leapfrog TM model produced by Atticus Geo, 2023.

The comparison of the updated 2023 MRE mineralization model with the 2022 MRE reveals that:

- The infill drilling at the northern-central part probes the geometry and continuity of the secondary blanket and revealing new high grade cores located at the northern part. Figure 7-16 illustrate the zonation of the oxides with brochantite centers and borders of chrysocolla and outer wad.

- As observed in 2022 exercise, Brochantite and Wad shows little volume differences, but Chrysocolla increases the volume because of more 220° oriented drilling improved the definition of the chrysocolla rich NW trending fracture zones.

- No main changes exist in the interpretation of the Mixed and Secondary Sulphide Zones (MAMIX zones). Figure 7-17 illustrate the distribution of this zones in the 2023 MRE

(Figure 7-17 (a) and the comparison between solids interpreted in 2022 and 2023 excercises (Figures 7-17 (b) and (c))

- Control by NW main structural corridor becomes evident as northern limit of the blanket. Thus three main faults zones exercise a key control in the geometry of the blanket, the previously described northern fault, the Marimaca and Manolo Fault zones. (Figures 7-10 and 7-16).

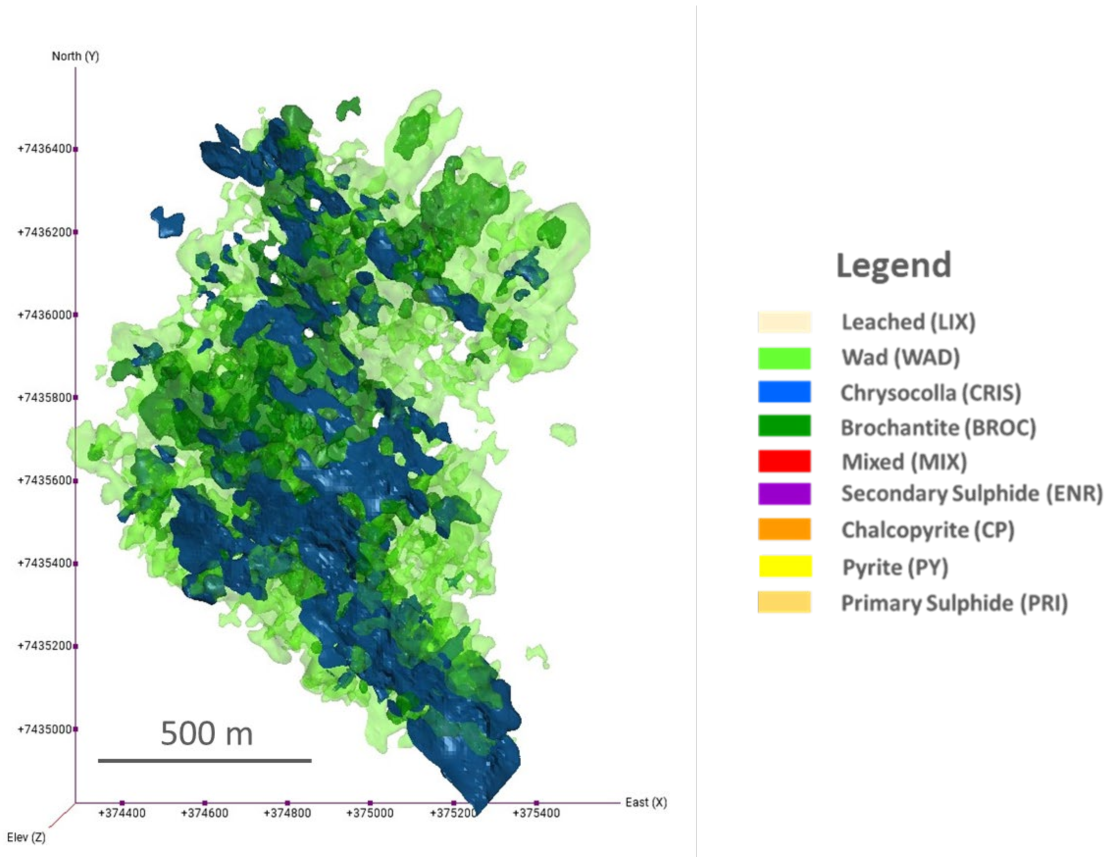


Figure 7-16: 2022 Updated Copper Oxide Domains. Vertical view. (Marimaca Copper Corp., 2023)

A very relevant characteristic of the Marimaca mineralization is that it is exposed at the surface, in outcrops, roads cuts and shallow historic mining workings. Figure 7-16 illustrate the updated oxide copper domains projected to surface, highlighting the domain zonation, same as can be compared with the map of Figure 7-10.

From previous maps revision is evident the structural controls by NS as well by WNW faults systems and the mineral zoning described as high-grade central parts defined by the development of the brochantite zone, surrounded by chrysocolla and outermost wad.

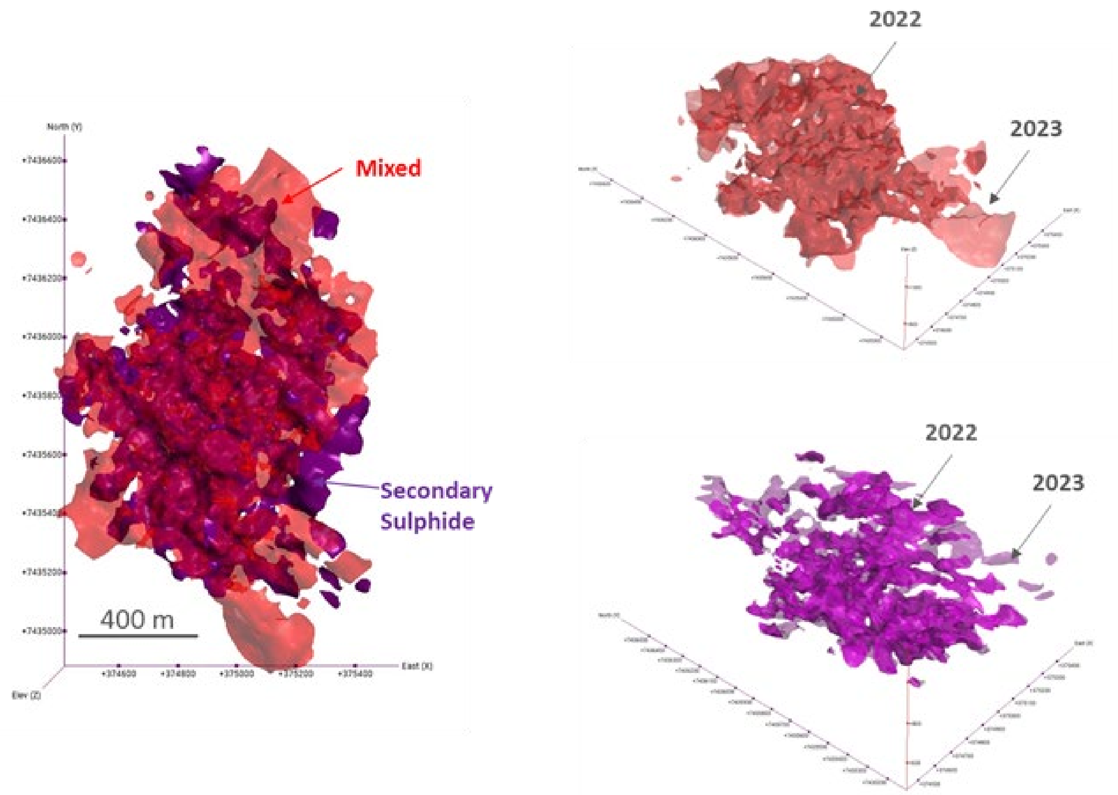
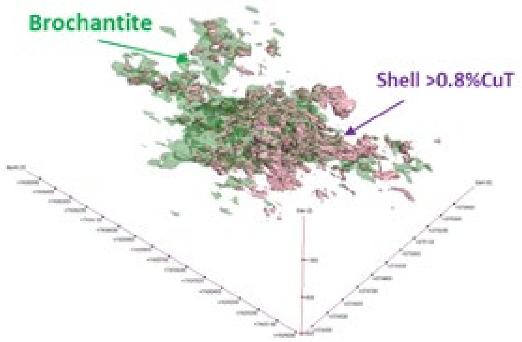
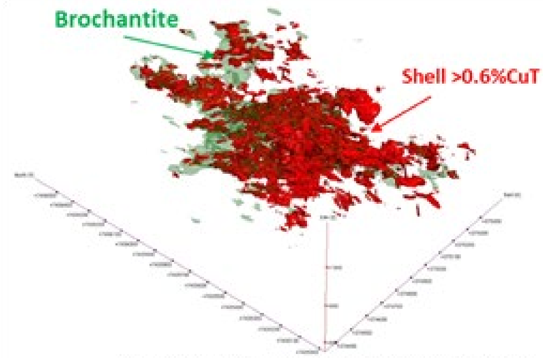


Figure 7-17: 3D views of 2022 MRE MAMIX's mineral zone domains. Note the enhancement of Mixed and Secondary Sulphide zones by comparing 2022 with 2023 MRE, Marimaca Copper Corp., 2023

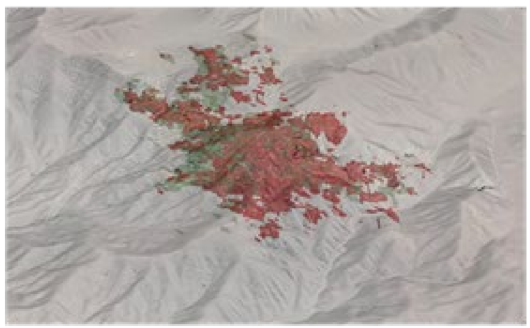
New infill drilling confirms the 2022 observations regarding the continuity of the high-grade core, a relevant characteristics of the Marimaca's mineralized blanket. Geologic evidence shows that higher copper grades are related to the brochantite (atacamite rich) mineral domain, and 2023 updated interpretation confirms this conclusion. As shown in Figure 7-18 the brochantite zone can be correlated with the distribution of the >0.6% > 1.0% Cu grades. It is possible to note that grades higher than 0.6% Cu fits in most of the volume defined for the brochantite zone. Most importantly, when projected to the surface the high-grade core is clearly demonstrated by the combined distribution of 0.6 – 0.1%Cu and brochantite zone distribution.



3D Brochantite Solid + >0.8%CuT Shell



3D Brochantite Solid + >0.6%CuT Shell



3D Brochantite Solid + >0.8+0.6 %CuT Shell Subsurface View

Figure 7-18: 3D views illustrating the Brochantite Mineral Zone and high Cu grades relationship, defining the high-grade core that characterizes the Marimaca deposit, Marimaca Copper Corp., 2023

8 DEPOSIT TYPES

Marimaca displays many characteristics of the IOCG mineralized system: primary mineralization consisting of chalcopyrite-magnetite and calco-sodic alteration. Recent perhaps low Au and Ag occurrence in the MAD 22 sulphide rich intercept confirms the deposit affiliation. Marimaca differs from typical coastal IOCG districts by the intense supergene alteration and mineralization.

The formation of the supergene blanket such as that discovered and evaluated at Marimaca has been not described in any other IOCG district. There is strong evidence that the actual oxide body was formed due to the successive oxidation of a previous secondary sulphide blanket. The lower parts of the oxide blanket: Mixed and Secondary Sulphide mineral zones existence, confirms this particular attribute of Marimaca as compared with other deposits from the northern Coastal Copper Belt.

Described remnants of previous enrichment or secondary sulphide were observed as chalcocite and covellite replacement textures of pyrite and chalcopyrite. Evidence of the oxidation process can be encountered in the Mixed zone, where zoned green and black copper oxides partially replace secondary sulphides. Mineralogic zoning and copper grade distribution in the blanket also suggest repeated events of lateral migration and accumulation. This process requires abundant pyrite to produce enough sulphuric acid, but as established the common IOCG system is low in pyrite, nevertheless as observed in the sulphide rich intercept of MAD-22, both Cu and Py rich sulphide phases characterize the primary mineralization at Marimaca, showing another singular variation in the common theme of the IOCG spectrum of mineral deposits.

Thus, as previously hypothesized, it is possible that a very rich and pervasive chalcopyrite >> pyrite primary mineralization and a long-lived process of oxidation can explain the formation of the Marimaca's uncommon secondary blanket.

9 EXPLORATION

The present MRE update captures an additional 28,374 m drilling relative to the 2022 MRE. The captured drilling includes 3,002m of DDH drilled and 25,372 m of RC drilling. Figure 9-1 shows the distribution of new drill holes added and used for the purposes of the present 2023 MRE.

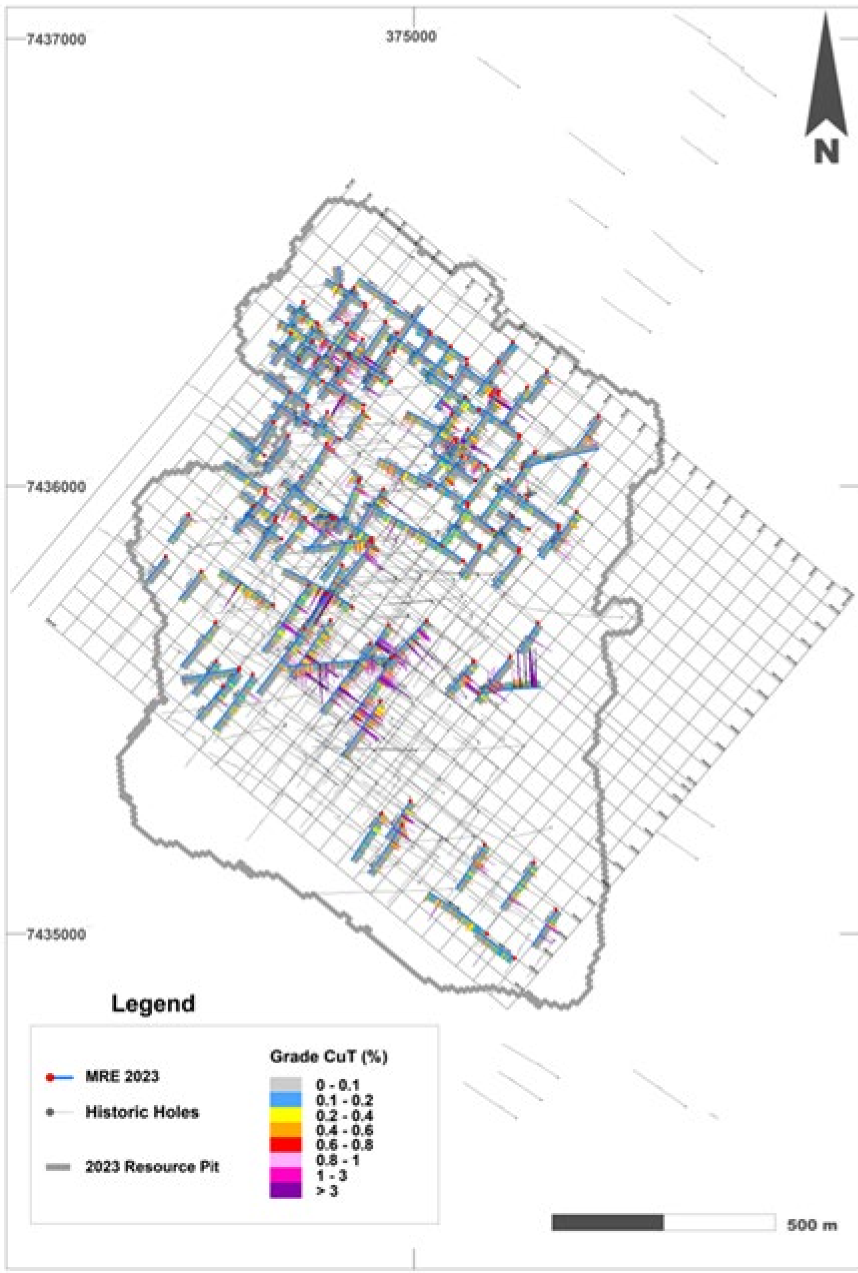


Figure 9-1: Location of new holes added for the 2023 MRE. Horizontal projections traces show CuT grades as histograms. Project local grid consisting in 50 m spaced sections in NE and NW directions is also shown, Marimaca Copper Corp., 2023

Same as in the 2022 MRE as compared with pre-infill reported results from 2020 MRE the following exploration work has been carried out:

- Completion of the drilling sample database with Sequential Copper assay (mostly CuCN) for all the >0.1 Cu%. Since the 2021 campaign, Sequential Copper is the standard assay methodology for all samples.
- Re-logging previous drill holes for a better definition of mixed and secondary sulphide mineralization, this work benefited by the new Sequential Copper assaying
- Actualization and check of the Topographic field bases
- Completion of a new Drone driven imaging and topographic orthorestitution
- Detailed surface mapping of dyke system, emphasizing rock types and contact relationships

9.1 Surveying, Image and Topographic Base

The 2022 photogrammetric survey was updated by means a new High Resolution UAV survey. The total district area was surveyed (56km^2) along 55-70 m apart 302 flight lines, at an average altitude of 200 m above the surface (Figure 9-2). Flight resolution was 5 cm per pixel. A digital elevation model (DEM) was generated with interpolated level curves at 1 m for use at the 1:1,000 scale (Figure 9-2). Other products such as RGB, Lithology, Limonite and FeOx Index images were also received. The topographical support was made by conventional topography, which, from official bases, generated a sufficient network of points to balance and orthorectification of UAV image and DEM (Figure 9-2). All topographic bases have been certified and coordinates reported in UTM PSAD56 and WGS84 systems.

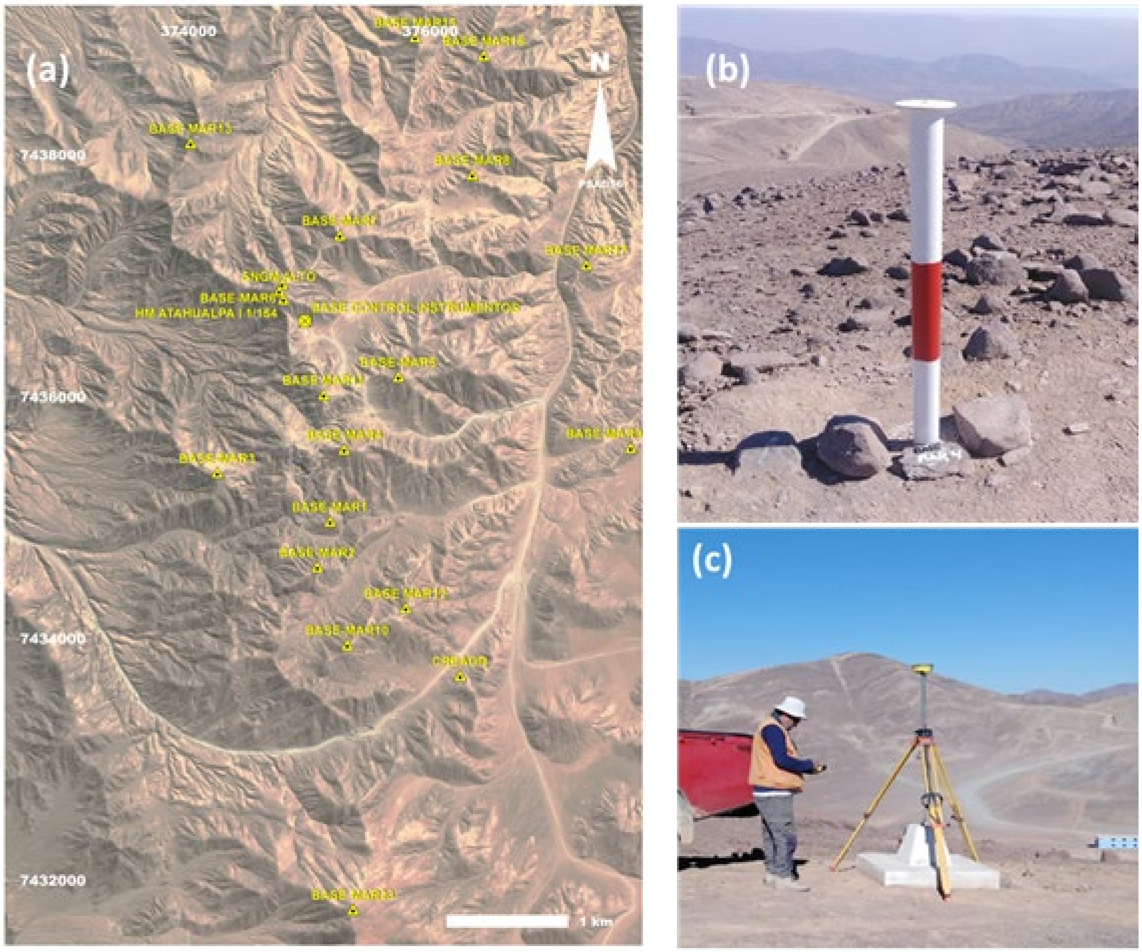


Figure 9-2: Topographic Reference Point Grid. (a) example of registered control point; (b) HM ATAHUALPA I 1/154 coordinate base point (c) survey point (Marimaca Copper Corp., 2023)

Updated images and topography of the project area are shown in Figure 9-3.

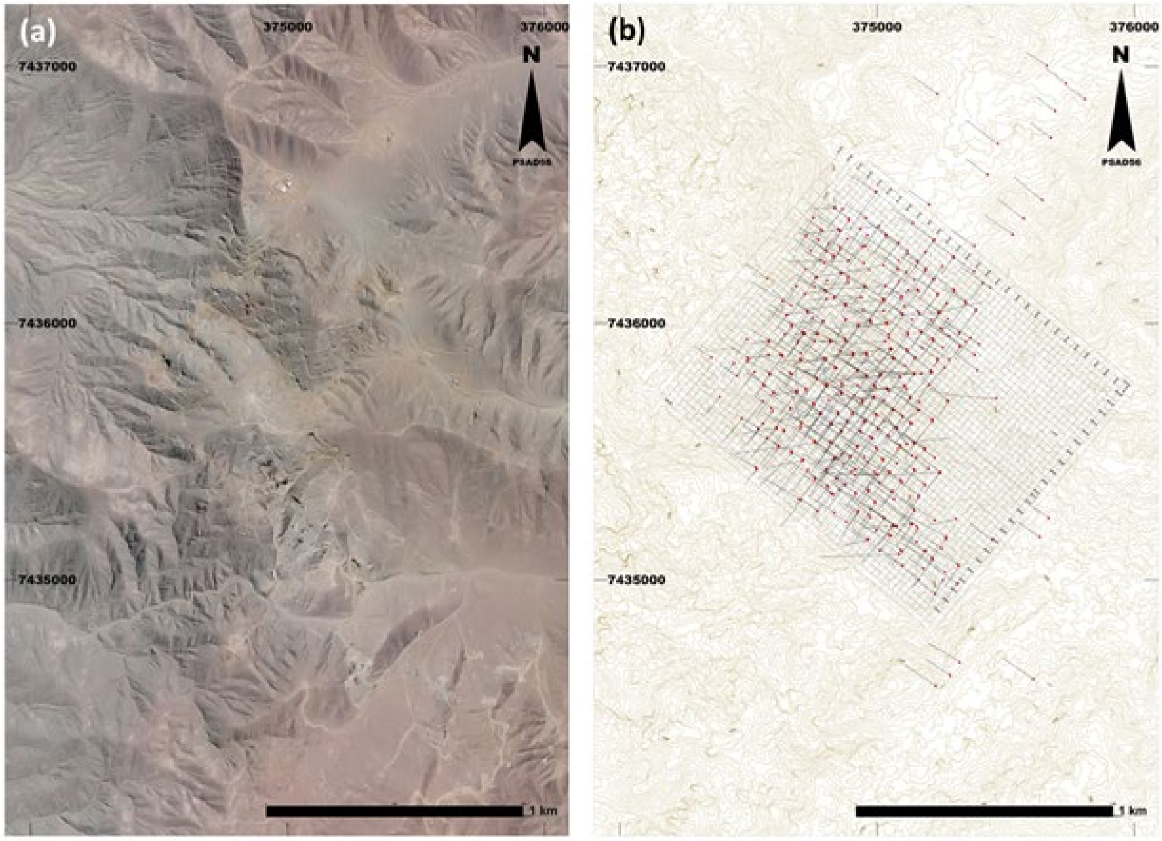


Figure 9-3: Image (a) and topographic contour map (b). UAV special flight covering and contours from topographic restitution controlled by base points from Fig 9-2 and other key points such as drill collars obtained image, Marimaca Copper Corp., 2023.

9.2 Detailed Geological Mapping

The 1:1,000 scale surface geological map (Kovacic, 2017) was updated. Emphasis was placed on dyke units definition, rock composition and contact relationships; the same review was focused on mineralized structures, as well as late faults. The resulting updated map is shown in 9-4.

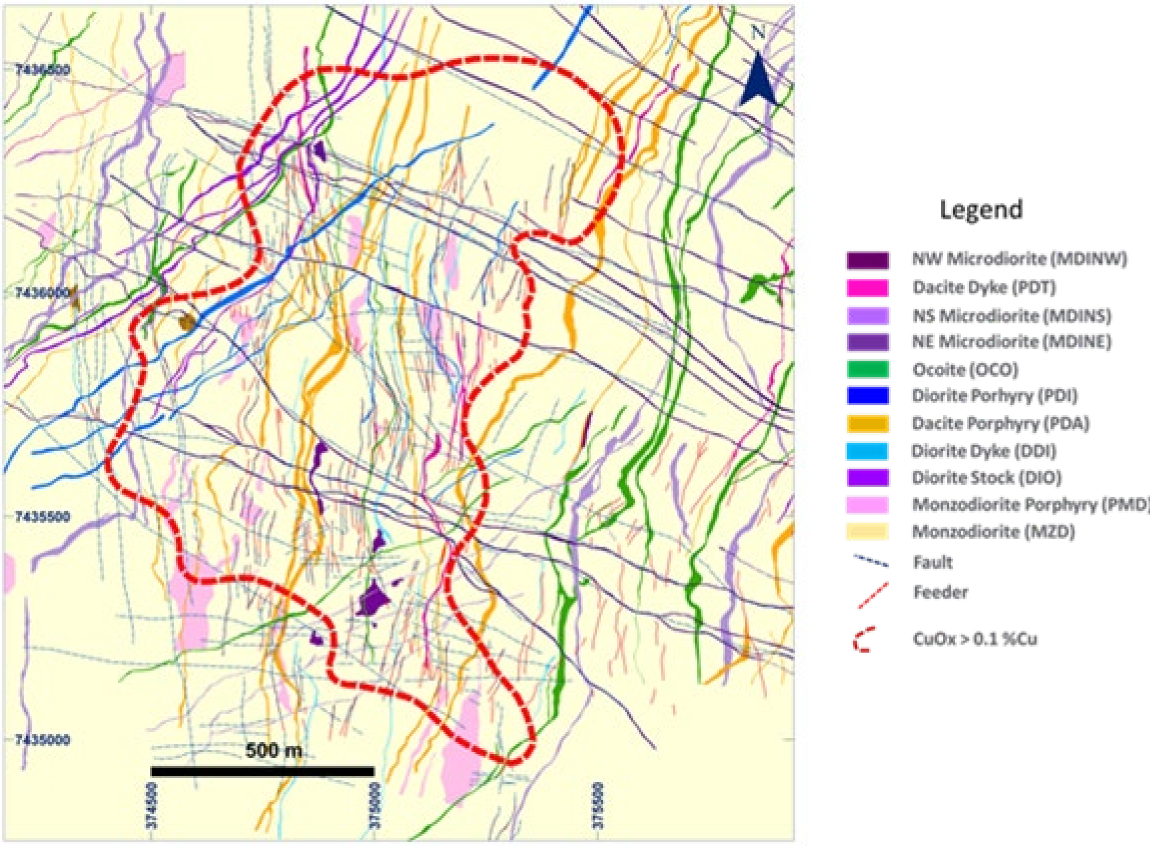


Figure 9-4: 2023 Updated geologic surface map. Flagging of main rock and structures is shown. The >0.1%Cu limit is also shown for reference. Marimaca Copper Corp., 2023

9.3 Drill Sample Re-Assaying and Logging

Detailed mapping of secondary sulphides supported by Sequential Copper assaying methodology was continued as established in the 2022 MRE. All >0.1%Cu from the historic database were assayed for CuCN, and all new drilling samples from since the 2021 campaign are assayed by Sequential Copper methodology.

Historic drill samples were re-logged taking into consideration the updated assays. All new information was updated in the project database. Consequently, the mixed and secondary sulphide mineral domains were better defined.

10 DRILLING

Table 10-1 contains the summary of the Marimaca project drilling to date. The actual database consists of 139,164 m, divided into 127,186 m of RC and 11,978 m of DDH. As compared with the previous 2022 MRE a total of 28,374 m has been added from the 2022 infill programs.

Table 10-1: Marimaca Project. Drilling Summary 2016 – 2023.

MARIMACA PROJECT DRILLING SUMMARY 2016-2022			
MARIMACA PROJECT			
DRILLING SUMMARY MARCH - AUGUST 2016			
PROJECT	**TYPE**	**HOLES**	**TOTAL METERS**
Discovery RCH drilling	Reverse circulation	15	2,710
Resource 100x100 RCH drilling	Reverse circulation	39	8,910
DDH Metallurgy column test	Diamond drilling HQ	6	2,008
	Total RCH	**54**	**11,620**
	Total DDH	**6**	**2,008**
MARIMACA PROJECT			
DRILLING SUMMARY SEPTEMBER - DECEMBER 2017			
PROJECT	**TYPE**	**HOLES**	**TOTAL METERS**
Infill 50X50m RCH drilling	Reverse circulation	59	11,928
DDH Geometallugy	Diamond Drilling PQ	4	820
DDH Geothecnics	Diamond Drilling HQ3	6	1,230
	Total RCH	**59**	**11,928**
	Total DDH	**10**	**2,050**
MARIMACA NORTH-EAST			
DRILLING SUMMARY NOVEMBER 2017 - JANUARY 2018			
PROJECT	**TYPE**	**HOLES**	**TOTAL METERS**
Discovery RCH drilling	Reverse circulation	11	2,950
	Total RCH	**11**	**2,950**
LA ATOMICA			
DRILLING SUMMARY NOVEMBER 2017 - JANUARY 2018			
PROJECT	**TYPE**	**HOLES**	**TOTAL METERS**
Discovery RCH drilling	Reverse circulation	14	3,220
	Total RCH	**14**	**3,220**
PHASE II LA ATOMICA PROJECT			
DRILLING SUMMARY AUGUST-2018 - AUGUST 2019			
PROJECT	**TYPE**	**HOLES**	**TOTAL METERS**
Exploration - Delineation	Reverse circulation	55	12,980
EW Exploration	Reverse circulation	6	1,050
Manolo Sector Exploration	Reverse circulation	9	2,120
DDH Geometallugy - La Atomica	PQ Diamond Drilling	9	2,203
	Total RCH	**70**	**16,150**
	Total DDH	**9**	**2,203**
PHASE II ATAHUALPA - TARSO PROJECTS			
DRILLING SUMMARY AUGUST-2018 - AUGUST 2019			
PROJECT	**TYPE**	**HOLES**	**TOTAL METERS**
Discovery and Exploration	Reverse circulation	61	17,700
High Grade Exploration - Delineation	Reverse circulation	16	4,200
EW Exploration	Reverse circulation	32	7,266
Tarso - Exploration	Reverse circulation	29	7,200
DDH Geometallugy - Atahualpa	PQ Diamond Drilling	14	2,715
	Total RCH	**138**	**36,366**
	Total DDH	**14**	**2,715**
PHASE III MARIMACA DEEP DRILLING, MARIMACA MIXED TARGET (MAMIX)			
DRILLING SUMMARY FEBRUARY - SEPTEMBER 2021			
PROJECT	**TYPE**	**HOLES**	**TOTAL METERS**
Marimaca Sulphide	Reverse circulation	4	2,772
Marimaca re-entry (MAMIX)	Reverse circulation	13	3,610
	Total RCH	**4**	**6,382**
PHASE IV MARIMACA INFILL - MAMIX			
DRILLING SUMMARY FEBRUARY - AUGUST 2022			
PROJECT	**TYPE**	**HOLES**	**TOTAL METERS**
Marimaca Infill RCH drilling	Reverse circulation	150	33,952
Marimaca Infill DDH drilling	PQ Diamond Drilling	6	1,600
Marimaca re-entry (MAMIX)	Reverse circulation	25	3,968
Marimaca (MAMIX)	Reverse circulation	2	650
DDH Geothecnics	Diamond Drilling HQ3	7	1,402
	Total RCH	**152**	**38,570**
	Total DDH	**13**	**3,002**
MARIMACA 2023 MRE	**Reverse Circulation**	**502**	**127,186**
	Diamond Drilling	**52**	**11,978**
	TOTAL	**554**	**139,164**

The drilling companies Drillex and Major Drilling using diameters 5‘¾ to 5‘5/8 completed the 2021 and 2022 RC drilling.

The drill holes were positioned at 50 m regularly spaced. Holes were drilled in two directions: 220° and 310° and -60º dip. As part of MAMIX discovery and delineation campaign 31 holes were re-entry totaling 6,578 m, most of these holes reach depths up to 500 m.

Local contractors carried out the supervision of the drilling operation. An experienced topographer surveyed the collars. Datawell Services carried out the downhole surveys for the 2021 and 2022 campaigns.

Detailing the downhole surveying process, most of the initial measurements done by Wellfield as reported by all previous MRE's reports (Oviedo and Palma, 2017; 2018; 2020 and 2022) were done towards Magnetic North orientation and in this way used in drill hole survey data base. Since 2019 all measurements by Datawell were using north seeking orientation. For this MRE 2023 purposes, all drill hole surveying data base was updated to the seeking north standard. To assure quality of this process selected old holes previously surveyed by Wellfied were re-measured by Datawell. This data base update does not affect the reliability of the geologic interpretation and resource estimation as confirmed by NCL.

Samples were collected each 2 m interval. Marimaca staff supervised all the drilling and sampling. Recoveries were controlled by weighing samples and accurate control was extended toward the division process realized in the drill location. The recoveries were measured in weight percent as compared with a theoretical sample weight. Marimaca technical staff checked all data. Measured recoveries are over 95% for RC drilling, without significant variations and unrelated to copper grades.

All holes were geologically logged on digital data capture. The data are rock, structure, alteration and mineralization based on drilling intervals, recoveries and analytical results. After validation, the mineral and alteration zones were defined. The results were entered in the database as a table with all mapped data and a consolidated log of the drill was prepared. Most of this work was done by experienced senior consultant geologist supported by consultant junior geologist.

Drill cuttings from RCH were collected and cleaned for a geological description of samples. A first logging collected rock, structure (as cutting allows) and alteration. Copper mineralogy was re-logged as chemical results were received.

In addition to measuring deviations, most of the holes were surveyed using an optical tele viewer (OPTV or BHTV), with structures and orientation measurements, which continuously and thoroughly recorded the holes' walls and measured structures. The structures were measured in ranks according to their width and the results were reported and plotted on stereographic networks and rosette diagrams. This was valuable information for the structural model interpreted for the 2023 MRE exercise.

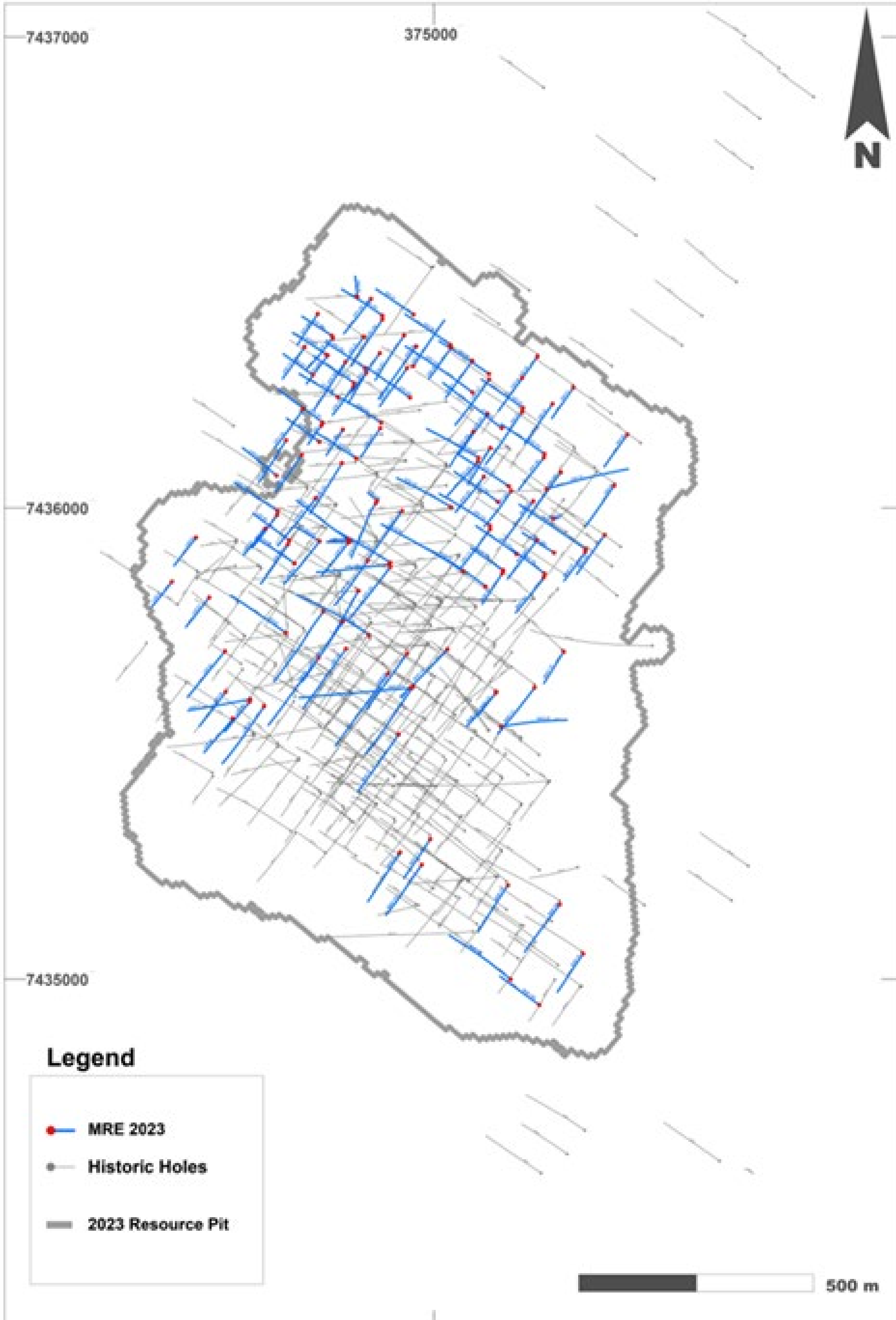


Figure 10-1: Drill hole database plan view, 2022 drilling noted with blue drill traces (Marimaca Copper Corp., 2023)

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Drillhole Sampling

Assay samples informing the Marimaca Mineral Resources are, since 2017, prepared at a laboratory site in Calama and assayed by Andes Analytical Assay Ltd. (AAA) in Santiago. During earlier campaigns, samples were prepared at the project site and assayed by Geolaquim Ltd. in Copiapo, with AAA as the umpire laboratory. MC only worked with an umpire laboratory during the first RC drilling campaign.

Marimaca RC holes are drilled on a continuous 2-meter basis and its samples riffle split on site three times, up to one eighth (12.5%) of its volume. The last split yields "sample A", which is sent for preparation and assaying, and "sample B", which is used to obtain drill cuttings (1 kg) and coarse/preparation duplicates, and then stored in special facilities on site. For diamond drillholes (DDH), samples are obtained every 2 meters from a half-core, with the other half stored on site.

Samples are transferred by laboratory personnel from the project to Calama, and then the preparation pulps are returned to generate the analysis batches. Upon reception, sample details are logged and insertion points for quality control samples in the sample flow are determined.

Samples are prepared following a standard protocol: Drying (<5% humidity), crushing up to 80% to -10#Ty, homogenizing, splitting and pulverizing a 400-gram subsample up to 95% to -150#Ty. All samples are assayed by AAS for total copper (CuT) and soluble copper (CuS). The latter was initially obtained from a specific CuS test and currently from a sequential copper (CuSec) routine.

Laboratory results are loaded directly from digital assay certificates into the database, in order to minimize error sources.

11.2 Sample Rejects and Pulps Storage

- RC cuttings are stored at appropriate facilities in the field (old adits), as are coarse rejects of about 8-9 kg, obtained from the third riffle split.
- The laboratory was also requested to store in appropriate project facilities all the crushed rejects of DDH samples (-1/4"), trays with backup half-cores and bags of 1 kg RC sample rejects.
- From metallurgical test cores, a representative 10-cm sample is left and stored in boxes systematically.

11.3 Specific Gravity Data Sampling

Specific gravity was measured systematically on core fragments taken from the deposit for density and geotechnical issues. Specific gravity is determined using a water displacement method with paraffin coating. The fragments sampled are 7 to 26 cm long. Measurements were done by Mecanica de Rocas (Rock Mechanics) lab at Calama.

In order to obtain density measurements characterizing the Marimaca mineralized rocks, test samples were taken from core samples. The sample selection criteria and laboratory tests are as follows: Each selected piece was logged in detail and photographed. Then they were then sent to Calama's Rock Tests certified laboratories, for the corresponding unit weight assaying. The method was the weight-volume ratio, with previously kerosene waterproofed and weighted in air and then, weighed submerged in water.

Density samples were collected at approximate intervals of 20 m. From the 2016 program, 58 samples were tested and from the 2017 program, another 98, additional 427 samples in 2019 and finally 72 samples in 2022 were tested, which makes it a total of 634 samples. Measurements were performed using standard protocols following the paraffin-coated Archimedes (water immersion) method.

11.4 Quality Assurance and Quality Control Programs (QA/QC)

The analytical quality control programs implemented at Marimaca involve the use of coarse/preparation (PRD) and pulp (PUD) duplicates for precision analyses, standard reference materials (SRM) and, only since 2018, fine blanks (FBL) for contamination analyses. Check samples (CHD) were only used during the pilot exploration campaign.

Control samples are systematically inserted among regular samples and submitted for assaying to the primary laboratory, which is currently Andes Analytical Assay (AAA), and previously Geolaquim (GLQ). MCC has protocols in place for handling analytical results that exceed acceptable limits (described further in this section), which can ultimately trigger re-assays of entire or portions of sample batches.

Table 11-1 sums up the evolution of Marimaca's QA/QC programs and their respective coverage.

Table 11-1: Control programs and their coverage for each drilling campaign (* not blanks but low grade SRMs)

Hole Type	Campaign	Period	Holes	Lab	Coverage					
					CHD	PRD	PUD	SRM	FBL	Total
RC	MAR 01-16	2016	15	GLQ	19%	-	-	-	-	19%
				AAA						
	MAR 17-54	2016	39	GLQ	-	6%	6%	6%	-	18%
	MAR 55-124	2017-2018	84	AAA	-	7%	7%	5%	1%*	20%
	LAR 01-14									
	LAR 15-84	2018	70	AAA	-	7%	7%	4%	3%	21%
	AER 01-03	2018-19	138	AAA	-	8%	8%	4%	4%	24%
	ATR 01-109									
	TAR 01-26									
	MAR 125-178	2021-2022	156	AAA	-	7%	7%	3%	4%	21%
	LAR 85-109									
	ATR 110-167									
	TAR 27-42									
DDH	MAD 01-06	2016	6	GLQ	-	-	10%	8%	-	18%
	MAD 07-16	2017	10	AAA	-	-	10%	7%	1%*	18%
	ATD 01-13	2019	22	AAA	-	-	11%	7%	2%	20%
	LAD 01-09									
	ATD 14-18	2021-2022	13	AAA	-		10%	5%	5%	20%
	LAD 10-11									
	MAD 17-22									

It is evident that MCC has improved and refined its QA/QC programs over time, following recommendations made by NCL in previous reports. Total coverage is around 20% in all cases, which more than meets industry standards, though with slight excess of duplicate sample coverage for RC holes, mostly in detriment of SRM sample coverage, which reached only 3% in the most recent campaign. Recommendations will be made in this and other regards in the following sections.

Standard Reference Material (SRM) Analysis

Two companies provided SRMs: Geostats Pty Ltd (Australia) during 2016-2018, with 966 samples of 17 materials; and Intem Ltd. (Chile) with 1,250 samples of 6 materials during 2018-2019, and 738 samples of 8 materials during 2021-2022. Geostats' SRMs come from different sources, depending on the required grade, while Intem SRMs are prepared from the project's RC drilling rejects, which are homogenized and analyzed in a round robin program, in order to obtain their best value.

NCL's SRM review begins with a direct comparison of each material's average grade (AV) against their best value (BV) by calculating the bias (AV/BV-1), which shouldn't exceed ±5%. Next, Shewart control charts are constructed, plotting time series of the SRM values against acceptability (precision) windows of BV±2*SD / BV±3*SD (round robin SD) in the case of Geostats SRMs, or BV±5% / BV±10% in the case of Intem SRMs, as the latter don't count with a suitable SD for quality control purposes. Values surpassing these windows (outliers) should remain below 5% of all samples (with an exceptional tolerance of 10%), especially in the case of the outermost windows.

Table 11-2 summarizes the SRM analysis of Geostats materials, while Tables 11-3 and 11-4 summarize SRM analyses of Intem materials for the 2018-2019 and 2021-2022 periods, for comparison purposes. Results for the 2016-2018 period are provided irrespective of campaign or drillhole type, as there are no major issues to point out when reviewing them separately, as detailed in NCL (2020). Results for the 2021-2022 campaigns were reviewed separating DDH and RC drillholes, as shown in table 11-4.

Table 11-2: SRM analysis summary for Geostats materials in the 2016-2018 campaigns

SRM Type	SRM Samples	SRM %CuT		Global Bias (<5%)	Outliers (<5%)			
					BV ± 2SD		BV ± 3SD	
		BV	AV		#	%	#	%
GBM 309-6	100	0.028	0.028	**2.1%**	0	**0.0%**	0	**0.0%**
GBM 999-4	41	0.103	0.105	**2.2%**	0	**0.0%**	0	**0.0%**
GBM 311-6	50	0.104	0.103	**-0.9%**	0	**0.0%**	0	**0.0%**
GBMS 911-2	73	0.142	0.146	**3.1%**	1	**1.4%**	0	**0.0%**
GBM 311-2	135	0.227	0.226	**-0.7%**	0	**0.0%**	0	**0.0%**
GBMS 304-5	46	0.229	0.227	**-1.0%**	0	**0.0%**	0	**0.0%**
GBM 913-6	66	0.321	0.308	**-4.0%**	1	**2.1%**	0	**0.0%**
GBM 995-4	108	0.350	0.351	**0.3%**	0	**0.0%**	0	**0.0%**
GBM 908-10	20	0.360	0.361	**0.2%**	0	**0.0%**	0	**0.0%**
GBMS 304-3	38	0.364	0.368	**1.2%**	0	**0.0%**	0	**0.0%**
GBM 309-2	20	0.529	0.525	**-0.8%**	0	**0.0%**	0	**0.0%**
GBM 910-7	58	0.534	0.536	**0.4%**	4	9.8%	3	7.3%
GBM 301-7	20	0.558	0.559	**0.3%**	0	**0.0%**	0	**0.0%**
GBM 311-4	65	0.620	0.608	**-1.9%**	2	**3.5%**	0	**0.0%**
GBMS 911-3	52	0.765	0.767	**0.3%**	0	**0.0%**	0	**0.0%**
GBM 907-14	18	0.817	0.812	**-0.6%**	0	**0.0%**	0	**0.0%**
GBM 905-12	56	2.185	2.132	**-2.4%**	2	**4.2%**	0	**0.0%**

Table 11-3: SRM analysis summary for Intem materials in the 2018-2019 campaigns

SRM Type	SRM Samples	SRM %CuT		Global Bias (<5%)	Outliers (<5%)			
					BV ± 5%		BV ± 10%	
		BV	AV		#	%	#	%
MRC-2	599	0.201	0.202	**0.3%**	13	**2.5%**	0	**0.0%**
MRC-3	211	0.301	0.302	**0.4%**	4	**2.1%**	0	**0.0%**
MRC-4	130	0.409	0.409	**0.1%**	0	**0.0%**	0	**0.0%**
MRC-5	141	0.594	0.593	**-0.1%**	1	**0.8%**	0	**0.0%**
MRC-6	65	0.827	0.831	**0.4%**	1	**1.8%**	0	**0.0%**
MRC-7	104	1.208	1.204	**-0.3%**	3	**4.1%**	0	**0.0%**

Table11-4: SRM analysis summary for Intem materials in the 2021-2022 campaign.

RC Drillholes								
SRM Type	SRM Samples #	BEST BV CuT [%]	AVERAGE AV CuT [%]	Global Bias (<5 %)	Outliers (<5 %)			
					BV ± 5%		BV ± 10%	
					#	%	#	%
MRC-2	173	0.201	0.202	**0.5%**	13	**7.6%**	3	**1.8%**
MRC-3	97	0.301	0.306	**1.7%**	9	**9.5%**	2	**2.1%**
MRC-4	49	0.409	0.413	**1.0%**	3	**6.1%**	0	**0.0%**
MRC-5	33	0.594	0.594	**0.0%**	2	**6.3%**	1	**3.1%**
MRC-6	19	0.827	0.821	**-0.7%**	3	**15.8%**	0	**0.0%**
MRC-7	25	1.208	1.180	**-2.3%**	2	**8.3%**	1	**4.2%**
MRC-9	240	0.148	0.149	**0.7%**	7	**2.9%**	0	**0.0%**
MRC-10	31	0.243	0.245	**0.8%**	2	**6.5%**	0	**0.0%**
TOTAL	**667**							

DDH Drillholes								
SRM Type	SRM Samples #	BEST BV CuT [%]	AVERAGE AV CuT [%]	Global Bias (<5 %)	Outliers (<5 %)			
					BV ± 5%		BV ± 10%	
					#	%	#	%
MRC-2	17	0.201	0.202	**0.5%**	0	**0.0%**	0	**0.0%**
MRC-3	12	0.301	0.304	**1.0%**	0	**0.0%**	0	**0.0%**
MRC-4	4	0.409	0.435	**6.4%**	1	**25.0%**	1	**25.0%**
MRC-5	6	0.594	0.591	**-0.5%**	1	**16.7%**	0	**0.0%**
MRC-6	2	0.827	0.823	**-0.5%**	0	**0.0%**	0	**0.0%**
MRC-7	5	1.208	1.220	**1.0%**	0	**0.0%**	0	**0.0%**
MRC-9	19	0.148	0.148	**0.0%**	1	**5.3%**	0	**0.0%**
MRC-10	6	0.243	0.244	**0.4%**	0	**0.0%**	0	**0.0%**
TOTAL	71							

Geostats materials (Table 11-2) show good accuracy (bias %) and precision (outlier %), though with some uncertainty in a number of cases due to their low coverage (<50 samples), which is a direct consequence of the wide SRM variety. The change to in-house SRMs mitigated this issue by reducing the number of reference values to 6 and increasing, as a result, their individual coverage. As expected, Intem materials during 2018-2019 (Table 11-3) show improved results, with very good accuracy and precision. During the 2021-2022 campaigns, with the addition of 2 materials and lower SRM coverage, results for RC holes denote very good accuracy and acceptable precision (outlier numbers mostly above 5% for the first window, but none surpassing the following window), while for DDH holes results look generally acceptable, though with rather high uncertainty given the very low coverage in most cases.

As an example, Shewart charts for materials MRC-2 (Figure 11-1), MRC-3 (Figure 11-2) and MRC-7 (Figure 11-3) of the 2021-2022 RC campaign were selected for this report.

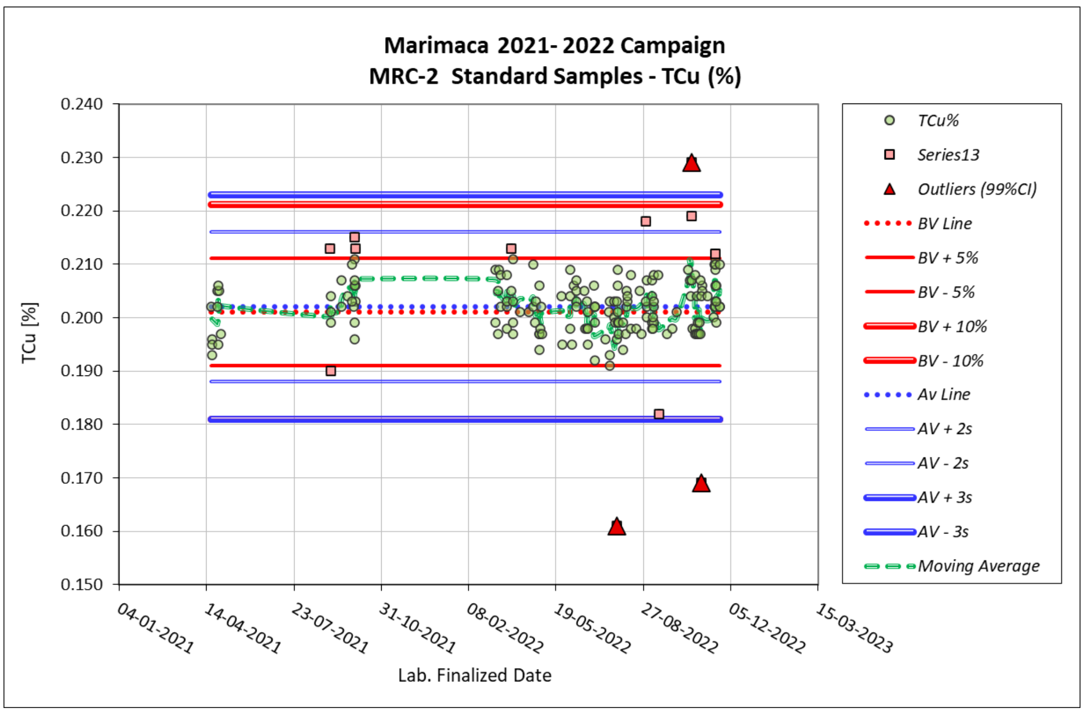


Figure 11-1: Shewart chart for material MRC-2 in the 2021-2022 RC campaign

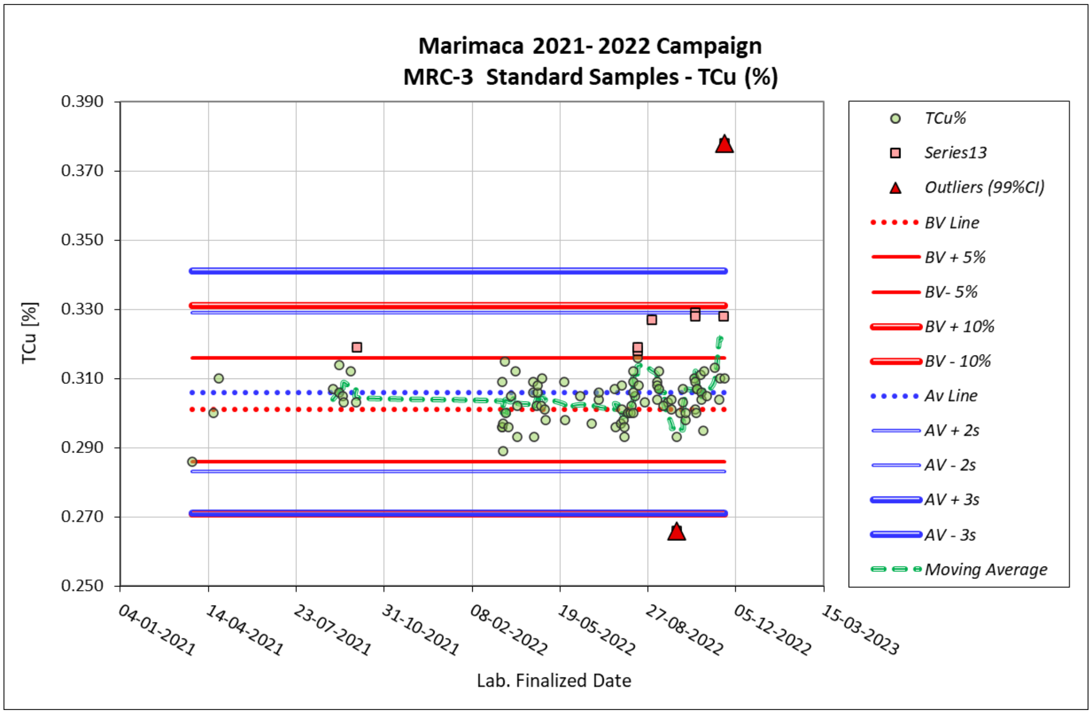


Figure 11-2: Shewart chart for material MRC-3 in the 2021-2022 RC campaign

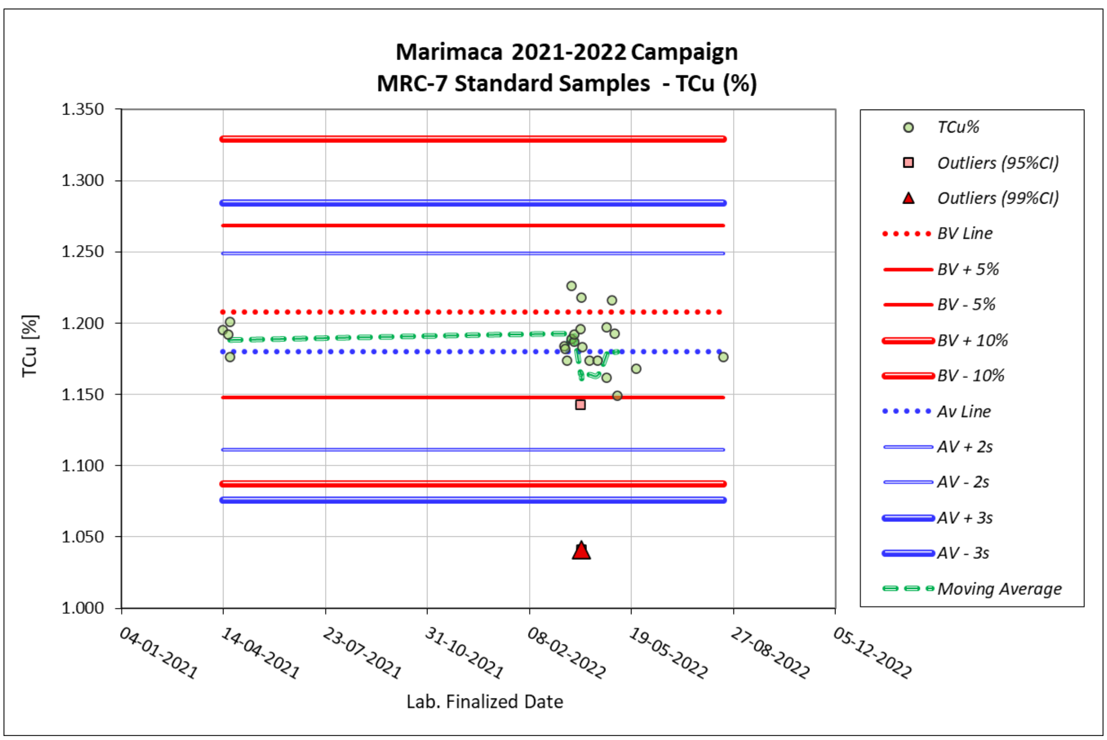


Figure 11-3: Shewart chart for material MRC-7 in the 2021-2022 campaign

In conclusion, the SRM analysis shows very good accuracy and precision, at almost all levels, with generally minor observations and some uncertainty in the case of recent DDH holes due to low coverage. NCL recommends at least doubling the total SRM coverage as well as, to the extent possible, reducing the number of reference values to 5 or less.

Duplicate Sample Analysis

Preparation (PRD) and pulp duplicate (PUD) samples were inserted consistently in every campaign, with the exception of the discovery campaign which included check samples (CHD) of pulp duplicates as the sole control measure.

NCL's duplicate review is based on the hyperbolic method (Simon, 2006). It begins by calculating the relative error (RE) of the original assay (OA) with respect to its duplicate (DA), as the absolute percentage value of 2*(OA-DA)/(OA+DA), which should generally remain below 20% for PRD pairs and 10% for PUD pairs. Next, a practical detection limit (PDL) is determined based on grade behavior near the reported detection limit (RDL), usually at a slightly higher value to represent a more realistic limit, given the reduced precision of analytical tests at lower grades. Finally, duplicate pairs are validated by plotting them against a hyperbolic function (dependent on constants calculated from the PDL and a maximum tolerable RE for each duplicate type), which acts as an acceptability boundary that compensates for higher RE at lower grades. Failed pairs should remain below 10% of all duplicate samples.

NCL's check sample review is performed via reduced major axis (RMA) regression plots and their main parameters: Coefficient of determination (R2), which should approximate 1 to be acceptable, and slope (RMAS), allowing for a bias percentage calculation (1-RMAS) which should approximate 0 to be acceptable.

Table 11-5 summarizes the duplicate analysis. Results for the 2016-2018 period are provided irrespective of campaign, as there are no major issues to point out when reviewing them separately, as detailed in NCL (2020). Table 11-6 presents the results for the pilot campaign's check samples.

Table 11-5: Duplicate analysis summary of all drilling campaigns

Period	Hole Type	Duplicate Type	Duplicate Pairs	Failed Pairs (<10%)		Average %CuT		Average Difference
				#	%	OA	DA	(<5%)
2016-2018	DDH	**PUD**	477	7	**1.50%**	0.478	0.479	**0.20%**
	RC	**PUD**	2936	58	**2.00%**	0.228	0.226	**-0.80%**
		PRD	3008	46	**1.50%**	0.224	0.224	**0.30%**
2021-2022	DDH	**PUD**	153	3	**1.96%**	0.225	0.227	**0.64%**
	RC	**PUD**	1555	37	**2.38%**	0.208	0.210	**1.08%**
		PRD	1554	71	**4.57%**	0.208	0.207	**-0.10%**

Table 11-6: Check sample analysis of 2016's pilot campaign

Duplicate Type	Duplicate Pairs	Average %CuT		Bias	R^2
		OA	DA		
CHD	240	0.816	0.819	**0.01%**	**0.99**

All drilling campaigns with duplicates show very good precision in every test performed (Table 11-5), with slightly higher fail and mean RE percentages in the 2021-2022 campaign, though still within acceptable limits. In addition, it's important to note that field duplicates (FID) haven't been considered, which means that the first split right after drilling isn't being properly controlled. To mitigate this, NCL recommends reducing the coverage of PRD and PUD samples in favor of FID samples.

The pilot drilling campaign shows very good accuracy in principle (Table 11-6), though with moderate uncertainty due to a lack of appropriate control programs accompanying check samples to the main and especially the umpire laboratory. Despite this, the strong assay grade correlation between laboratories hints at a good reproducibility.

Also, as an example, validation charts for the 2021-2022 campaign's PRD (Figure 11-4) and PUD (Figure 11-5) samples were selected for this report, due to their relevance.

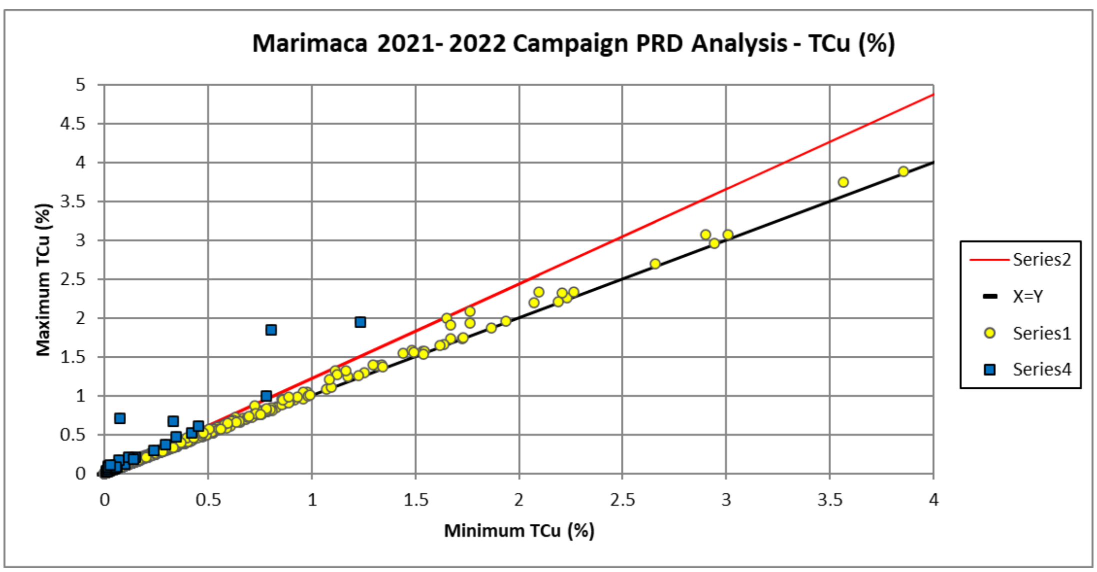


Figure 11-4: Validation plot for PRD samples in the 2021-2022 campaign – RC

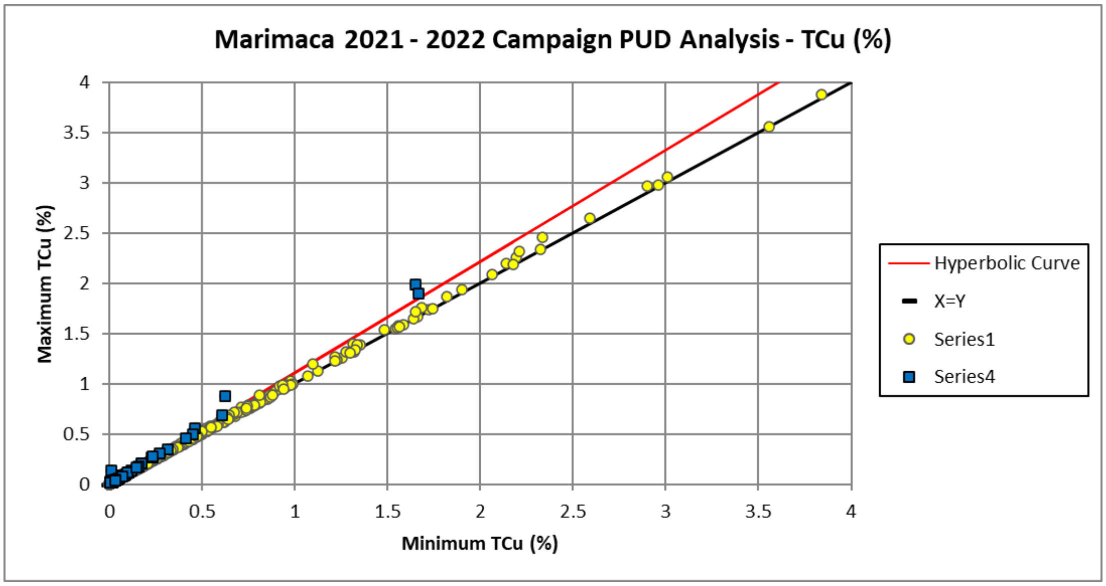


Figure 11-5: Validation plot for PUD samples in the 2021-2022 campaign

In conclusion, the duplicate analysis shows very good precision with virtually no observations, save for the limited control measures in the pilot drilling campaign, an issue moderately mitigated thanks to the strong correlation between check samples. NCL recommends considering the insertion of FID samples in future campaigns as well as reducing the excessive duplicate coverage in favor of other control types.

Blank Sample Analysis

Information received by NCL did not include a database of blank samples for the 2016-2017 campaigns, and upon questioning; MCC confirmed that they did not use this type of control. Since 2018, fine blanks (FBL) were inserted in the form of very low grade SRMs provided by Intem Ltd. (prepared in the same way as the rest of materials), with values of 0.006% (MRC-1) and 0.003% (MRC-8) CuT. These are technically not blanks because they do not have copper grades below the reported detection limit (RDL), which is usually 0.001% CuT in standard AAS tests, but NCL considers them sufficiently close to the RDL to treat them as such.

NCL's blank review begins by plotting a time series of blank assay values against an acceptability limit of 3-5 times the RDL. As with SRMs, outliers should remain below 5% of all samples. Since MCC uses slightly higher value "blanks", it seems reasonable to use the lower factor (3*RDL) and plot the acceptability limit as a window of ±3*RDL (±0.003% CuT) from the best value (BV) of the SRMs. In case of elevated outlier percentages, blank values are plotted against their corresponding previous sample values in an RMA regression, to look for a correlation that could imply systematic error and thus contamination.

Table 11-7 summarizes the blank analysis. Results for the 2016-2018 period are provided irrespective of campaign or drillhole type, as there are no major issues to point out when reviewing them separately, as detailed in NCL (2020).

Table 11-7: Blank sample analysis of all drilling campaigns

Period	Hole Type	Blank Type (SRM)	SRM Samples	SRM %CuT		Outliers (<5%)	
						BV ± 3DL	
				BV	AV	#	%
2016-2018		**MRC-1**	991	0.006	0.005	6	**0.60%**
2021-2022	RC	**MRC-1**	254	0.006	0.005	5	**1.97%**
		MRC-8	683	0.003	0.003	9	**1.32%**
	DDH	**MRC-1**	6	0.006	0.005	0	**0.00%**
		MRC-8	64	0.003	0.004	0	**0.00%**

These campaigns show very good results, with no apparent signs of contamination, and more than reasonable insertion rates. The lack of blanks in previous campaigns can be relatively mitigated by reviewing the quality controls performed and reported by the laboratory. NCL had access to the QA/QC protocols of GLQ and to the reports of AAA and both laboratories seem to have well-structured quality control measures in place, including the insertion of blank samples.

In addition, it's important to note that coarse blanks (CBL) weren't considered for any campaign, which means that potential contamination during sample preparation isn't being properly controlled. To mitigate this, NCL recommends reducing the coverage of FBL samples in favor of CBL samples.

Control charts for the 2021-2022 campaign's blanks are shown in Figures 11-6 and 11-7 due to their relevance.

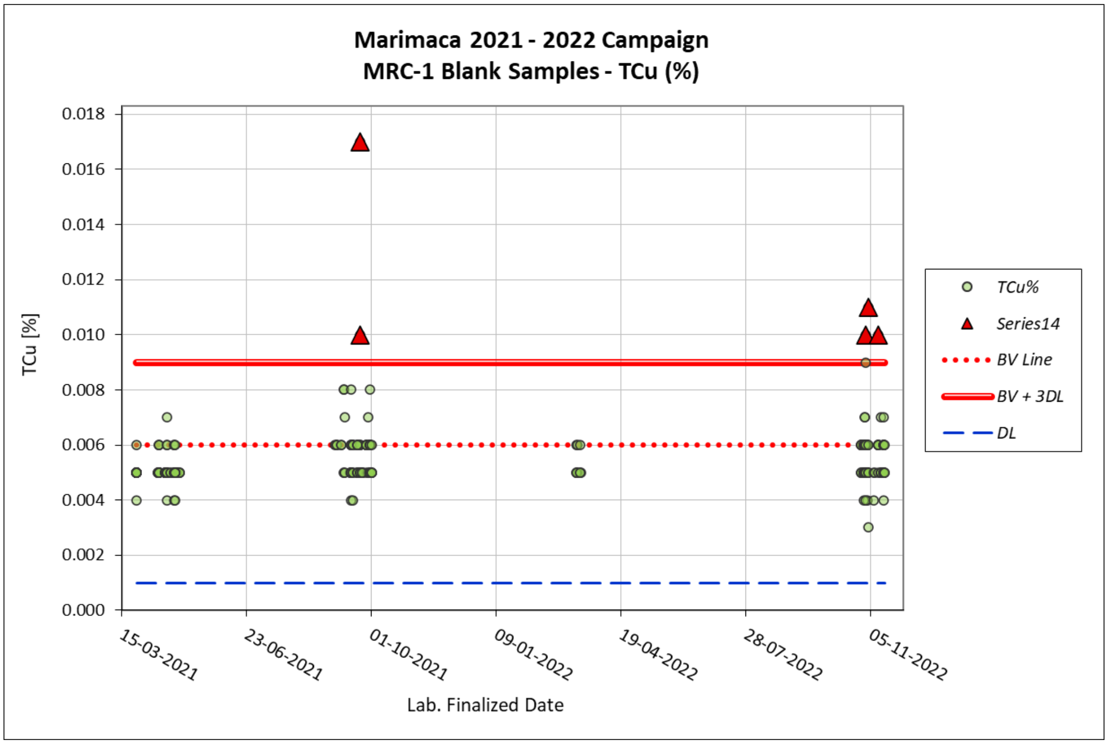


Figure 11-6: Control chart for material MRC-1 in the 2021-2022 campaign

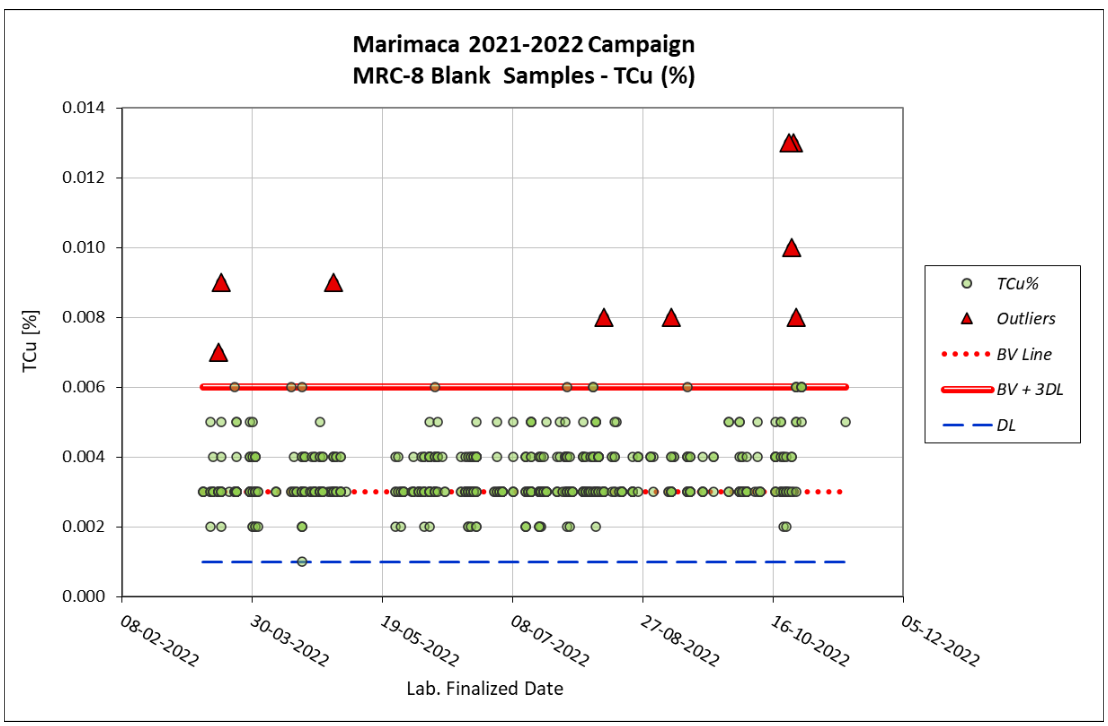


Figure 11-7: Control chart for material MRC-8 in the 2021-2022 campaign

In conclusion, the blank analysis shows no evidence of contamination. The lack of blank samples in previous campaigns, while not irrelevant, is of moderate to low concern, especially after reviewing the quality controls performed and reported by both laboratories. Adding this to the fact that the SRM and duplicate sample analyses performed very well, it seems reasonable to infer that there is a low probability of contamination in campaigns missing blanks. NCL recommends considering the insertion of CBL samples in future campaigns.

11.5 Sample Recovery

Marimaca has controlled systematically the sample recovery for both, DDH and RC drillholes, following industry standard procedures: RC by weighting the 2 meters sample obtained and, for DDH, by measuring the length of the core recovered for each drilling run and later corrected to 2 metres intervals.

The RC recoveries are measured with respect to a theoretical recovery obtained from the multiplying of the hole volume (drilling diameter based on the drilling bit) and the unitary weigth factor (2.6 t/m3).

An analysis of the sample recovery was performed by NCL, in order to identity eventual inconsistencies in this regard. The total number of registers in the sample database reaches to 70,300, from which 69,683 have grade values and only 35 have recovery equal to 0, equivalent to the 0.05% of the total population.

Average recovery for DDH samples is 97.65% and for RC samples is 91.83%. The eventual presence of any bias in relation with CuT grades and recovery was analyzed and no anomalous values detected.

NCL checked the location of these 35 samples and they are outside of the geological solids model. All samples inside the geological model have adequate recovery values, so no further action was taken in this regard. NCL consider that the recovery values obtained for DDH and RC samples are reliable and acceptable in agreement with the industry standards. The good recovery values observed are supported by the good terrain characteristics, like the no existence of underground water, the rocks quality and the good operation and control carried out by Marimaca.,

11.6 Sample Security

All drilling assay samples are collected by company personnel or under the direct supervision of company personnel. Samples from Marimaca were initially processed at the project site and shipped directly from the property to a laboratory facility for final preparation, and later, upon their return, to the laboratory for analysis.

Appropriately, qualified staff at the laboratories collect assay samples. Sample security involved two aspects: Maintaining the chain of custody of samples to prevent unnoticed contamination or mixing of samples and making active tampering as difficult as possible.

During the site visit, NCL found no evidence of active tampering or contamination of assay samples collected in the Marimaca properties.

11.7 NCL Comments

After carefully reviewing field protocols and procedures, NCL concludes that both company and laboratory personnel used care in the collection, management and assay of drill hole data, and thus has no reason to doubt the reliability of exploration and production information provided by MCC. Furthermore, an extensive review of reports and analytical results suggest that, apart from minor concerns that can be easily mitigated through NCL recommendations, the resource database used by MCC is free of apparent bias.

12 DATA VERIFICATION

12.1 Verifications by Marimaca

The exploration and evaluation work completed by MC is conducted using documented procedures and involves verification and validation of exploration and evaluation data, prior to consideration for geological modeling and Mineral Resource estimation. During drilling, experienced geologists implemented industry standard measures designed to ensure the consistency and reliability of the exploration data.

Quality control failures are investigated and appropriate actions are taken when necessary, including requesting re-assaying of certain batches of samples.

12.2 Verifications by NCL

In accordance with National Instrument 43-101, professionals under the supervision of NCL visited the Marimaca properties on December 6 -7, 2016, accompanied by Sergio Rivera, Exploration Vice president of MC. The team included Ricardo Palma, P. Eng. and Luis Oviedo P. Geo. who are qualified persons under National Instrument 43-101 NCL carried out a new site visit in August 2019, to verify the changes produced by the new drill program and in February 2022. The biggest changes were the quality of the resource because of the densification of the drilling, with a substantial increment in Measured and Indicated resources and the total volume of the resource.

During the visits, all aspects that could impact materially the integrity of the drillhole and sampling databases (core logging, sampling, and database management) were reviewed with MC staff. NCL was able to interview staff to ascertain exploration procedures and protocols.

NCL toured the Marimaca area and observed diamond and RC drill sites, collars and field status of the demarcations, and examined core from a number of drillholes, finding that the logging information accurately reflects actual core. The lithology and grade contacts checked by NCL match the information reported in the core logs.

Luis Oviedo, on behalf of NCL, reviewed the drill hole databases in 2022 for the preparation of this technical report and concluded that it is adequate to produce the block models, tonnage and grade evaluations to a satisfactory degree.

NCL also completed statistical comparisons of the block models' global grade against the informing drilling data and visually compared on plans and sections the block models against the informing samples to confirm that the estimations are generally an adequate representation of the distribution of the copper mineralization. The QP visited the properties in 2020 and 2022 where he subsequently reviewed the new data produced by MC.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Metallurgical Testing

Marimaca Copper Corp. has completed five test programs (Geomet I, II, III, IV and V) and a variability study to characterize the metallurgical response to samples collected from the Marimaca project. Tests were performed considering parameters such as: mineral subzone, agglomeration conditions, particle size, column height, irrigation rate and acid concentration in the irrigation solution.

Metallurigcal results have been consistent across metallurgical testwork phases 1-5. Results support the metallurgical performance assumptions made in the 2020 PEA (76% recovery of CuT in heap leaching and 40% for ROM leaching). For the purpose of this Resource Estimation, no new changes to the mineral processing assumptions have been made relative to the 2020 PEA and 2020 MRE. Since the 2020 PEA and 2020 MRE, Marimaca has completed the Geomet V program which inclided column tests completed at the 2020 PEA industrial operating conditions (4m column heights).

The following summarizes each of these metallurgical testing programs and their results.

13.1.1 Geomet I & II

Samples

Seven (7) samples where generated for column testing from copper mineralized zones defined during the 2016 drilling campaign. These were obtained from a matrix linking the spatial location with the mineral zones.

A portion of the samples correspond to monzodiorite (diorite with potassium feldspar) affected by an albite-chlorite-actinolite alteration; a minor part to the andesitic and dacitic dikes composition that cut the monzodiorite. Oxide mineralogy is brochantite, atacamite, chrysocolla and wad. Most of the oxide mineralized material occurs as fracture impregnation and filling.

The samples used for this testing were named: Marimet 1, Marimet 2, Marimet 3, Marimet 4, Marimet 5, Marimet 6 and Marimet 7, abbreviated as M1, M2, M3, M4, M5, M6 and M7. Table 13-1 shows the chemical characterization of each sample and a simple description of its mineralogy and location.

Analytical Procedure

In April 2017, Geomet was commissioned to start phase 1 of the initial metallurgical program, which considered 7 samples from the three aforementioned metallurgical units and whose scope included the mechanical preparation of the material, its characterization, head particle size analysis, sulphation tests, iso-pH tests, leaching tests at two crush sizes in seven columns of 6" x 1 meter in duplicate including leach residue analysis.

Based on the phase 1 results, Geomet was commissioned again in September 2017 to execute phase 2 of the metallurgical program using the same samples.

Table 13-1: Chemical and Mineralogical Characterization.

Sample	CuT (%)	CuS (%)	Solubility Ratio (RS)*(%)	AAC** (kg/t)	Mineralogical Characterization (location)
M1	0.88	0.71	80	49	Chrysocolla (Pit 2)
M2	1.47	1.17	79	32	Brochantite/atacamite > Supergene sulphide (Pit 2)
M3	0.49	0.32	65	53	Wad dominant (Pit 2)
M4	0.81	0.71	87	39	Chrysocolla (Pit 1)
M5	1.14	0.97	85	39	Brochantite/atacamite (Pit 1)
M6	0.62	0.47	75	30	Wad dominant > supergene sulphide (Pit 1)
M7	0.58	0.40	69	23	Mixed primary Sulphides-supergene > oxide (High Pit)

*Copper Solubility Ratio or RS defined as the CuS over CuT ratio.

**Analytical Acid Consumption assay: 10 g of sample in 100 mL of 1N sulphuric acid solution for 2 hours.

Crush size

The crush size for these tests was 90% below ½". Figure 13-1 shows the particle size distribution obtained for each sample.

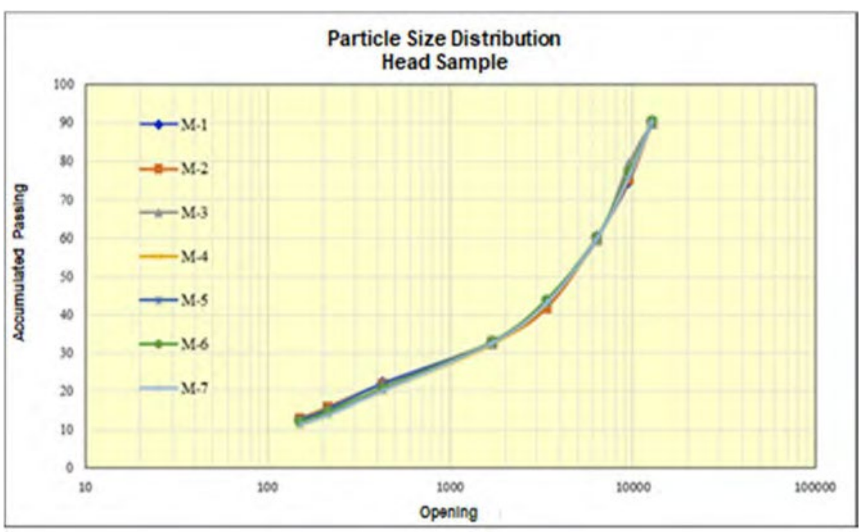


Figure 13-1: Particle Size Distribution

Note: Figure prepared by Marimaca, 2020.

Irrigation Rate

The initial tests were performed with an irrigation rate close to 10 L/h/m2, the new tests were adjusted to a lower rate, approximately 8 L/h/m2, trying to achieve a higher copper concentration. For the case of the initial tests, 9.5 gpl acid was used, and in the new tests a sulphuric acid concentration around 10.5 gpl was used.

Acid in Agglomeration

In the first 1 m height tests, almost all columns reached a deficiency of acid application, with the effluent solution having too high pH to leach the copper. Consequently, a new series of sulphation tests were run to better define the amount of acid to be added to each sample in the agglomeration stage.

Each sample, M1 to M7, was subjected to sulphation tests using three different acid doses of low-, mid- and high-dose.

Column Height

As stated above, most tests were performed at different heights, between 1.6 m and 3 m. Table 13-2 shows the height for each sample in the metallurgical column test executed.

Table 13-2: Column Height per Sample

Sample	M1	M2	M3	M4	M5	M6	M7
Column Height (m)	2.7	2.2	1.6	3.0	2.5	3.0	2.8

Leaching Time, Leaching Ratio and Acid Consumption

Initially, it was determined to use a fixed leach solution ratio of at least 2.5 m3/t to compensate for the variable column height.

However, all tests were terminated between 64 and 66 days, hence the leaching ratio varied for each one of the columns due to the varying height. Therefore, the overall acid consumption, measured in kg/t, was variable for each test, not only for acid addition during the agglomeration stage, but also because of the excess volume of leaching solution passed per tonne of treated material in the lower height columns.

Main Results Sulphation Tests

Table 13-3 show the sulphation test results and graphs for the seven samples.

Table 13-3: M1 to M7 Sulphation Tests Results.

Marimet-1 P90 1/2"			
Mass (kg)	2.0	2.0	2.0
CuT grade (%)	0.87	0.87	0.87
CuT (g)	17.40	17.40	17.40
Acid dosage (kg/t)	25	28	31
Washing volume (L)	3	3	3
H+ (gpl)	0.00	0.00	0.00
pH	2.15	2.12	2.10
Cu (gpl)	2.59	2.80	2.93
Dissolved Cu (g)	7.77	8.40	8.78
CuT Extraction (%)	44.66	48.28	50.45
Added acid (g)	52.08	58.33	64.58
Acid consumption (kgH+/kgCu)	6.70	6.94	7.36

Marimet-2 P90 1/2"			
Mass (kg)	2.0	2.0	2.0
CuT grade (%)	1.50	1.50	1.50
CuT (g)	30.00	30.00	30.00
Acid dosage (kg/t)	25	30	35
Washing volume (L)	3	3	3
H+ (gpl)	0.00	0.00	0.00
pH	2.33	2.25	2.26
Cu (gpl)	2.87	3.32	3.39
Dissolved Cu (g)	8.62	9.97	10.16
CuT Extraction (%)	28.72	33.22	33.86
Added acid (g)	52.08	62.50	72.92
Acid consumption (kgH+/kgCu)	6.04	6.27	7.18

Marimet-3 P90 1/2"			
Mass (kg)	2.0	2.0	2.0
CuT grade (%)	0.45	0.45	0.45
CuT (g)	9.00	9.00	9.00
Acid dosage (kg/t)	25	30	35
Washing volume (L)	3	3	3
H+ (gpl)	2.10	2.38	2.70
pH	2.05	1.92	1.91
Cu (gpl)	1.03	1.08	1.14
Dissolved Cu (g)	3.09	3.24	3.42
CuT Extraction (%)	34.29	35.96	38.02
Added acid (g)	52.08	62.50	72.92
Acid consumption (kgH+/kgCu)	16.88	19.31	21.31

Marimet-4 P90 1/2"			
Mass (kg)	2.0	2.0	2.0
CuT grade (%)	0.85	0.85	0.85
CuT (g)	17.00	17.00	17.00
Acid dosage (kg/t)	22	25	28
Washing volume (L)	3	3	3
H+ (gpl)	0.00	0.00	0.00
pH	2.17	2.15	2.14
Cu (gpl)	2.15	2.38	2.51
Dissolved Cu (g)	6.46	7.13	7.54
CuT Extraction (%)	38.01	41.93	44.33
Added acid (g)	45.83	52.08	58.33
Acid consumption (kgH+/kgCu)	7.09	7.31	7.74

Marimet-5 P90 1/2"			
Mass (kg)	2.0	2.0	2.0
CuT grade (%)	1.16	1.16	1.16
CuT (g)	23.20	23.20	23.20
Acid dosage (kg/t)	22	25	28
Washing volume (L)	3	3	3
H+ (gpl)	0.00	2.43	1.75
pH	2.12	2.07	1.98
Cu (gpl)	3.17	3.28	3.29
Dissolved Cu (g)	9.52	9.83	9.86
CuT Extraction (%)	41.04	42.39	42.49
Added acid (g)	45.83	52.08	58.33
Acid consumption (kgH+/kgCu)	4.81	5.30	5.92

Marimet-6 P90 1/2"			
Mass (kg)	2.0	2.0	2.0
CuT grade (%)	0.61	0.61	0.61
CuT (g)	12.20	12.20	12.20
Acid dosage (kg/t)	17	20	23
Washing volume (L)	3	3	3
H+ (gpl)	1.75	1.89	2.29
pH	2.02	1.92	1.81
Cu (gpl)	1.53	1.67	1.67
Dissolved Cu (g)	4.59	5.00	5.01
CuT Extraction (%)	37.61	40.96	41.09
Added acid (g)	35.42	41.67	47.92
Acid consumption (kgH+/kgCu)	7.72	8.34	9.56

Marimet-7 P90 1/2"			
Mass (kg)	2.0	2.0	2.0
CuT grade (%)	0.63	0.63	0.63
CuT (g)	12.60	12.60	12.60
Acid dosage (kg/t)	17	20	23
Washing volume (L)	3	3	3
H+ (gpl)	1.30	1.44	1.73
pH	2.04	1.96	1.89
Cu (gpl)	1.25	1.27	1.31
Dissolved Cu (g)	3.74	3.80	3.94
CuT Extraction (%)	29.70	30.20	31.24
Added acid (g)	35.42	41.67	47.92
Acid consumption (kgH+/kgCu)	9.47	10.95	12.17

The best sulphation results, metallurgically speaking, are highlighted in yellow and green. The goal of this test is to add sufficient acid, but not excessive, to achieve a pH of 1.8 to 2.1 in the wash water from the agglomerates.

For samples with the same or similar CuT grade, the sulphation result, at the same particle size, is a clear indicator of the acid soluble copper content (CuS).

The acid addition for each sample to add in agglomeration, resulting from these sulphation tests, is shown in Table 13-4.

Table 13-4: Acid Addition in Agglomeration per Sample.

Sample	M1	M2	M3	M4	M5	M6	M7
Added Acid (kg/t)	28	32	27	27	25	21	21

Column Leaching Tests

Table 13-5 shows the general results of each of the tests for the samples M1 to M7 with the 90% -½" particle size distribution.

Table 13-5: Column Leaching Results Summary.

LEACHING SUMMARY													
ID	Sample	Irrigation Rate (L/h/m²)	Height (m)	OFF Leach. Ratio	Head Grade (%)		Results						
					CuT	CuS	Cu Extraction (%)				Account	Acid Consumption (kg/t)	
							RS	AQ Head	Calc. Head	Final Tail)	(%	Gross	Net or Gangue
Col-29	Marimet-1	8	2.7	3.21	0.88	0.707	80.4	83.6	83.5	83.4	100.2	59.8	48.4
Col-30	Marimet-1	8	2.7	3.15	0.88	0.707	80.4	79.4	82.7	83.4	96.1	60	49.3
Col-31	Marimet-2	8	2.2	3.19	1.47	1.169	79.6	71.5	76.4	77.9	93.5	70.1	53.9
Col-32	Marimet-2	8	2.2	3.21	1.47	1.169	79.6	70.4	76.2	77.9	92.5	69.8	53.8
Col-33	Marimet-3	8	1.6	4.46	0.49	0.318	65.3	68.6	72.6	74.1	94.5	63.7	58.5
Col-34	Marimet-3	8	1.7	4.41	0.49	0.318	65.3	70.5	72.6	73.3	97.2	65.7	60.4
Col-35	Marimet-4	8	3	2.53	0.81	0.706	87.3	77	81.6	82.6	94.4	57	47.4
Col-36	Marimet-4	8	3	2.54	0.81	0.706	87.3	75.9	80.7	81.9	94.1	56.7	47.2
Col-37	Marimet-5	8	2.5	2.91	1.14	0.966	85	78.8	84.2	85.2	93.6	53.2	39.4
Col-38	Marimet-5	8	2.5	2.91	1.14	0.966	85	80.5	83.9	84.5	96	53.7	39.7
Col-39	Marimet-6	8	3	2.61	0.62	0.468	75.1	75.1	76.9	77.5	97.6	46.7	39.5
Col-40	Marimet-6	8	3	2.62	0.62	0.468	75.1	73.3	77.2	78.3	95	46.8	39.8
Col-41	Marimet-7	8	2.8	2.78	0.58	0.398	68.1	62.6	68.5	71.2	91.5	48.8	43.2
Col-42	Marimet-7	8	2.8	3.05	0.58	0.398	68.1	62.8	71.2	74.6	88.3	47.7	42.1

Columns have acceptable metallurgical accounting results with half of them achieving 100+- 5% on a CuT head assay versus CuT "calculated" head basis. The rest achieved 100+-10% or better. Head and leached residue sample pulps where sent for check-assaying with acceptable results.

Sulphuric Acid Consumption

All the Geomet II columns (Table 13-5) and some of iso-pH tests (Table 13-6) reached an acid consumption higher than the Analytic Acid Consumption (AAC) of the sample, which is usually referred as the maximum acid consumption achievable in a typical leaching process as is performed with samples below #150 Tyler mesh at a higher acid content (50 gpl acid).

This high acid consumption may be partially explained due to the fact that the leaching solution does not have any impurities present, such as Fe, Al and Mg, which, if present in the leaching solution, might reduce their dissolution from the mineral.

Table 13-6: Geomet I Iso-pH Test.

Sample	Head Grade				Iso pH Test Conditions		Iso pH Test Results		
	CuT %	CuS %	Soluble. CuS/CuT %	AAC kg/t	pH	Time h	CuT Recovery	Gross H^+ Cons. kg/t	Net H^+ Cons. kg/t
M1	0.937	0.732	78	49	1.5	48	85	44	32
M2	1.502	1.133	75	32	1.5	48	82	64	44
M3	0.456	0.272	60	53	1.5	48	66	42	37
M4	0.851	0.715	84	39	1.5	48	88	50	38
M5	1.157	0.977	84	39	1.5	48	86	35	19
M6	0.622	0.436	70	30	1.5	48	73	29	22
M7	0.626	0.402	64	23	1.5	48	65	44	37

Copper Extraction and Acid Consumption Profiles

The CuT extraction rate and profiles for the tested samples are typical of acid soluble oxide minerals. The initial dissolution, with most of the acid added in agglomeration, is rapid, followed by a slower leaching residual mineral.

Figure 13-2 also shows that M1, M2 and M5, the samples with the highest acid consumption, continues to consume acid almost linearly and continues beyond the 1 m3/t target leach ratio.

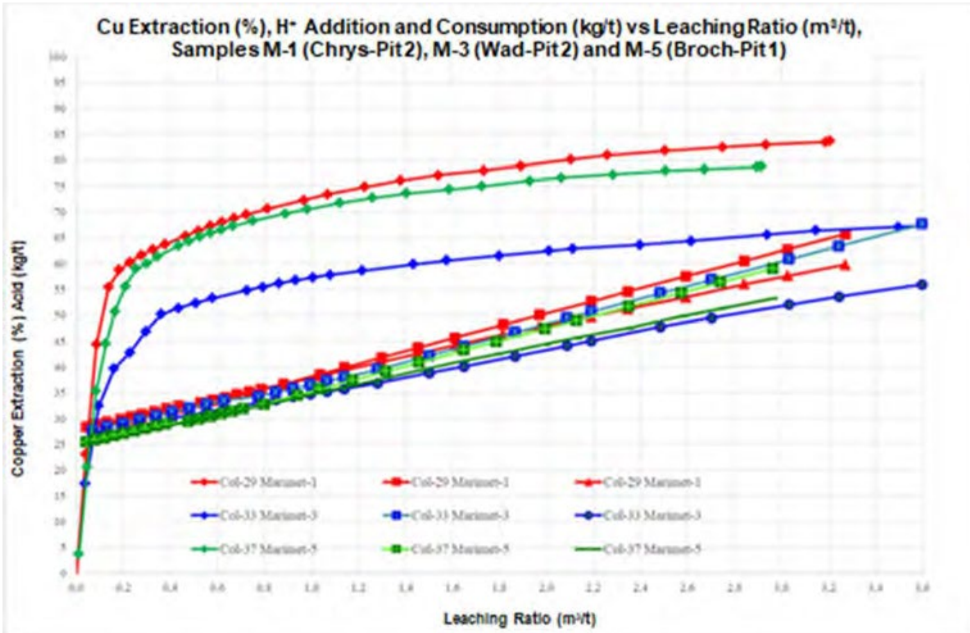


Figure 13-2: Cu Extraction (%), Starting H+ Addition in Agglomeration and Consumption (kg/t) vs Leaching Ratio (m2/t), M-1, M-3 and M-5.

Note: Figure prepared by Marimaca Copper, 2020.

Figure 13-3 shows that the M2 and M4 samples continue to consume acid almost linearly and continues beyond the 2 m3/t target leach ratio.

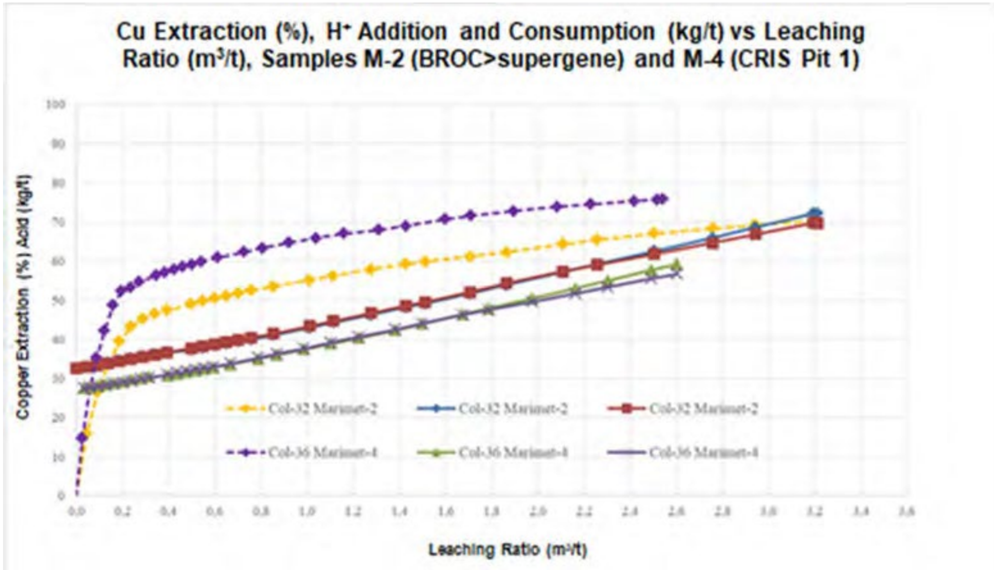


Figure 13-3: Cu Extraction (%), Starting H+ Addition in Agglomeration and Consumption (kg/t) vs Leaching Ratio (m2/t), M-2 and M-4.

Note: Figure prepared by Marimaca Copper, 2020.

Figure 13-4 shows that the samples which have a lower consumption than the others, M6 and M7, once reaching 1 m3/t of solution application, start showing un-reacted free acid, which is similar to samples for all mineral types.

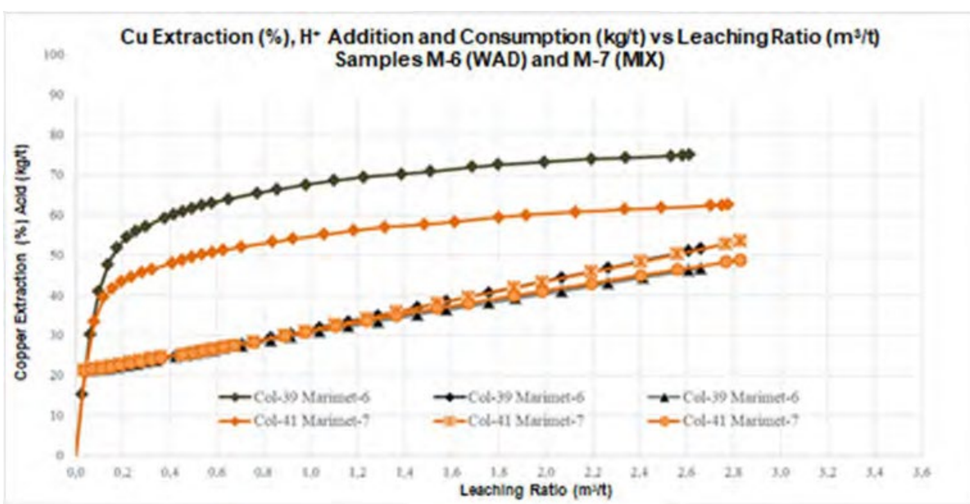


Figure 13-4: Cu Extraction (%), Starting H+ Addition in Agglomeration and Consumption (kg/t) vs Leaching Ratio (m2/t), M-6 and M-7.

Note: Figure prepared by Marimaca, 2020.

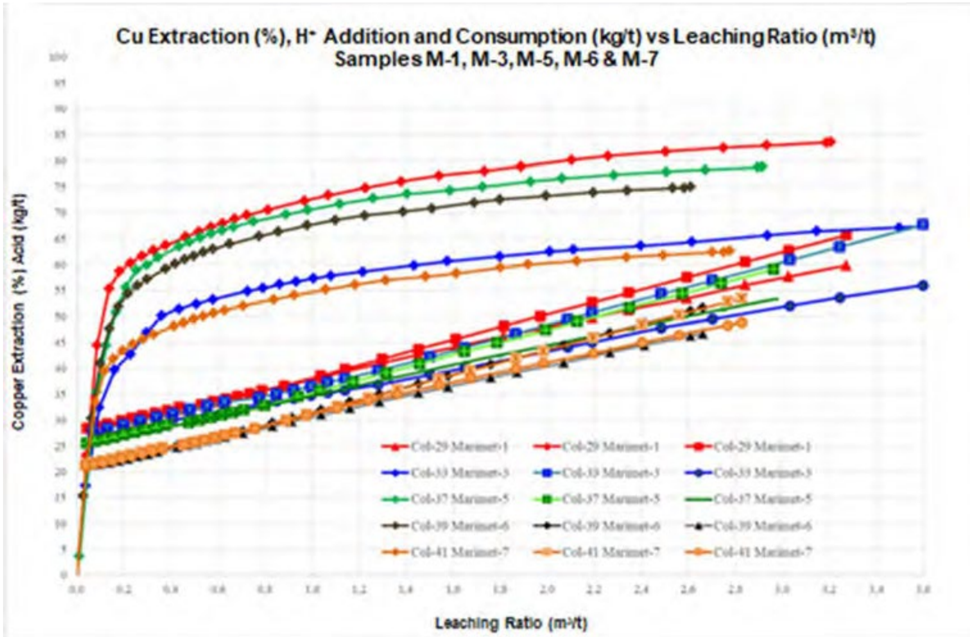


Figure 13-5: Cu Extraction (%), Starting H+ Addition in Agglomeration and Consumption (kg/t) vs Leaching Ratio (m2/t), M-1, M-3, M-5, M-6 and M-7

Note: Figure prepared by Marimaca Copper, 2020.

Conclusions

The recoveries and the acid consumption that may be estimated from the performed tests, for the indicated copper grades, are as follows:

- The M1 sample, corresponding to a CuT grade between 1.0% and 0.8% and a mineral-type description as Chrysocolla, has a recovery of 77% and a net (Gangue) acid consumption of 42 kg/t.
- The M3 sample, corresponding to a CuT grade between 0.4% and 0.5% and a mineral-type description as Wad -Chrysocolla – Brochantite/Atacamite, has a recovery of 62% and a net (Gangue) acid consumption of 52 kg/t.
- The M5 sample, corresponding to a CuT grade between 1.2% and 1% and a mineral- type of Brochantite/Atacamite, has a recovery of 76% and a net (Gangue) acid consumption of 37 kg/t.
- The M6 sample, corresponding to a CuT grade between 0.6% and 0.43% and a mineral-type of Wad and Supergene Sulphide, has a recovery of 70% and a net (Gangue) acid consumption of 38 kg/t.
- The M7 sample, corresponding to a CuT grade between 0.6% and 0.5% and a mineral-type of Mix of Primary Sulphide and Supergene-Oxides, has a recovery of 58% and a net (Gangue) acid consumption of 40 kg/t.
- The M2 sample, corresponding to a CuT grade between 1.5% and 1.3% and a mineral-type of mainly Brochantite/Atacamite with minor Supergene Sulphide, but which has a

high sulphuric acid consumption, has a recovery of 67% and a net (Gangue) acid consumption of 50 kg/t.

The leaching kinetics for all samples is fast, at one-third of the leaching cycle achieving 70% to 80% recovery.

The expected net (Gangue) acid consumption is estimated to be between slightly below 40 kg/t up to 60 kg/t.

13.1.2 Geomet III

Samples

In Geomet III the samples tested were of a higher proportion of brochantite/atacamite and chrysocolla mineral-type as these two mineral-types will be treated in the first years from the near-surface (5 to 10 meters) mining. Thirty-seven (37) composites where obtained from 13 drill hole locations - 10 were Reverse Circulation (RC) and 3 were from Diamond Drill Hole (DDH) core.

Test Description

This test program included the Head Chemical Characterization of the 37 composites (CuT, CuS, FeT, Al, Mg, CAA, CO3, AlS, FeTS and MgS) and the completion of 42 iso-pH 1.5 tests, 37 of them at 48hrs and 5 at 72 hrs.

Main Results

The bottle-roll test results are shown in Table 13-7. The values in red were re-assayed with similar results. The new values are shown in the table. These corrected values for samples M-21, M-25 and M-35 are not well-balanced yet according to related data.

Regarding copper recovery, except for M-21, M-22 and M-23, over 100% of the soluble copper ratio (acid soluble assay) was recovered. This is consistent with this trend in the Geomet II column testing for the oxide mineral-type.

Table 13-7: Iso-pH tests, CuT recovery and acid consumption

Sample ID	Leach Time (h)	CuT AQ (%)	CuS (%)	Sol. Ratio (%)	Copper Recovery			Avg CuT Rec. (%)	Ratio Leach Rec./CuS	Acid Consumption		Head	
					A.H. (%)	C.H. (%)	F.T. (%)			Gross (kg/t)	Net (kg/t)	CO_3 (%)	CAA (kg/t)
M-4	48	1.01	0.81	80.00	83.3	85.2	85.6	84.7	1.06	35.8	22.9	0.15	28.8
M-5	48	0.74	0.48	64.73	72.7	75.4	76.2	74.8	1.16	30.4	22.1	0.15	35.5
M-6	48	0.37	0.26	70.05	79.8	82.8	83.4	82.0	1.17	44.3	39.8	1.10	48.1
M-7	48	0.87	0.55	63.35	74.6	75.0	75.2	74.9	1.18	33.3	23.3	0.05	37.8
M-8	48	1.66	1.36	81.64	83.5	85.0	85.3	84.6	1.04	40.8	19.4	0.05	40.2
M-9	48	1.13	0.87	77.10	82.4	85.6	86.1	84.7	1.10	40.3	26.0	0.45	50.3
M-10	48	0.67	0.53	79.54	83.9	87.5	88.0	86.5	1.09	39.9	31.2	0.40	37.5
M-10	72	0.67	0.53	79.54	87.0	88.0	88.2	87.7	1.10	42.3	34.0	0.40	37.5
M-11	48	0.61	0.47	76.78	82.6	84.1	84.4	83.7	1.09	39.4	31.6	0.60	34.6
M-12	48	1.05	0.96	90.93	93.4	93.3	93.3	93.3	1.03	42.2	27.0	0.10	48.2
M-13	48	0.65	0.56	86.27	87.4	89.2	89.5	88.7	1.03	33.5	24.8	0.40	52.2
M-13	72	0.65	0.56	86.27	88.4	90.6	90.8	89.9	1.04	40.4	32.4	0.40	52.2
M-1	48	0.50	0.43	85.03	83.2	83.9	84.1	83.7	0.98	45.3	39.6	0.82	36.8
M-2	48	0.46	0.37	81.08	89.8	85.8	85.2	86.9	1.07	44.7	38.8	0.86	37.5
M-3	48	0.62	0.48	77.56	81.2	83.5	84.0	82.9	1.07	47.0	40.1	1.05	35.3
M-14	48	1.77	1.63	91.90	95.3	96.0	96.1	95.8	1.04	75.9	52.7	1.90	83.0
M-15	48	1.32	1.09	82.39	93.7	90.4	90.1	91.4	1.11	71.7	54.2	2.48	69.2
M-16	48	0.83	0.63	75.55	74.6	77.4	78.2	76.7	1.02	64.7	56.4	2.62	70.7
M-17	48	0.38	0.28	74.84	78.5	81.3	81.9	80.5	1.08	81.9	77.8	3.86	75.0
M-17	72	0.38	0.28	74.84	80.5	83.8	84.4	82.9	1.11	85.3	81.0	3.86	75.0
M-18	48	0.78	0.68	87.42	87.0	89.7	90.0	88.9	1.02	39.3	29.6	0.32	61.1
M-19	48	0.54	0.45	82.54	78.6	81.8	82.5	81.0	0.98	57.7	52.2	1.65	58.1
M-20	48	1.14	0.90	78.78	78.8	80.4	80.7	80.0	1.01	78.1	65.7	2.57	68.4
M-21	48	0.82	0.72	88.46	86.0	88.1	88.3	87.5	0.99	**18.5**	**8.8**	**4.34**	30.5
M-22	48	1.18	1.09	92.83	88.6	91.3	91.6	90.5	0.97	66.7	52.4	2.13	44.5
M-23	48	1.65	1.58	95.62	93.4	94.1	94.1	93.9	0.98	97.7	76.9	3.96	86.5
M-23	72	1.65	1.58	95.62	91.4	95.1	95.3	93.9	0.98	104.6	83.9	3.96	86.5
M-24	48	1.62	1.41	86.82	89.4	89.9	90.0	89.8	1.03	51.9	32.0	0.31	37.3
M-25	48	0.40	0.31	77.70	85.1	82.0	81.3	82.8	1.07	33.0	28.1	0.59	**18.1**
M-26	48	1.05	0.87	82.83	84.6	82.0	81.4	82.7	1.00	41.8	29.1	0.36	49.4
M-27	48	0.54	0.43	80.36	83.1	81.7	81.4	82.1	1.02	35.4	29.2	0.63	33.2
M-28	48	0.43	0.33	78.32	80.8	79.4	79.0	79.7	1.02	43.1	38.2	1.37	38.9
M-29	48	0.57	0.50	88.88	91.6	87.6	87.0	88.7	1.00	60.2	52.9	1.97	46.8
M-30	48	0.85	0.62	73.90	81.7	85.2	85.8	84.2	1.14	48.5	39.2	0.20	38.6
M-31	48	0.59	0.36	62.26	77.4	78.6	78.9	78.3	1.26	32.5	26.4	0.58	38.9
M-32	48	0.72	0.52	72.55	84.1	82.4	82.0	82.8	1.14	40.0	31.6	0.74	27.0
M-33	48	0.47	0.34	71.52	78.4	77.4	77.1	77.6	1.09	48.1	43.0	1.71	71.0
M-34	48	0.76	0.57	74.71	80.9	80.2	80.0	80.4	1.08	51.6	42.7	1.66	41.8
M-35	48	1.04	0.61	58.81	73.9	72.1	71.5	72.5	1.23	46.2	35.5	0.74	**12.3**
M-35	72	1.04	0.61	58.81	70.3	71.2	71.5	71.0	1.21	52.3	42.1	0.74	**12.3**
M-36	48	0.42	0.34	80.79	85.0	81.5	80.8	82.4	1.02	59.1	54.1	2.16	46.1
M-37	48	1.84	1.56	84.63	89.7	86.2	85.6	87.2	1.03	79.8	56.8	2.39	71.2

Note: Sol. Ratio = Soluble ratio, Rec = Recovery

Conclusions

The samples tested extracted 4 percentage points more copper than their copper solubility ratio. On average, the total Cu extraction was 84.13% and the average solubility ratio was 79.4%. It can be inferred therefore that under the test conditions a fraction of the acid insoluble copper was dissolved. The net (Gangue) acid consumption averaged 39.3 kg/t for the 37 composites.

13.1.3 Geomet IV

The Phase 4 metallurgical test work program, completed in September 2020, builds upon the results received in Phases 1, 2 and 3 testing programs. This phase was designed to be broader in its coverage of the metallurgical response of Marimaca, providing significantly more detail with respect to certain mineralisation sub zones and addressing some aspects of variability across the deposit.

Composite samples were taken from the following updated mineral subzones:

- Brochantite / Atacamite;
- Chrysocolla;
- Copper Wad;
- Mixed; and
- Enriched

Each zone has different copper mineral species and, it was noted in the tests conducted in the Phase 3 program, the overall leaching recovery exceeded the acid solubility ratio across the samples. Assessing the leaching characteristics of each subzone, and their true leaching potential, is an important step in developing a robust geo-metallurgical model, which considers variability across the deposit and provides data to optimize future design.

Tests undertaken in Phase 4 included:

- Head grade characterization, with sequential copper analysis
- Particle size characterization
- Sulphation test
- 1.5 iso-pH test, with and without seawater
- Acid and chloride leaching tests in 30cm mini-columns
- 1.5m columns tests
- ROM leaching in 1m^3 iso containers of a low-grade wad sample with minor presence of chrysocolla, atacamite and secondary sulphides.

These tests were carried out by Geomet S.A., a well known, ISO 9001 certified, Chilean laboratory with considerable experience in metallurgical programs for copper deposits in Chile.

Geomet IV Mini-Column Testing Results

Material from 15 composite samples, taken from across the Marimaca deposit, were subjected to 30cm column leach tests to identify total recovered copper and total acid consumption as shown on Figure 13-6. Several different testing parameters were used, including agglomerating with and without NaCl. The results were very favourable, indicating strong recoveries and relatively fast leach kinetics across all samples, relative to the acid soluble copper ratios for the samples. Virtually all samples recovered in excess of the acid solubility ratios, in the case of the Mixed mineral sub-zone, quite materially.

Of note, numerous samples from the brochantite, chrysocolla and copper wad zones observed total copper recoveries exceeding the calculated leaching potential of the samples. This is due to black oxides in these zones, which are acid soluble but have slower leach kinetics and, therefore, are not detected in the acid soluble copper test.

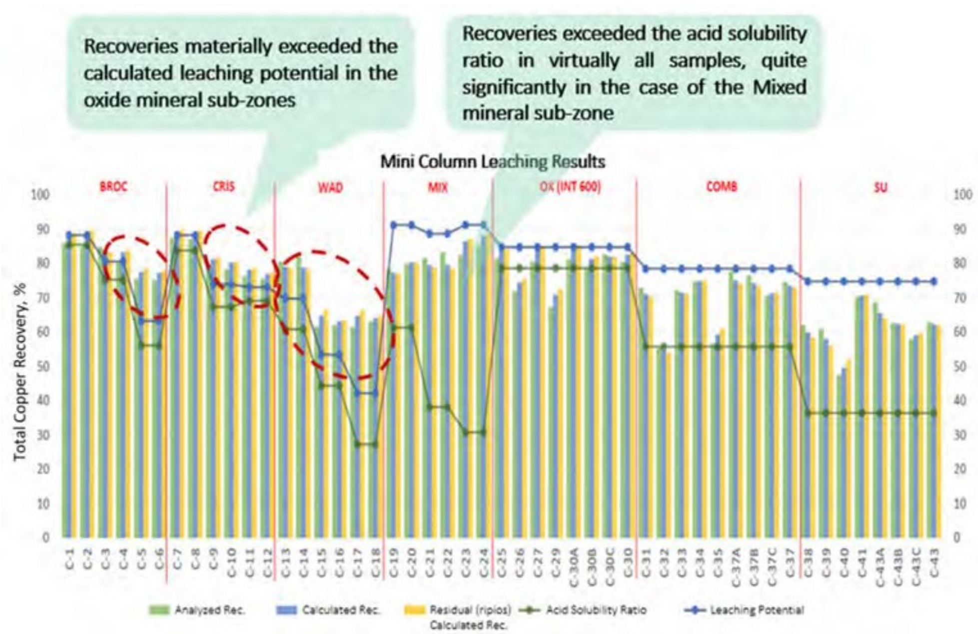


Figure 13-6: Mini-columns Total Copper Recoveries.
Note: Figure prepared by Marimaca Copper, 2020.

Geomet IV 1.5 meters Column Testing Results

Testing was completed on three composite samples taken from a variety of areas across the Marimaca deposit. A total of four 1.5 m columns were completed. For Oxide and Combined samples, no additional NaCl was added; for the Combined and Sulphide materials, 15 kg/t of NaCl was added during agglomeration.

Again, the results were favourable, with relatively fast leach kinetics and three of the four columns achieving total copper recoveries in excess of 70% within 60 days (Figure 13-7). One sample, which comprised primarily oxides, which are the dominant copper bearing mineral species in the deposit, reached recoveries exceeding 80% within approximately 40 days.

It was noted that there is a linear relationship between time and acid consumption (Figure 13-8), and that a higher material height produced a lower specific acid consumption while still achieving the recovery rates observed in the testing program. This should allow further optimization of design to lower overall acid recoveries.

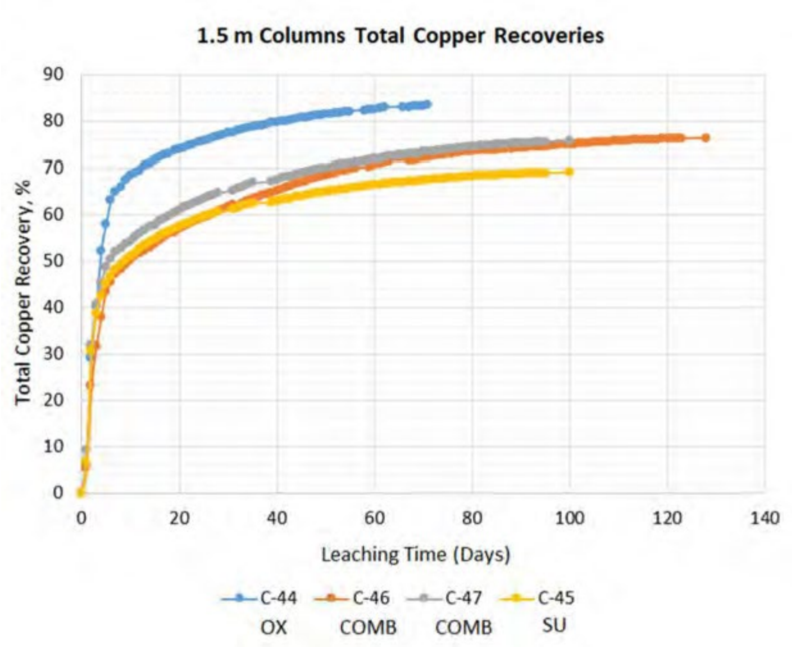


Figure 13-7: 1.5 meters Columns Total Copper Recoveries.
Note: Figure prepared by Marimaca Copper, 2020.

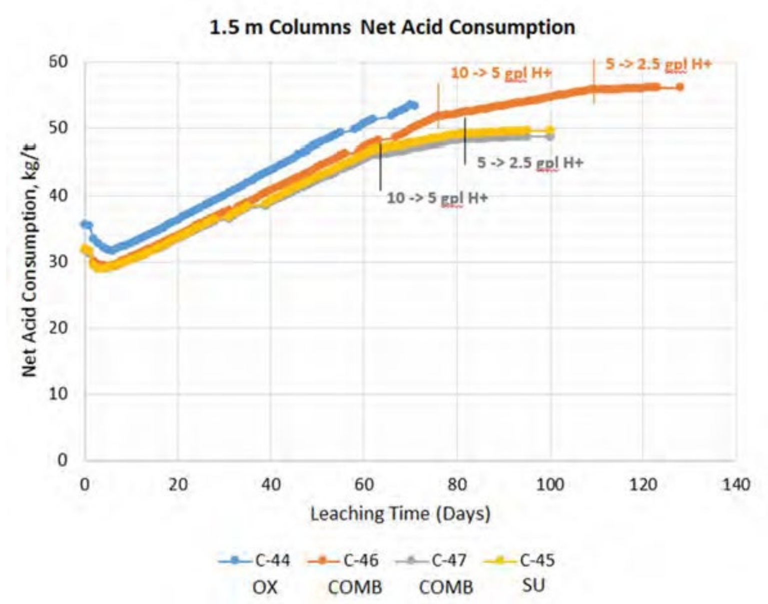


Figure 13-8: 1.5 meters Columns Net Acid Consumption.

Note: Figure prepared by Marimaca Copper, 2020.

Conclusions

The Phase 4 metallurgical testing program utilized composite samples from all defined mineral sub-zones at Marimaca and builds upon results from Phases 1,2 and 3 testing. Sampling was broadened across the deposit and the study provided and initial assessment of variability across the deposit. Results support the recovery assumptions made in the 2020 PEA of 75.7% recovery of total copper for heap leach and 40% for the ROM leach. Recoveries exceeded the acid soluble component (CuS) of total copper in virtually all samples, some by significant margins, indicating a larger proportion of the copper is acid soluble and may be recovered in heap leaching. The use of seawater was also confirmed to be compatible with heap leaching process with no reduction in recovery and some increases in recovery noted in certain mineral sub-zones.

Variability Study

The Variability Program was designed to investigate the variability of the Marimaca ore body by assessing copper recovery, acid consumption and impurity dissolution characteristics within each mineralogical domain (ore type).

Program Overview

A total of 412 variability composite samples were selected and analyzed for the Program. Samples were selected using spatial criteria across the PEA open-pit mineable resource area, subdivided into macroblocks of 75m x 75m x 25m (Figure 13-9). A total of 4,491 RC samples were processed through rigorous variability criteria screening and formed the basis for the 412 composites.

The program design consisted of three components:

- Chemical Head Characterization.
  - Characterization included sequential copper analysis, leaching potential, soluble impurities, analytic acid consumption, and others
- Iso-pH Bottle Roll Tests
  - Conducted under constant pH and Cl conditions to examine the correlation to the analytical acid consumption (AAC) diagnostic testing method, improve the acid consumption modeling, and review copper recovery relative to leaching potential
- 3 Acid Level Sensitivity Bottle Roll Test
  - Conducted to examine copper recovery and acid consumption sensitivity relative to acid concentration

These tests were carried out by Geomet S.A., a well known, ISO 9001 certified, Chilean laboratory with considerable experience in metallurgical programs for copper deposits in Chile.

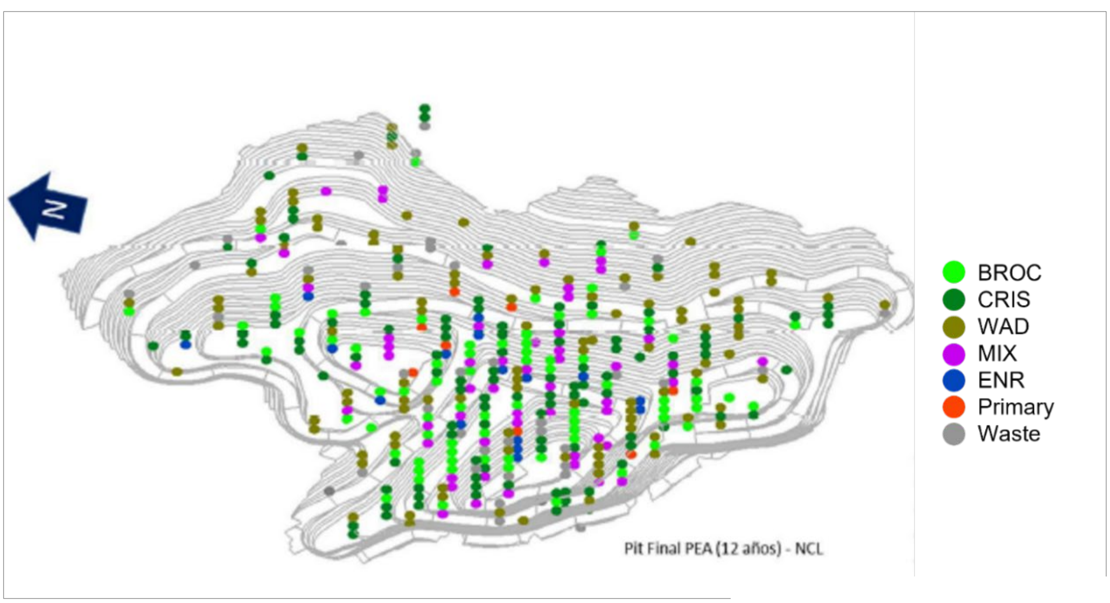


Figure 13-9: Variability Study Composite Sample Locations and Mineral Subzones

Results

Analytical Acid Consumption (AAC)

The average total AAC of the sample population was 40.79 kg/t with <10% of the samples returning an AAC of >60 kg/t. Green oxides tend to have a higher acid consumption than the balance of the mineral subzones (45-50 kg/t relative 30-40 kg/t). This difference is explained by marginal incremental carbonate content relative to WAD, MIX and ENR. All mineral subzones present low AAC variability and the same consistency was observed across the additional soluble impurities tested as part of the Analytical Acid Consumption assay (Fe, Al, Mg, Mn). In general, uniform behavior is observed within the mineral subzones.

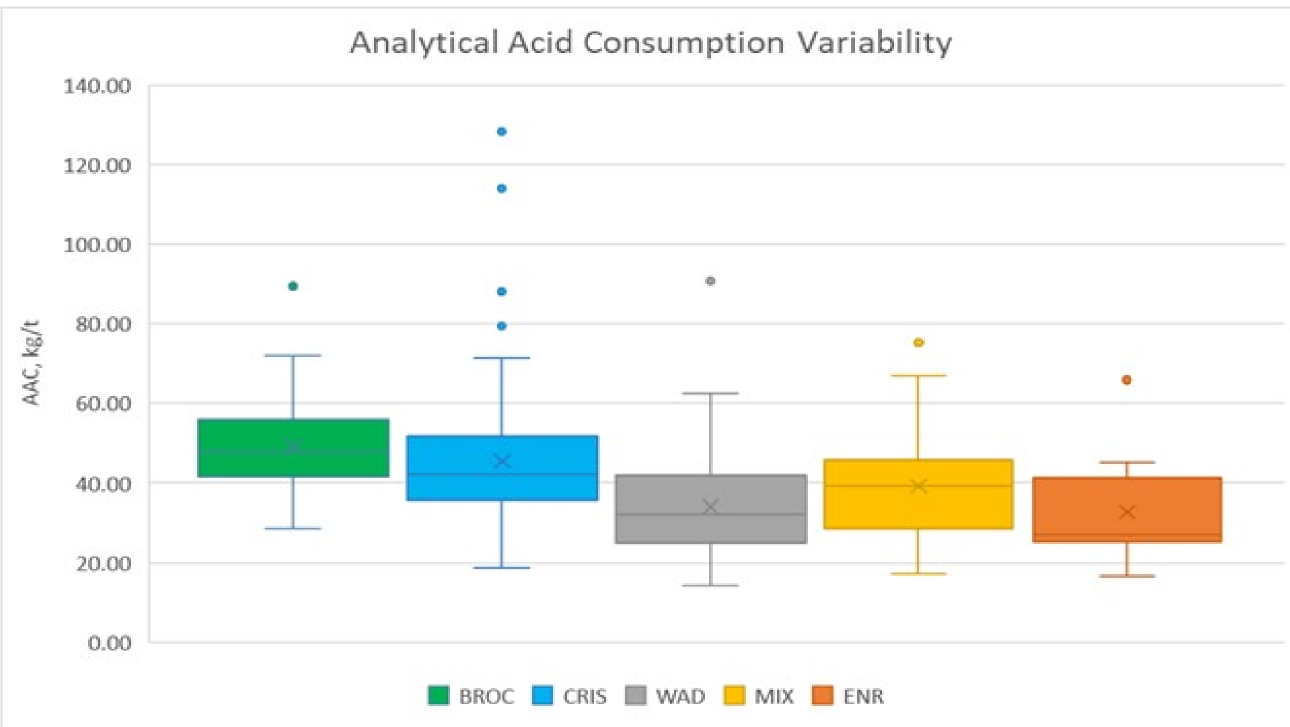


Figure 13-10: Variability Program Analytical Acid Consumption Test

Iso-pH tests

Similar to results observed in the Phase 4 metallurgical program, the majority of the composite samples returned recoveries that exceeded the solubility ratio, indicating that all of the acid soluble copper was recovered as well as additional copper not reported in the soluble copper assays. Additionally, the BROC, CRIS and WAD samples generally returned recoveries that exceeded the leaching potential, while the MIX and ENR samples reached recoveries between the solubility ratio and the leaching potential. WAD demonstrates the greatest recovery margin above the leaching potential. Currently this is interpreted as the presence of black oxides that are not detected in the head characterization tests but it can be recovered in longer tests given their slower leach kinetics. This can also be observed in the BROC and CRIS subzones, but to a lesser extent. Results observed for the MIX and ENR samples are as expected for the test conditions, as, to achieve higher recoveries of secondary sulfides, longer leach time or additional agglomeration and curing stages are required to increase recoveries.

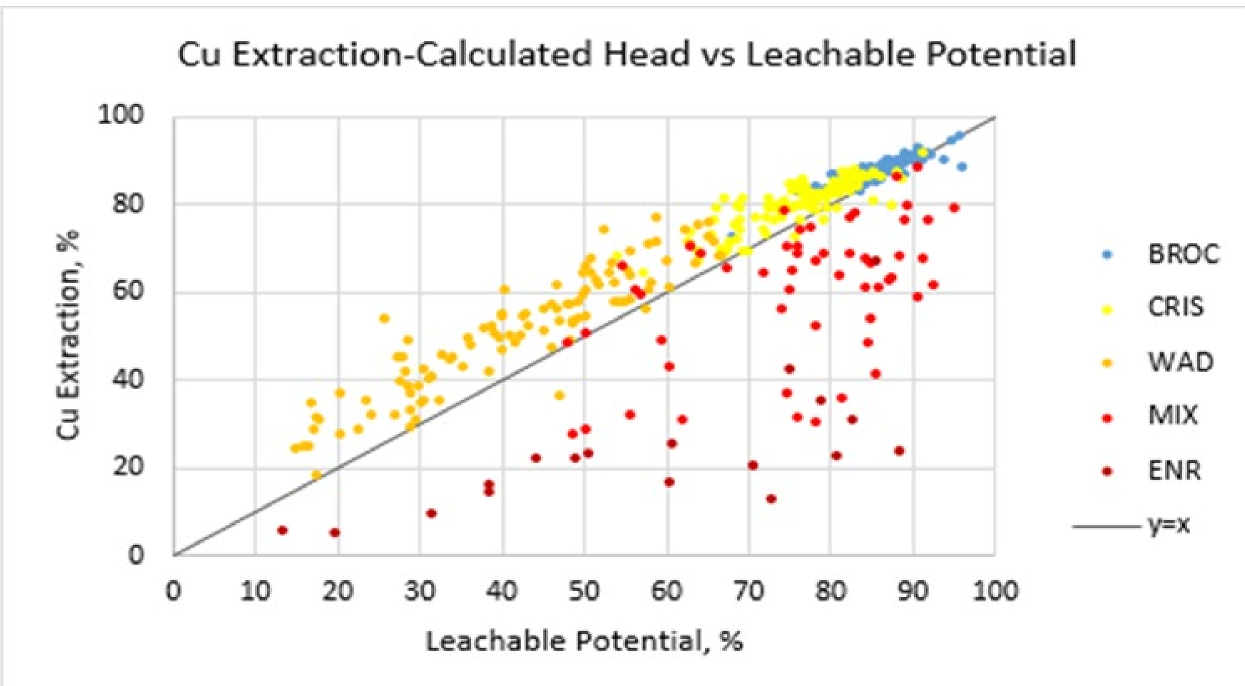


Figure 13-11: Copper recovery vs. leaching potential

The iso-pH acid consumption test also demonstrated a strong correlation between when compared with the AAC test which provides strong validation for the results.

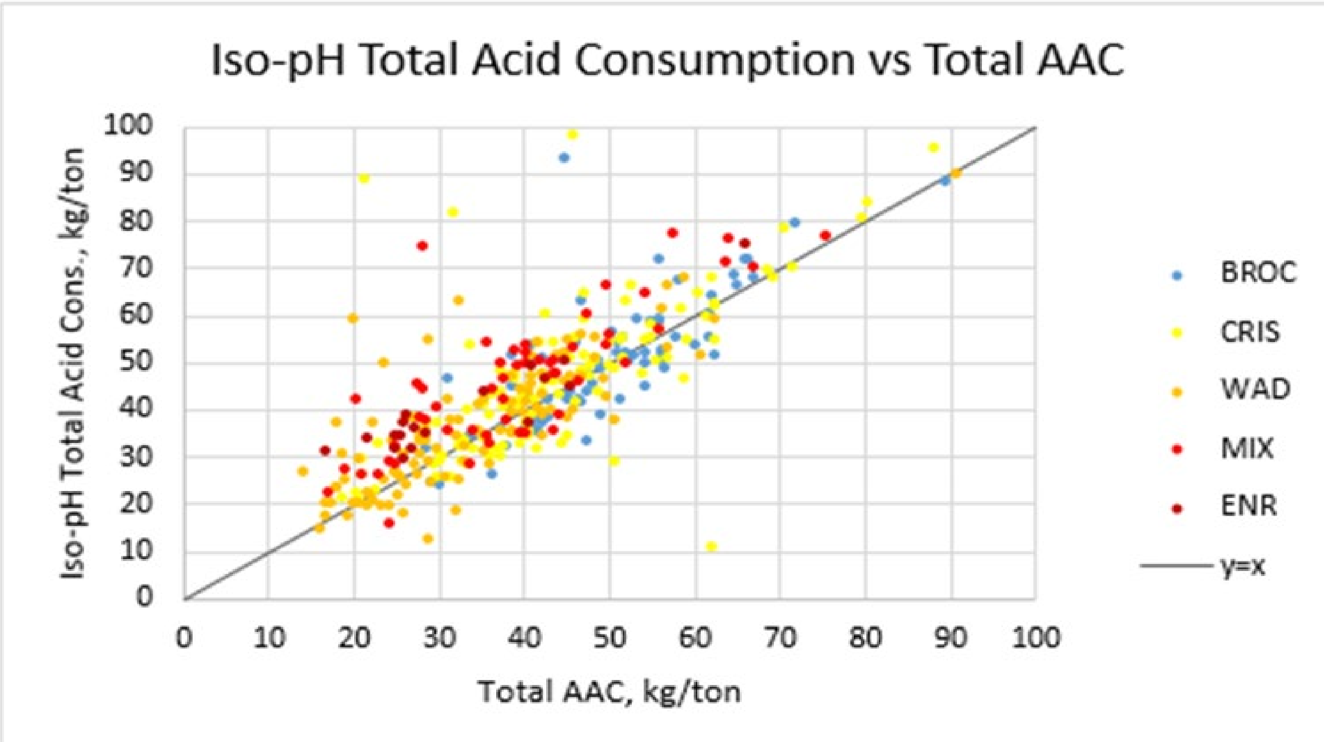


Figure 13-12: Acid consumption – AAC method vs. Iso-pH results

Acid Level Sensitivity Test

Copper recoveries did not demonstrate significant sensitivity to acid level test between 2.5 gpl, 5 gpt and 10 gpl. A slightly higher copper recovery is observed with higher acidity, but the effect is very limited. The sensitivity of acid consumption to acid level was higher than the copper recovery sensitivity. Acid consumption decreases materially at lower acidity. This is a known characteristic of the Marimaca ore and will play an important role in the processing plant operating condition design.

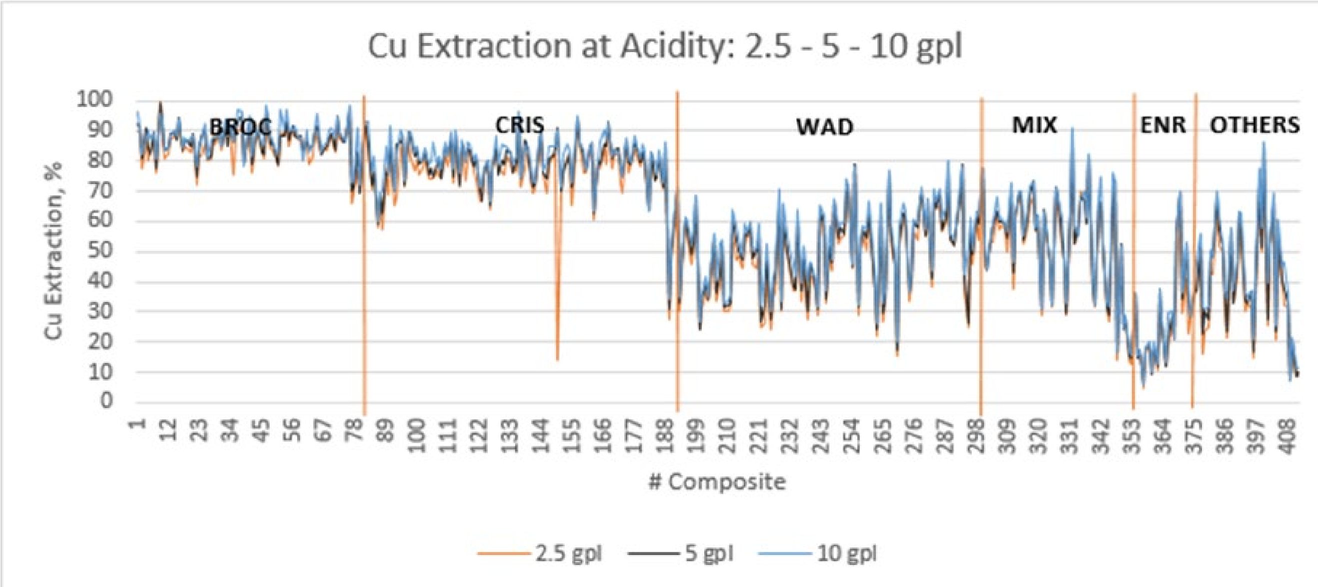


Figure 13-13: Acid level recovery sensitivities

Conclusions

Results from the Variability Program demonstrate relatively uniform metallurgical behaviour within each mineral zone when considering acid consumption and copper recoveries. A total of 412 composites across each of the 5 mineral zones within the Marimaca project (Brochantite, Chrysocolla, WAD, Mixed and Enriched) were analyzed which improves resolution of the understanding of the ore body's metallurgical characteristics. Similar to results seen in previous phases, the oxide mineral zones (BROC, CRIS, WAD), recoveries generally exceeded the solubility ratio and leaching potential of the samples, indicating a potentially larger proportion of the copper is acid soluble and will be recovered in commercial-scale heap leaching.

13.1.4 Geomet V

The Phase 5 Program was designed to confirm the 2020 PEA process design conditions and to evaluate potential optimization opportunities of both copper recovery and acid consumption identified during Phases 1 – 4 and the variability study. The results of the Phase 5 Program are positive, with optimization opportunities identified in most of the samples studied and tested.

Program Design – Heap Leach

- Sampling and sample preparation
    - 5 composite samples collected representative of each mineral subzone: brochantite/atacamite (BROC), chrysocolla (CRIS), WAD, mixed (MIX), and enriched (ENR)
    - Each composite was crushed in closed circuit to P90 at ½". Crushing was monitored and simulated a PSD profile of a Metso-type industrial configuration. Care was taken not to over-grind the material to obtain the final product with a -100 # Tyler content of 10-12 %
    - Sample allocation for each testing phase shown in Table 13-8
- Chemical Head Characterization & Mineralogical Analysis
    - Characterization included sequential copper analysis, leaching potential, soluble impurities, analytic acid consumption, ICP, optical microscopy, QEMSCAN
- Iso-pH Bottle Roll Tests
    - Conducted under constant pH and Cl conditions to examine the correlation to the analytical acid consumption (AAC) diagnostic testing method, improve the acid consumption modeling, and review copper recovery relative to leaching potential
- 3 Acid Level Sensitivity Bottle Roll Test
    - Conducted to examine copper recovery and acid consumption sensitivity relative to acid concentration
- Sulfation Tests
    - Conducted to determine the optimum agglomeration conditions for columns and minicolumns
- Minicolumn Tests
    - Designed to characterize the crushed ore metallurgical behavior under irrigation at different acidity levels
    - 32 leaching tests in mini-columns, 30 cm high, 6" in diameter and loaded with approximately 9 to 10 kg of sample each
- Column Tests
    - Designed to confirm the viability of the 2020 PEA and optimized design conditions defined by the Phase 4 geometallurgy and METSIM dynamic simulation
    - 10 leaching tests in columns, 4m high, 4" in diameter and loaded with approximately 52 to 60 kg of sample each

These tests were carried out by Geomet S.A., a well known, ISO 9001 certified, Chilean laboratory with considerable experience in metallurgical programs for copper deposits in Chile.

Table 13-8: Composite sample allocation across heap leach test program (G5 = Geometallurgy Phase 5)

Sample	Head Characterization kg	Sulfation Tests (5 kg /dose) kg	Minicolumns (h=30 cm, Ø=6") kg	Columns (h=4 m, Ø=4") kg	Reserve Sample kg	Total kg
BROC G5	12	15 (3 x 5 kg)	120 (12 x 10 kg)	120 (2 x 60 kg)	365	**632**
CRIS G5	12	15 (3 x 5 kg)	120 (12 x 10 kg)	120 (2 x 60 kg)	365	**632**
WAD G5	12	15 (3 x 5 kg)	80 (8 x 10 kg)	60 (1 x 60 kg)	295	**462**
MIX G5	12	15 (3 x 5 kg)	80 (8 x 10 kg)	60 (1 x 60 kg)	210	**377**
ENR G5	12	15 (3 x 5 kg)	80 (8 x 10 kg)	60 (1 x 60 kg)	295	**462**

Program Design – ROM leach

Sampling and sample preparation

- Four composites were prepared: WAD-ROM, BROC-ROM and CRIS-ROM and a global composite ROM G5
    - The global composite (ROM G5) was prepared representing utilizing the ore type distribution from the 2020 PEA mine plan for the ROM leach (60.4% WAD-ROM, 19.8% BROC-ROM and 19.8% CRIS-ROM)
- Chemical Head Characterization & Mineralogical Analysis
    - Characterization included sequential copper analysis, leaching potential, soluble impurities, analytic acid consumption, ICP, optical microscopy, QEMSCAN
- Iso-pH Bottle Roll Tests
    - Conducted under constant pH and Cl conditions to examine the correlation to the analytical acid consumption (AAC) diagnostic testing method, improve the acid consumption modeling, and review copper recovery relative to leaching potential
- 3 Acid Level Sensitivity Bottle Roll Test
    - Conducted to examine copper recovery and acid consumption sensitivity relative to acid concentration

- Crushed Column Tests
    - Conducted to define the maximum expected recoveries from the ROM composites and establish a comparative base with the crushed material
    - 6 leaching tests in crushed columns, 1 m high, 6” in diameter and loaded with approximately 30 to 40 kg of composite per subzone (BROC ROM, WAD ROM and CRIS ROM) each crushed to P90 1/2”
- 1m3 Container test
    - Conducted to individually characterize the metallurgical response of coarse material in a condition comparable to the first meter of a ROM operation
    - 3 leaching tests were completed in ROM containers, 0.90m high, with a surface area of 1.06m2 (volumetric capacity of 0.96 m3) and loaded with approximately 1.8 tonnes of ROM composite per subzone (BROC ROM, WAD ROM and CRIS ROM) each, at ROM granulometry (100% under 8”)
    - Agglomeration or curing is not carried out, but irrigation is carried out directly at any time, after loading
- Sequential ROM column
    - Conducted to simulate the ROM design under the 2020 PEA conditions using the ROM G5 global composite
    - 1 leaching test in 4 ROM columns in series, each one 3m high, 0.58m in diameter and loaded with approximately 1.45 tonnes of ROM G5 global composite each at ROM granulometry (100% under 8”)
    - Test covers a total height equivalent to 12m when considering the 4 columns in series

Results Discussion

Head Characterization – Copper Head Grade and Solubility Ratios

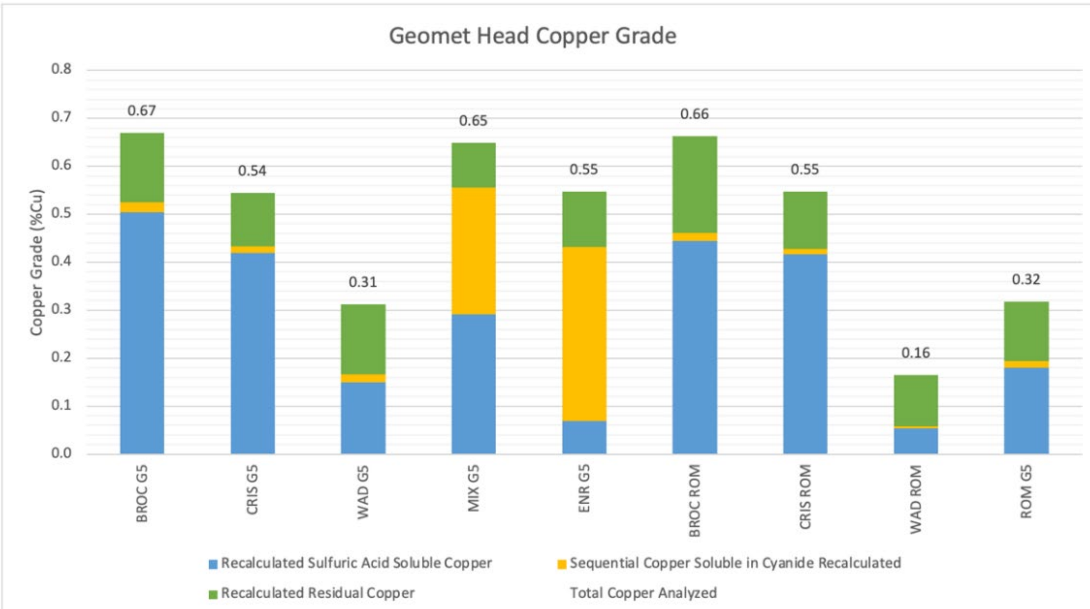


Figure 13-14: Copper Head Grade (CuT), with acid soluble (CuS) and sequential copper assays (CuCN)

As with the previous phases of test work, for the HL composites noted with 'G5' in Figure 13-14, samples were collected for each mineral subdomain at the MOD, meaning each zone is now covered by several samples. WAD mineralization (black oxides) at the MOD has a lower average CuT grade than green oxides (BROC and CRIS) which is in line with the composite sample head assays. Mixed and enriched mineralization at the MOD (MIX and ENR) generally has higher grades relative to green oxides, however with a lower proportion of acid soluble copper. This is also represented appropriately in the composites.

For the ROM composites, the material is coarser with grades similar to the HL samples for BROC and CRIS while for WAD, representative of the peripheral black oxide mineralization at the MOD, has significantly lower copper grades. The average grade of the global ROM G5 composite was 0.32% CuT.

BROC and CRIS composites present the highest sulfuric acid solubility (75-80%) and the lowest presence of secondary copper sulfide according to the cyanide soluble copper test results (<5%).

The WAD composites demonstrated a very marginal presence of secondary copper sulfide. Residual copper in both the HL and ROM composites was 50% or greater. Residual Copper typically reports as Chalcopyrite, however at the MOD, it also reports an important fraction of slow-dissolving black oxides which can have a significant recovery under industrial conditions due to the extended leaching time. The upside potential from the slow leaching black oxides is also present for the green oxide samples to a lesser extent, and partially in the MIX samples.

The MIX sample presents a high Leaching Potential (RS + RCN, 85%), however unlike the green oxides, >50% of the potentially leachable mineralization reports as secondary sulfide. The ENR sample's Leaching Potential is further skewed towards secondary sulfides, with an oxide presence of ~12%.

All the HL (G5) composite samples report near 80% Leaching Potential other than the WAD composite.

Head Characterization – Other Elements

Each composite sample was also subjected to full ICP and head grade assays to evaluate the composition of each representative sample. Results again demonstrate the clean nature of Marimaca mineralization with very low levels of carbonate (<1%) and nitrates (<0.03%), which is an important characteristic for productive copper leaching in industrial scale operations.

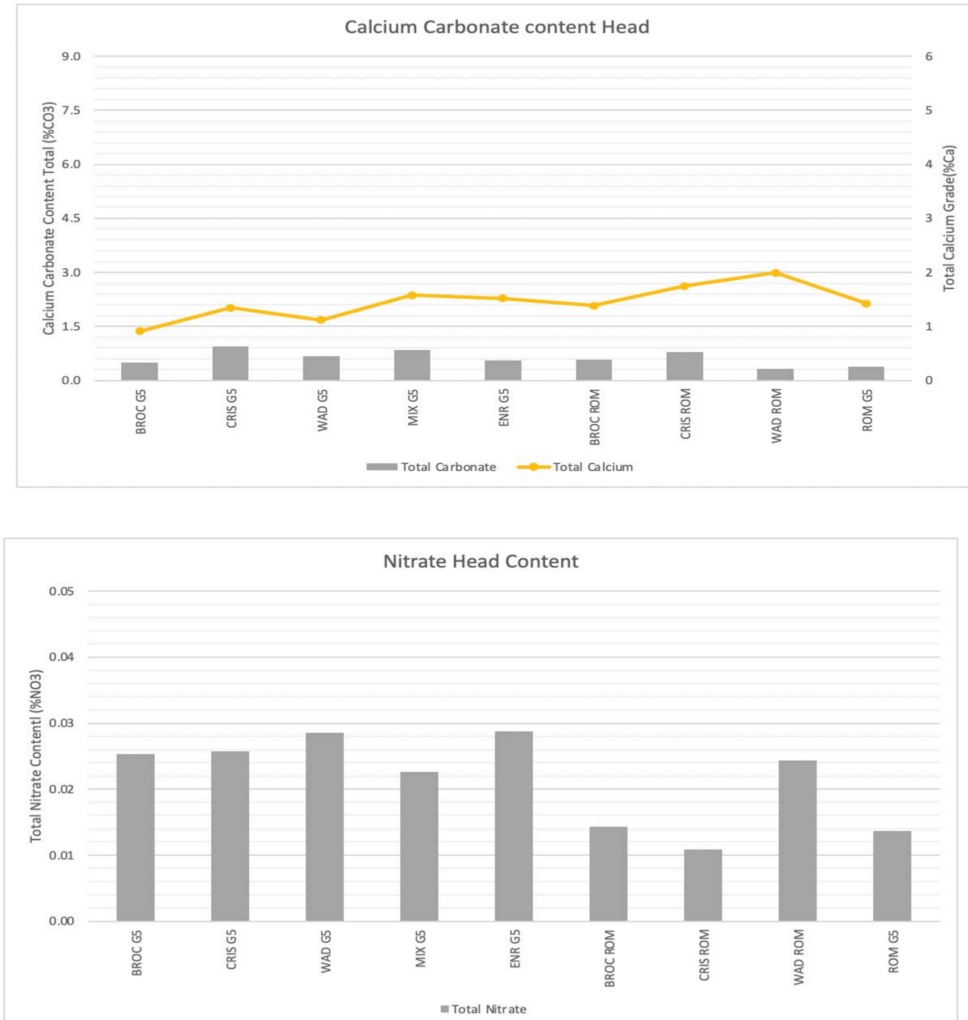


Figure 13-15: Carbonate and nitrate levels in composite head analysis

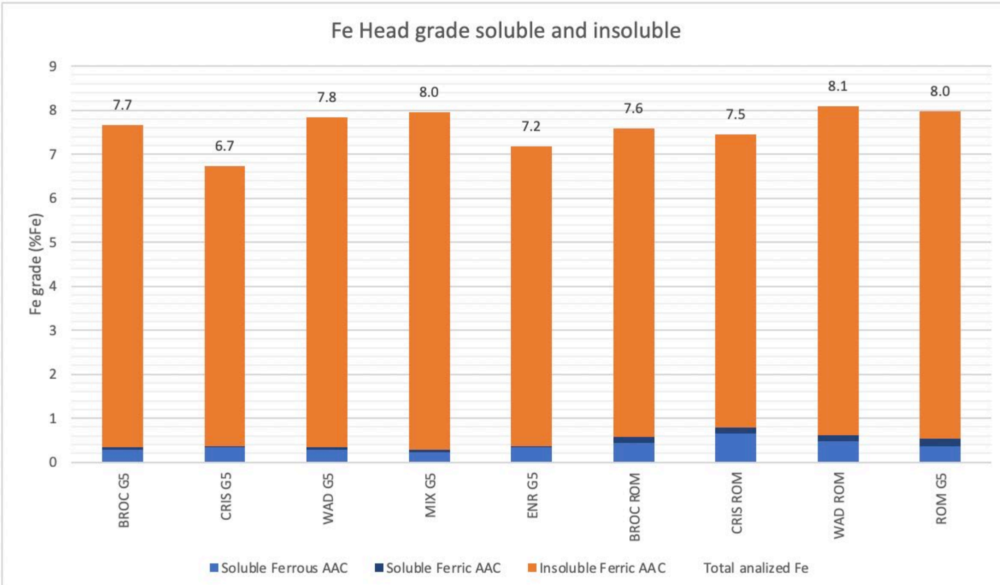


Figure 13-16: Fe head grade soluble and insoluble assays

Iron has a large elemental presence at Marimaca given its nature as an IOCG deposit. Analytical FeT is close to 7-8% in all composites and forms an important component in the expected impurities balance for the deposit. This is marginally higher than average for porphyry copper operations in Chile, however, is typical for an IOCG deposit.

Analytical Acid Consumption

Analytical acid consumption results were in-line with those observed historically in Phases 1-4 metallurgical programs. Generally, the green oxides (BROC/CRIS) have a higher acid consumption relative to black oxides and secondary sulfides (WAD-MIX-ENR). ROM samples present a marginally higher AAC likely due to the weathering effect in the surface samples. Results are in line with the 40kg/t average LOM acid consumption assumption used in the 2020 PEA.

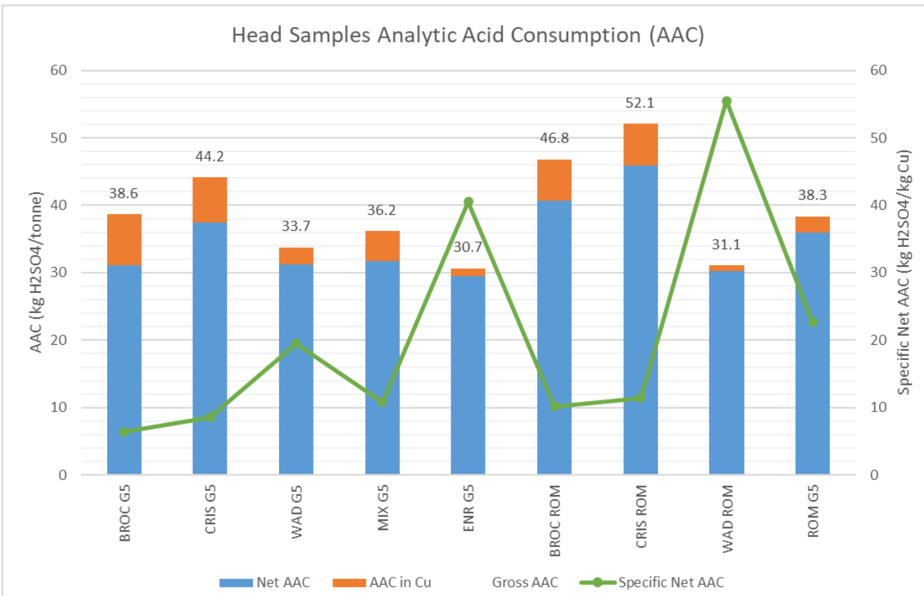
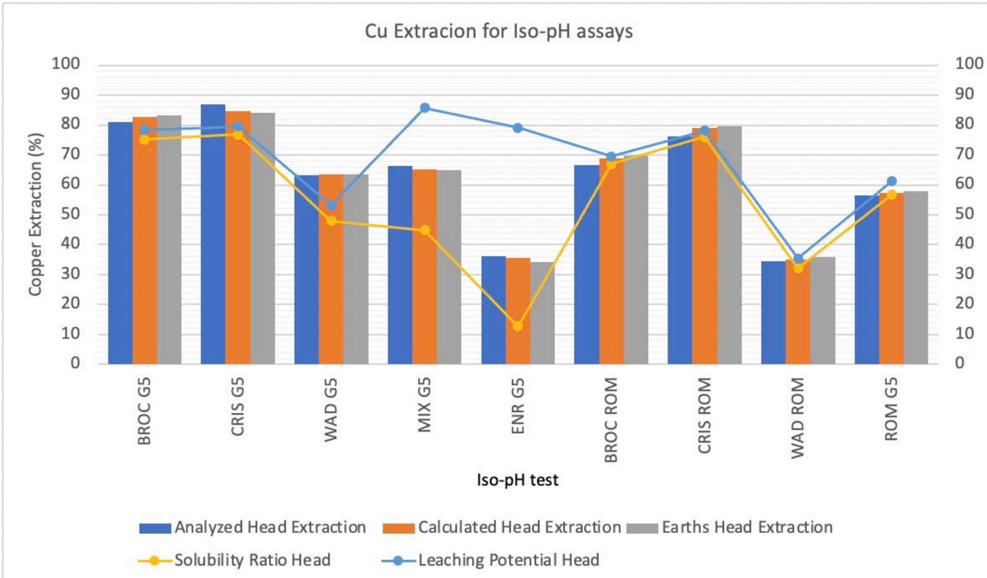


Figure 13-17: Analytical Acid Consumption across the HL and ROM composites (kg H_2SO_4/tonne)

Iso-pH Testing (bottle roll)

Iso-pH tests are conducted under constant pH and Cl conditions to examine the correlation to the analytical acid consumption (AAC) testing method, improve the acid consumption modeling, and review copper recovery relative to leaching potential.



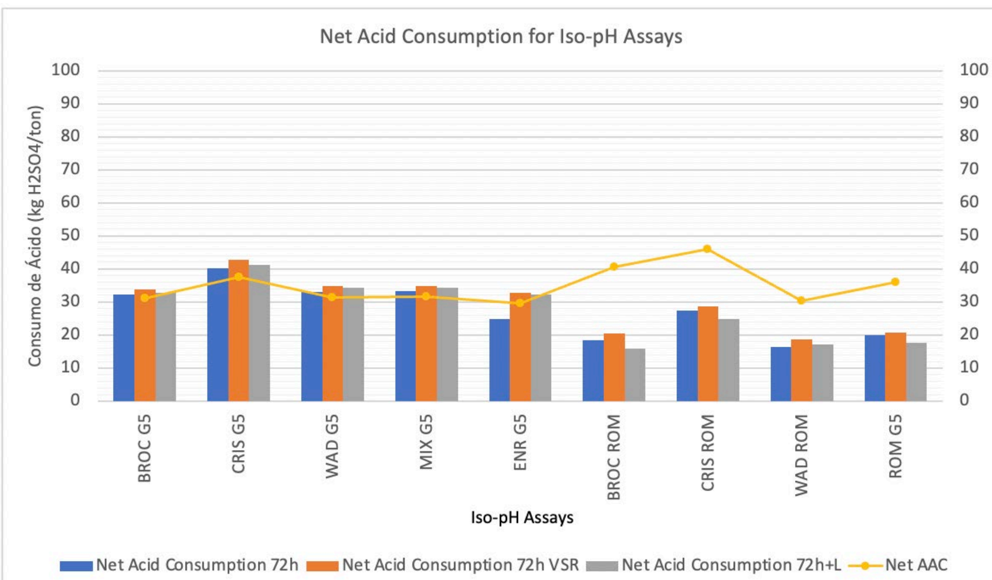


Figure 13-18: Iso-pH test recovery and net acid consumption across HL and ROM composites

The 72-hour Iso-pH tests further show that recoveries in the HL oxide composites (BROC, CRIS, WAD) are generally higher than the Solubility Ratio and Leaching Potential. This can be explained by the presence of copper oxides with slow dissolution kinetics, not detected during soluble or sequential copper assays, but which can be recovered in tests of longer duration. MIX/ENR composite recoveries are generally greater than the solubility ratio but under the leaching potential. The oxidized component is recovered plus a fraction of secondary sulfides. Under industrial conditions, this recovery could be improved given the longer leaching time and conditions that favor oxidation given the higher availability of oxygen.

3 Acid Level Sensitivity Bottle Roll Test

The three-acid level sensitivity test was designed to evaluate the sensitivity of both copper recovery and acid consumption to variable concentration of acid – 2.5gpl, 5.0gpl and 10.0gpl H_2SO_4.

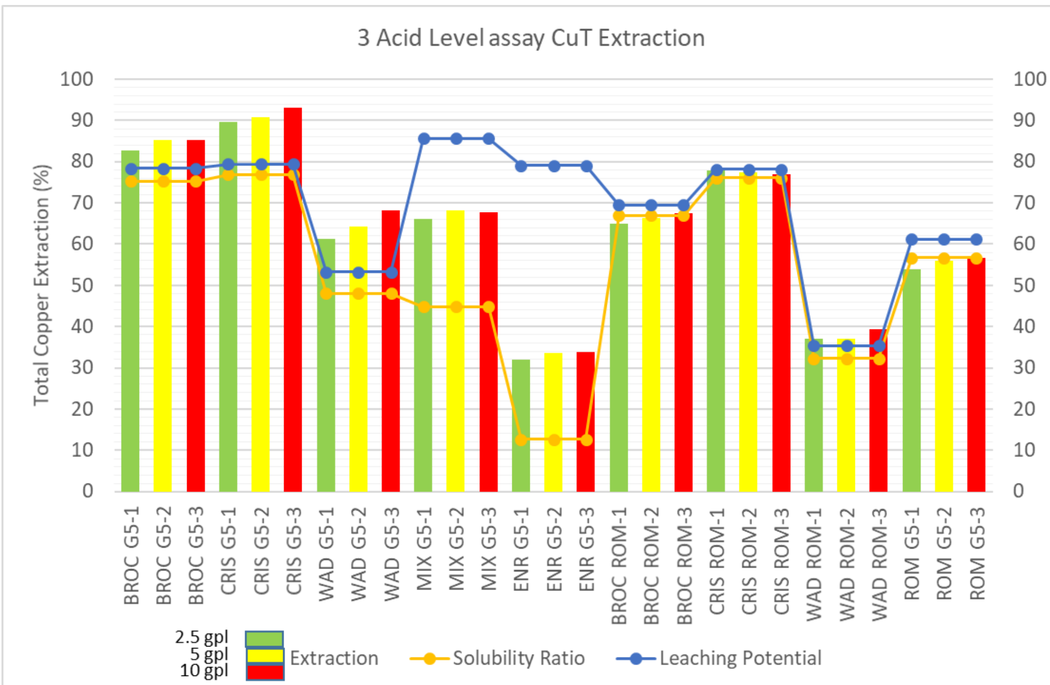


Figure 13-19: 3-acid level recovery

Like the results published in the 2021 Variability Program, the 3-acid level sensitivity test demonstrated that total copper recovery is relatively insensitive to acid concentration, while the acid consumption shows a much steeper response and is notably higher when irrigated at 10gpl vs. 2.5gpl. This indicates that gangue species present are most sensitive to the acid content while copper species are not as affected by the different acidity levels. This is expected to allow further optimization of acid consumption for the deposit in industrial scale operations.

Heap Leach Sulfation Tests

Sulfation tests were carried out to confirm and optimize the agglomeration conditions for the column and mini-column tests. The tests are carried on 3 x 5kg samples from each composite, with three levels of acidity (20, 30 and 40 kg H2SO4 per tonne). Cu extraction, acid consumption and impurities dissolution were evaluated.

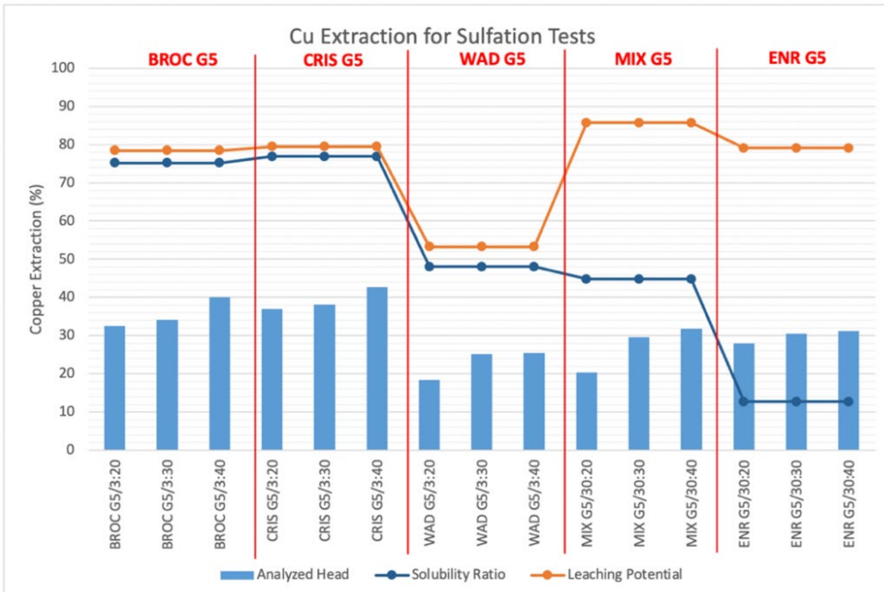


Figure 13-20: Total copper recovery per composite at various acid dosages in agglomeration phase

Copper extraction increased moderately with the acid dosage in the agglomeration phase. Close to the 50% of the Leaching Potential was recovered for the green oxide composites, while for the WAD composite ~40% is obtained. For mixed and enriched samples with the addition of salt Cu recovery reaches 20 to 30%. A key trade-off is copper recovery during curing vs. under heap leach irrigation while maintaining <40kg/t acid consumption. The strategy of using lower acid doses during curing (20-25 kg/t) is considered optimal.

Column Tests: Heap Leach

Each of the 5 heap leach composites was mechanically prepared at a granulometry of 90% passing ½" and leached in 4-meter columns to simulate the 2020 PEA dynamic heap leach height. Two conditions were tested – 2020 PEA assumptions (PEA), and an optimized condition (OPT) as defined by METSIM geo-metallurgical simulations based on results from Phases 1-4 metallurgy. Operating conditions are defined below.

The oxide columns (BROC G5, CRIS G5, WAD G5) underwent 52 (PEA) and 42 days (OPT) of irrigation with ILS solution (10 and 8 g/L H2SO4 for PEA and OPT conditions respectively), as well as 40 (PEA) and 50 days (OPT) of irrigation with raffinate solution (10 and 8 g/L H2SO4), respectively, to reach total irrigation time of 92 days. The sulfide columns (MIX G5, ENR G5) consider 55 and 42 days of irrigation with ILS solution (10 and 8 g/L H2SO4), as well as 55 and 68 days of irrigation with raffinate solution (10 and 8 g/L H2SO4) for PEA and OPT respectively, to reach a total irrigation of 110 days. The same raffinate solution is used for agglomeration as for the second irrigation cycle. The acid content in the raffinate solution is taken as additional and is not included in the agglomeration acid dose expressed in kg H2SO4/t which only represents the concentrated acid added.

Table 13-9: Heap leach column testing agglomerating conditions

N°	Condition	Sample	Granulometry	Height (m)	Diameter (in)	Cured (days)	Dose H_2SO_4 (kg/t)	Dose NaCl (kg/t)	Agglomeration Solution
C1	PEA	BROC G5	P90<1/2"	4	4	3	20	0	RF-10
C3	OPT	BROC G5	P90<1/2"	4	4	3	25	0	RF-8
C7	PEA	CRIS G5	P90<1/2"	4	4	3	20	0	RF-10
C9	OPT	CRIS G5	P90<1/2"	4	4	3	25	0	RF-8
C13	PEA	WAD G5	P90<1/2"	4	4	3	20	0	RF-10
C14	OPT	WAD G5	P90<1/2"	4	4	3	25	0	RF-8
C17	PEA	MIX G5	P90<1/2"	4	4	30	20	15	RF-10
C18	OPT	MIX G5	P90<1/2"	4	4	30	20	15	RF-8
C21	PEA	ENR G5	P90<1/2"	4	4	30	20	15	RF-10
C22	OPT	ENR G5	P90<1/2"	4	4	30	20	15	RF-8

Table 13-10: Heap leach column testing irrigating conditions

c	Sample	Irrigation 1 (days)	Irrigation rate 1 (L/h-m^2)	Irrigation Frequency 1 (h/d)	Irrigation Soln 1	Irrigation 2 (days)	Irrigation rate 2 (L/h-m^2)	Irrigation Frequency 2 (h/d)	Irrigation Soln 2	Total Irrigation (days)
C1	BROC G5	52	12	24	ILS-10	40	12	22	RF-10	92
C3	BROC G5	42	15	24	ILS-8	50	15	14	RF-8	92
C7	CRIS G5	52	12	24	ILS-10	40	12	22	RF-10	92
C9	CRIS G5	42	15	24	ILS-8	50	15	14	RF-8	92
C13	WAD G5	52	12	24	ILS-10	40	12	22	RF-10	92
C14	WAD G5	42	15	24	ILS-8	50	15	14	RF-8	92
C17	MIX G5	55	12	24	ILS-10	55	12	22	RF-10	110
C18	MIX G5	42	15	24	ILS-8	68	15	14	RF-8	110
C21	ENR G5	55	12	24	ILS-10	55	12	22	RF-10	110
C22	ENR G5	42	15	24	ILS-8	68	15	14	RF-8	110

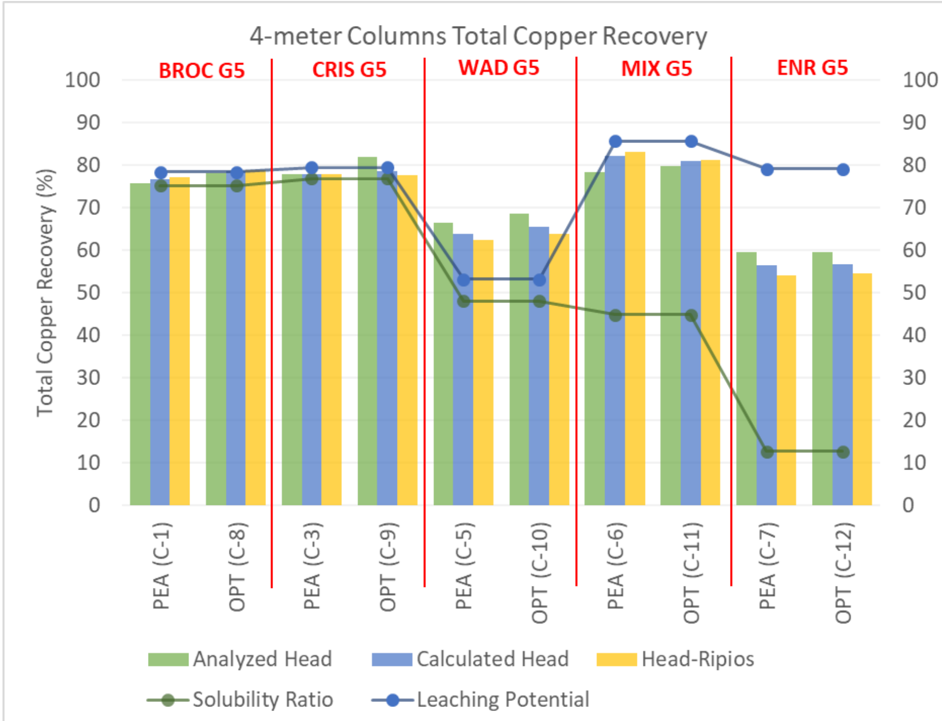


Figure 13-21: 4m column test results – CuT recovery, PEA and OPT conditions

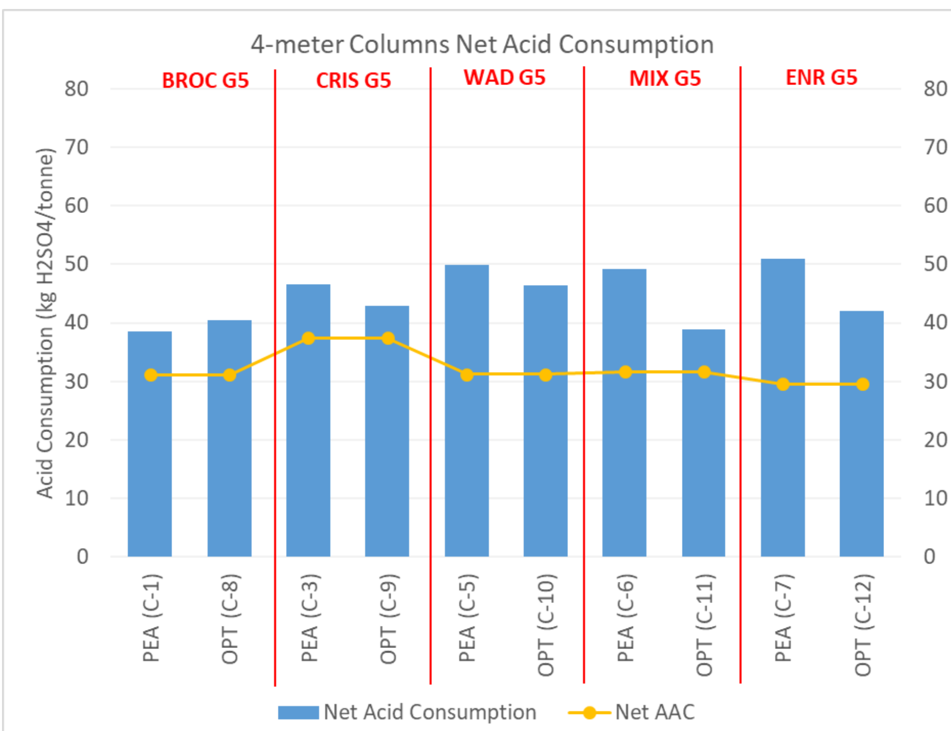


Figure 13-22: 4m column test results – acid consumption, PEA and OPT conditions

The first key takeaway from the 4m column testing program was the confirmation of a positive metallurgical response for the 2020 PEA design conditions for CuT recovery and acid consumption. The 2020 PEA metallurgical assumptions were generated without having full-scale column test experimental results exactly under the established conditions in the design criteria.

The results of the 4-meter columns demonstrate that the OPT condition optimizes acid consumption maintaining or improving copper recovery relative to 2020 PEA operating conditions.

For the oxidized samples, a reduction in acid consumption of around 3-4 kg/t and an increase in recovery of around 1% is observed. For the MIX and ENR samples, the saving in acid consumption is greater at approximately 9 kg/t while maintaining the 2020 PEA condition recovery. It should be noted that a large driver of the difference between the savings of the oxidized and sulfurized samples was because the dose of acid during agglomeration was not increased in the optimized sulfide condition, unlike the oxides where this reagent was increased from 20 to 25kg/t.

This result indicates that the OPT condition has a net gain compared to the 2020 PEA conditions. Consistent with the other leaching tests carried out, all the columns reached copper recoveries that exceed the Solubility Ratio of the respective composites. Additionally, all the oxide samples met or exceeded the composite Leaching Potential, particularly the WAD composite which recovered approximately 10 recovery points above the Leaching Potential.

As seen on previous occasions, the MIX and ENR samples reach an intermediate recovery value between the Acid Solubility and the Leachable Potential.

Column Tests: ROM Leach

Container column leach

The container test was designed to individually characterize the metallurgical response of coarse material in a condition comparable to the first meter of a ROM operation. The composite prepared was analyzed and a complete characterization generated. 3 leaching tests were completed in ROM containers, 0.90 m high, with a surface area of 1.06m2 (volumetric capacity of 0.96 m3) and loaded with approximately 1.8 tonnes of ROM composite per subzone (BROC ROM, WAD ROM and CRIS ROM) each, at ROM granulometry (100% under 8”). Agglomeration or curing is not carried out, but irrigation is carried out directly at any time, after loading. The operating conditions for ROM containers are detailed below. The ROM containers (BROC ROM, WAD ROM and CRIS ROM) consider 180 days of irrigation with a sulfuric acid solution (10 g/L H2SO4).

Table 13-11: Container leach operating conditions

N°	Composite	Granulometry	Irrigation (days)	Irrig Rate (L/h-m²)	Irrig Frequency (h/d)	Irrig Soln (g/l)
G-1	BROC ROM	P100<8"	180	6	24	RS-10
G-2	WAD ROM	P100<8"	180	6	24	RS-10
G-3	CRIS ROM	P100<8"	180	6	24	RS-10

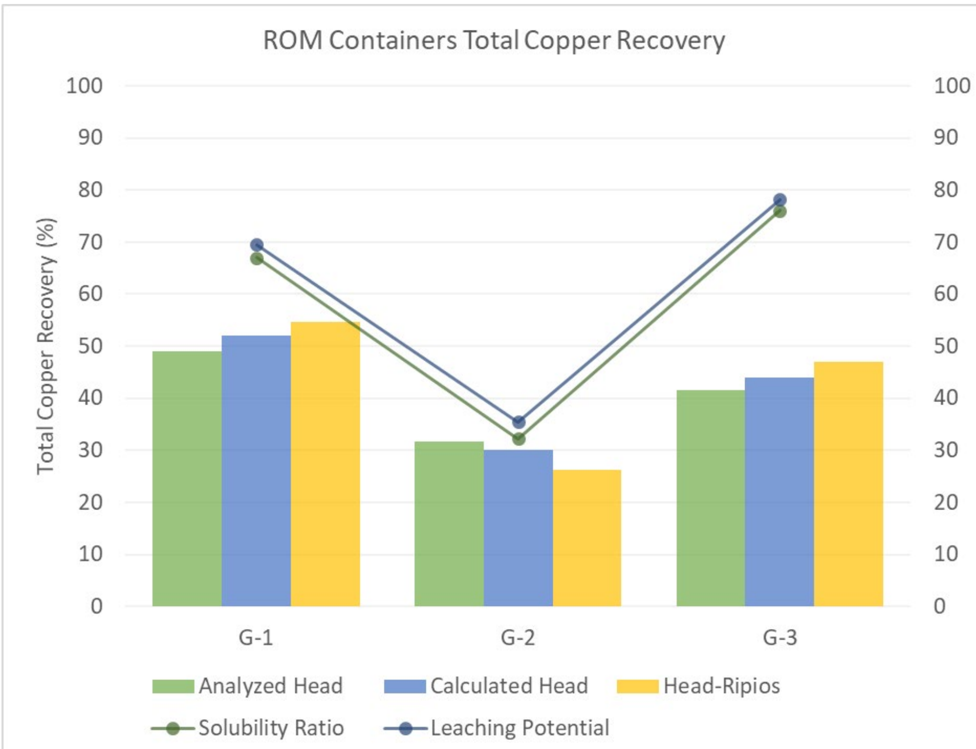


Figure 13-23: Container column test results – copper recovery

Recoveries in the ROM composites are lower than Leaching Potential which is a result of the larger ROM particle size. In the WAD sample, WAD-ROM (G-2), copper recovery is much closer to the Leaching Potential relative to CRIS-ROM (G-1) and BROC-ROM (G-3) samples. This is possibly an indication than the WAD mineralization is more exposed after rock fracture, a characteristic than will benefit its natural lower copper grade. This may be an important upside lever for the ROM leach given the significant portion its ore contribution while in operation will be WAD ore. The 2020 PEA LOM ROM recovery assumption was 40%.

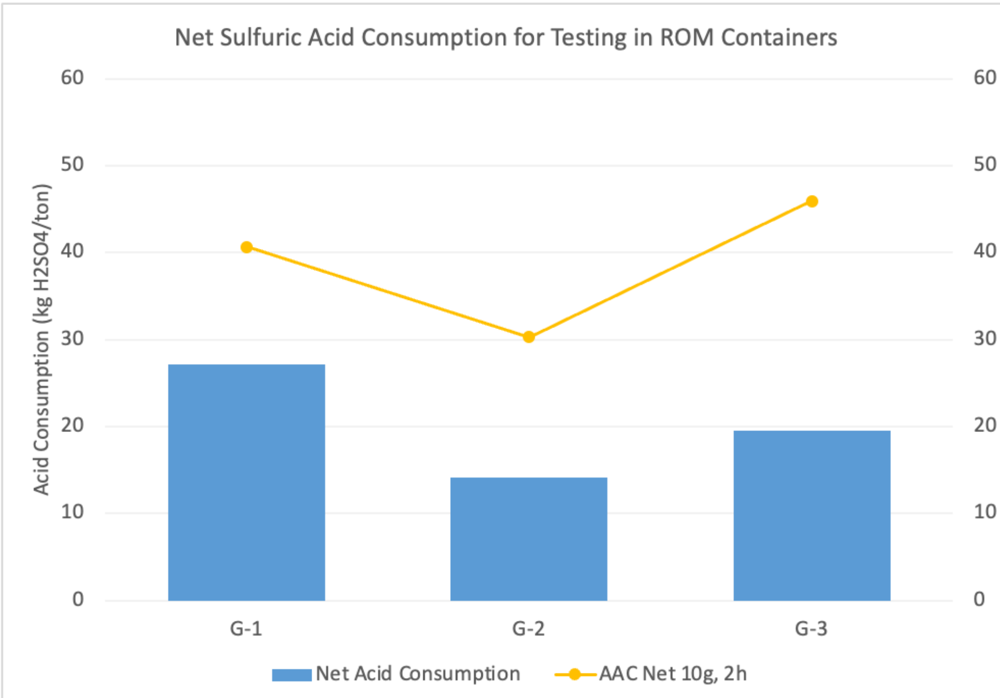


Figure 13-24: Container column test results – acid consumption

Net acid consumption is affected by the particle size distribution of the samples. The higher the particle size the lower the available surface for extraction reaction and gangues neutralization which causes a reduction in acid consumption in the range of 30% (G-1) and 50% (G-2, G-3) when compared to the AAC assay. This is the same observation as the copper recovery results, however with a positive impact.

The recovery in the containers is naturally less than the recovery in the crushed ROM column tests given the difference in particle size distribution and lack of curing. The ROM extraction kinetics still maintain a positive slope at 180 days.

Sequential ROM column test

The sequential ROM column test was designed to simulate the ROM design conditions of 10m ROM bench heights. For the ROM G5 leaching (19.8% BROC ROM, 19.8% CRIS ROM and 60.4% WAD ROM), 1 leaching test in 4 ROM columns in series was carried out, each column 3m in height and 58cm in inside diameter. Each column was loaded with approximately 1.45 tonnes of ROM G5 global composite at ROM granulometry (100% under 8") covering a total height equivalent to 12m when considering the 4 ROM columns in series together. Agglomeration or resting is not carried out, but irrigation is carried out directly after loading. The operating conditions for the ROM columns are detailed below.

Table 13-12: Sequential ROM column operating conditions

N°	Compose	Granulometry	Height (m)	Inside Diameter (cm)	Irrigation (days)	Irrigation Rate (L/h-m^2)	Frequency. Irrigation (h/d)	Soln 12 days of Initial Irrig.	Post Irrig. Soln
R1A	ROM G5	P100<8”	3	58	180	6	24	RS-10	Refine SX
R1B	ROM G5	P100<8”	3	58	180	6	24	Column Effluent R1A	
R1C	ROM G5	P100<8”	3	58	180	6	24	Column Effluent R1B	
R1D	ROM G5	P100<8”	3	58	180	6	24	Column Effluent R1C	

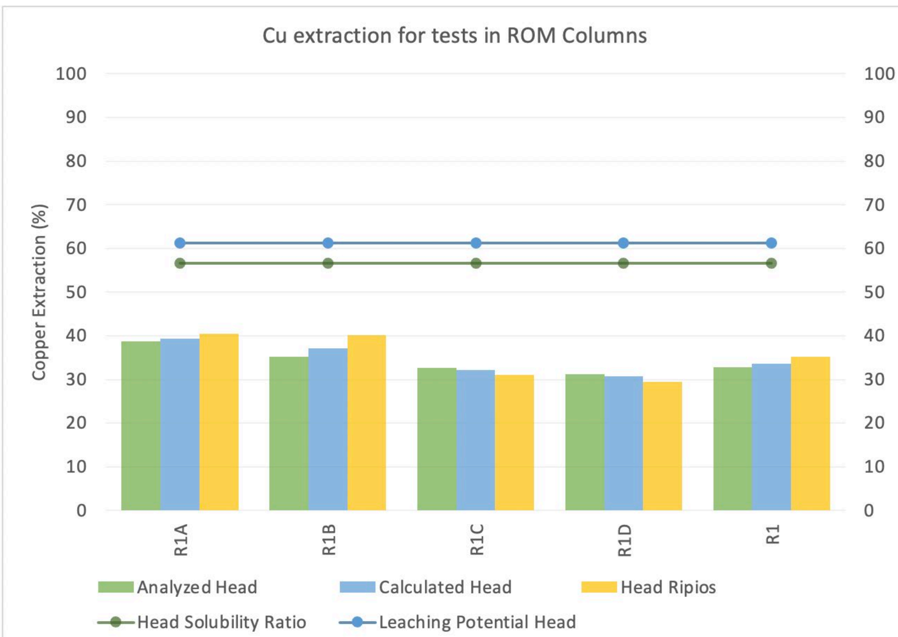


Figure 13-25: Sequential column total copper recovery

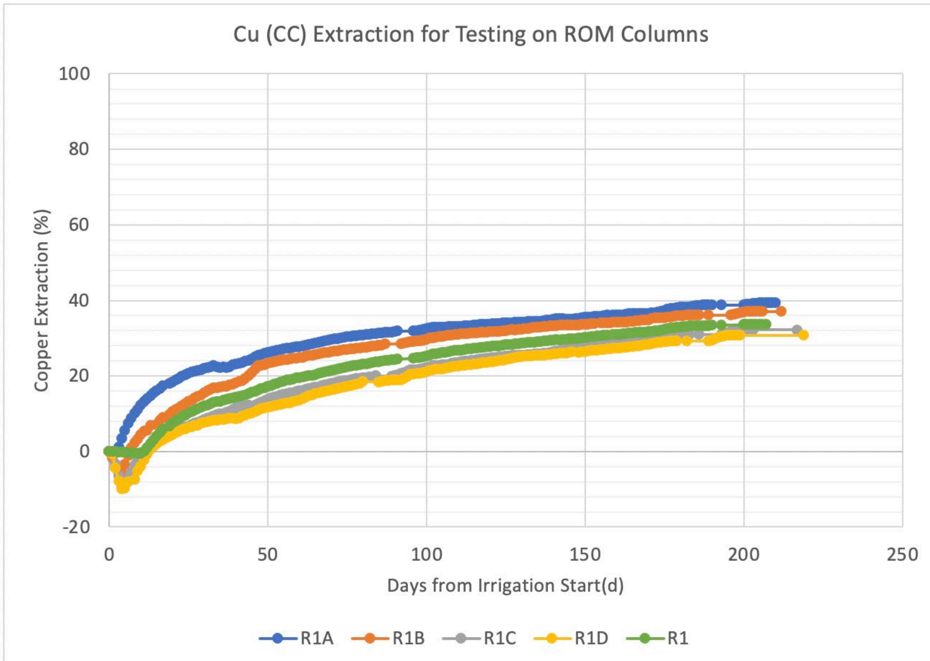


Figure 13-26: Recovery kinetics of sequential ROM column tests

The first 3-meter section (Column R1A) demonstrates the highest recovery, with recovery decreasing towards the lower sections (R1D lowes). The lower availability of acid in the deeper levels partially affects the dissolution of copper. Average overall recoveries are lower than the sample's Leaching Potential given both the aforementioned effect of the acidity profile and the effect of the larger particle size of a ROM sample compared to the HL samples.

At the kinetic level, upper columns in the sequence have higher available acid and hence a higher recovery than the proceeding columns. It is also observed that at days 180-200 the slope of the recovery kinetics is still positive with recovery yet to reach the asymptote. The convenience of extending the cycle must be evaluated in terms of marginal recovery (kg Cu/kg H+) relative to incremental acid consumed.

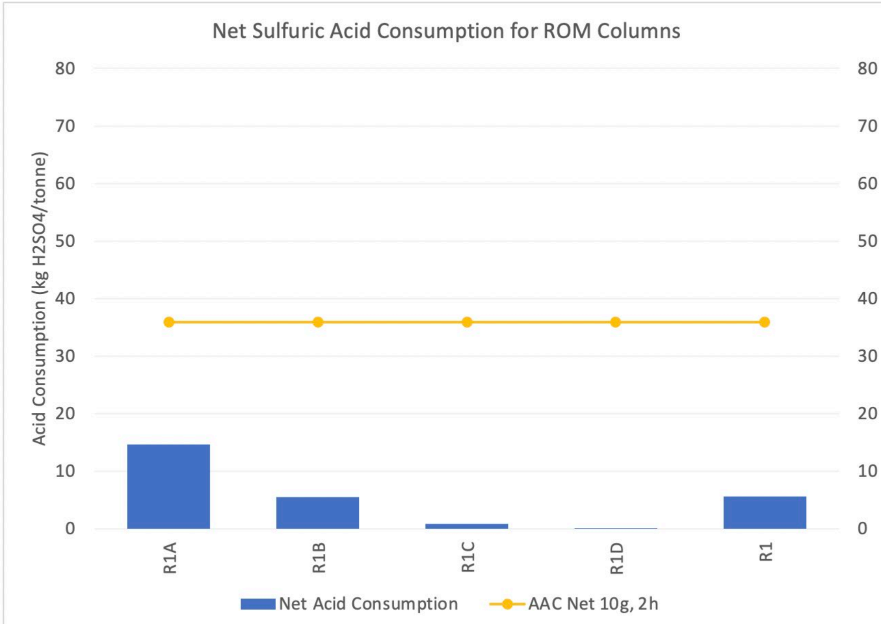


Figure 13-27: Sequential ROM column test acid consumption

As with copper recovery, acid consumption decreases towards the lower sections of the sequential column, reaching a value very close to zero for Column R1D. This indicates that the higher concentration of acid in solution in the upper columns strongly affects consumption, and in greater proportion than it affects the dissolution of copper, which opens opportunities for the optimization of consumption without materially impacting copper recovery. At the aggregate level for the 12 meters, the ROM-G5 sample reached a consumption of 5.6 kg/t, less than the 10 kg/t established in the 2020 PEA.

The results from the sequential ROM column tests indicate the potential for a positive opportunity to improve recoveries by extending the ROM leaching cycle and increasing acid irrigation while maintaining manageable acid consumption levels.

13.2 Conclusions

Results from Phase 5 demonstrate metallurgical performance in scaled-up, industrial height operating design conditions. Results confirm the previous understanding of the Marimaca project's metallurgical performance based on results from Phases 1-4. Phase 5 also provides further data to support acid consumption performance, particularly the confirmation of the low levels of both carbonates (<1.0%) and nitrates (<0.03%) with the Marimaca oxide deposit sample set. Impurities dissolution and management (i.e. the dissolution of additional elements in addition to copper) during the leaching process was identified as an important consideration particularly with respect to permeability of the leaching solution in certain column tests, and the efficiency of the solvent extraction process at the laboratory scale. The Company is currently completing additional test work to understand whether impurities mitigation strategies will be required in final project design. Any changes required will be reflected in the future process design planning for future studies.

14 MINERAL RESOURCE ESTIMATES

14.1 Introduction

This section outlines the Mineral Resource estimation methodology utilized and summarizes the key assumptions adopted for the generation of the Mineral Resource models.

Mineral Resources were estimated for the deposit located on the Marimaca property.

The Marimaca open pit Mineral Resource model was generated by NCL for Total Copper (CuT) and Soluble Copper (CuS). Grades were estimated for the portion of the deposit covered by the Mineral Zones solid model described in Chapter 7 of this report, which most likely will be mined by open pit methods.

In the opinion of NCL, the resource evaluation reported herein is a reasonable representation of the Mineral Resources found on the Marimaca project at the current level of sampling. The Mineral Resources have been estimated in conformity with generally accepted CIM Estimation of Mineral Resource and Mineral Reserves Best Practices Guidelines and are reported in accordance with Canadian Securities Administrators' National Instrument 43-101.

Mineral Resources are not Mineral Reserves and have not demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into Mineral Reserve.

14.2 Geological Interpretation and Modeling

Rock-Structure and Mineral Zone distribution was interpreted by MCC geologists using hand-paper traditional method on vertical cross sections oriented NE, NW and EW, at 1:1,000 metric scale (see examples in Figures 14-1 and 14-4). Most of the deposit area was covered by a set of 50 m totaling 25 NW and 28 NE oriented sections (Figures 14-1 and 14-2).

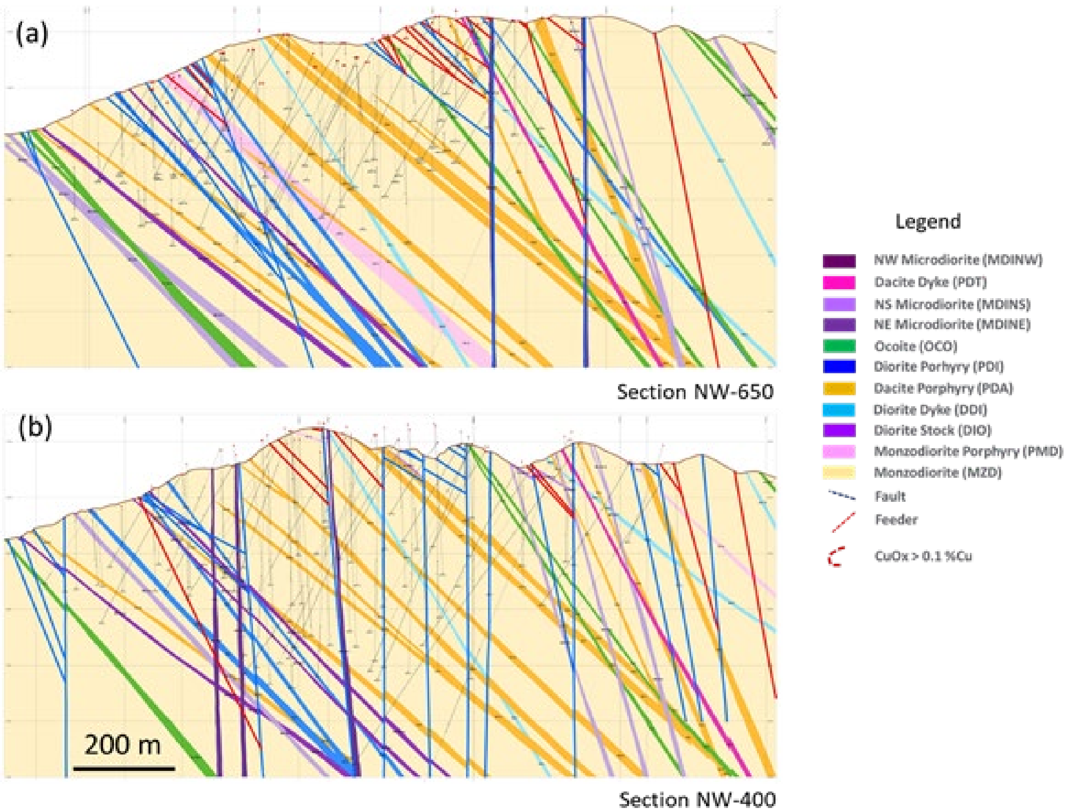


Figure 14-1: Lithological and Structural Interpretation. Sections NW 400 (a) and NW 650 (b), Marimaca Copper Corp., 2023

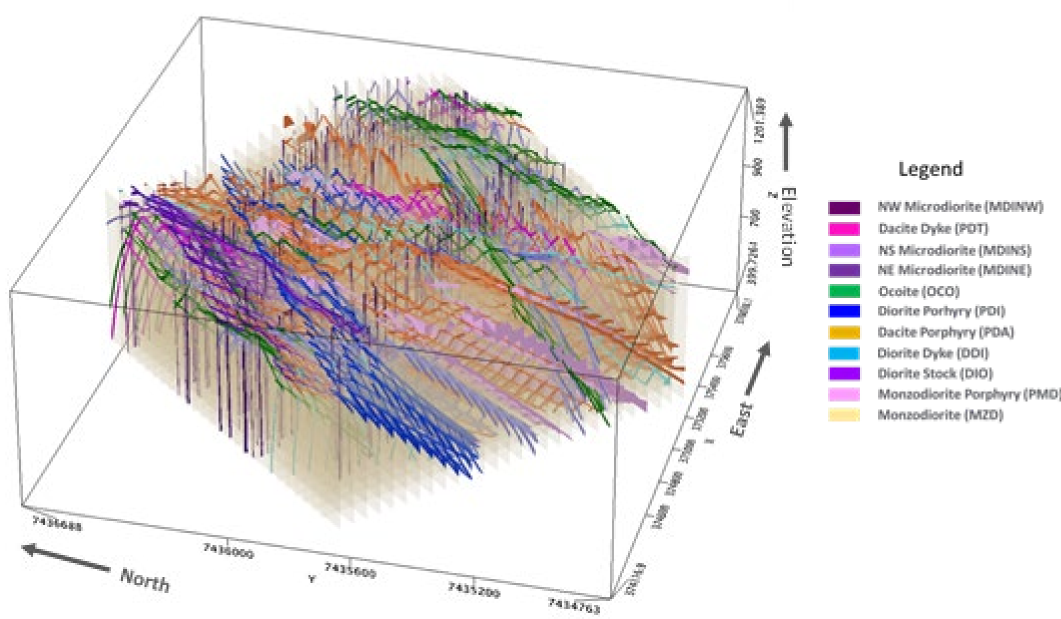


Figure 14-2: Lithology & Structure Section Integration, Marimaca Copper Corp., 2023

The order of interpretation was litho-structure first and then the mineral zone into transparent overlays. The mineral zone interpretations were later used as MRE domains. The lithological units and structural interpretations were based primarily on the detailed surface geology map, as well as underground mine workings maps (Figure 14-3) with drill hole logging as support, as well as anisotropies identified in structural analyses. The mineral zone interpretation was based primarily on the drill hole logging (Figure 14 -4 a, b).

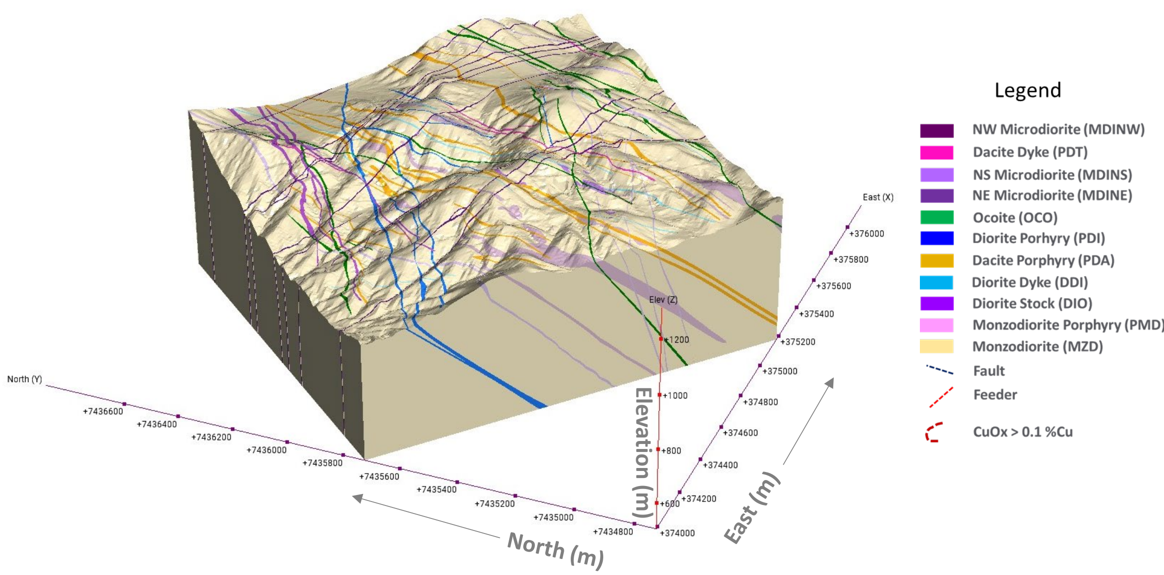


Figure 14-3: Marimaca Project, 3D Lithological Model (2023) built in Leapfrog Geo, Marimaca Copper Corp., 2023

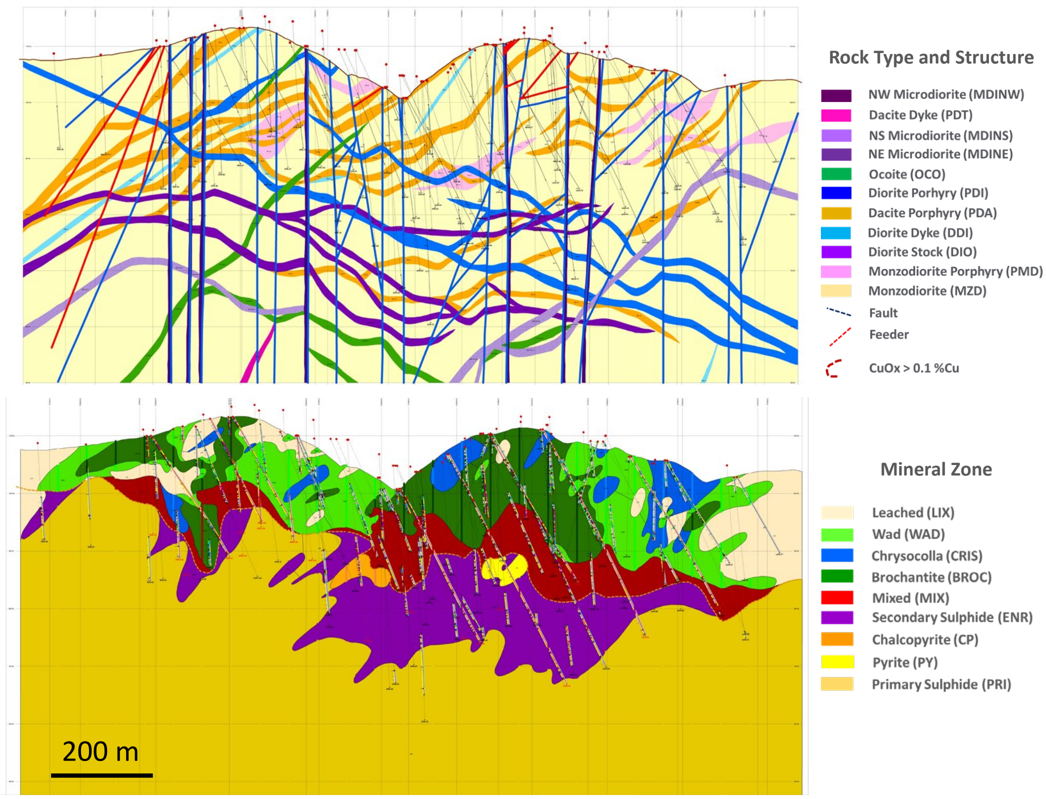


Figure 14-4: Marimaca Project, Illustrative Litho-Structure (a) and Updated Mineralization Section NE100 (b). Sections are 220°south-east (Marimaca Copper Corp., 2023

Figure 14-5 shows the 3D combination of the data to produce a mineral unit.

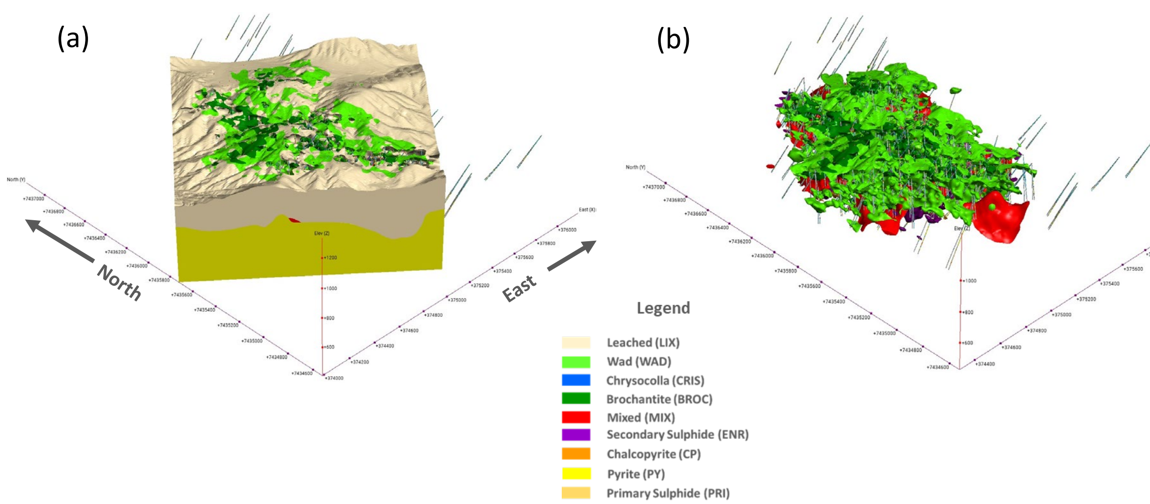


Figure 14-5: 3D Mineral Zones Model built in Leapfrog Geo, Marimaca Copper Corp., 2023

After comparing the Marimaca Mineral Resource model against the informing composites and the statistics of the model, NCL concludes that the modeling approach produced a reasonable and reliable model.

14.3 Resource Estimation Procedures

The following stages were developed to build the resources model of the Marimaca deposit and generate the resource estimate:

- Analysis of exploration data and definition of the estimation populations
- Validation of three-dimensional solids of the defined populations
- Statistical analyses of the composites of the different variables in each population
- Variography and anisotropy analyses. Definition of preferential directions, calculation and adjustment of variograms per population and elements to be estimated
- Detection and treatment of outliers
- Definition of the Block Model
- Definition of the estimation strategy and Kriging plans per element and population
- Estimation of grades for each element of each population
- Categorization of resources
- Validation of the Model through:
    - Comparative statistics between composites and estimated blocks
    - Analyses of smoothing of grades
    - Moving window analyses of composites and blocks estimated in different directions and Nearest Neighbor comparison
    - On screen validation
- Final Report of the geological resources by category

14.4 Database

MC has executed three main drilling campaigns in the area to date; the first two correspond to the exploration, delineating and further infill drilling of the Marimaca 1-23 southern part of the deposit, then successive campaigns extend the deposit towards north and north-west. During 2021 and 2022 MCC discovered mixed and sulphide mineralization beneath the oxide blanket and started a new delineation and infill drilling program carried out in 2022. The following are summarized exploration tasks to date:

- 2015: geological surface reconnaissance as well as an UAV flight for orthorectification image and a detailed topographic map. Image processing was performed to emphasize lithology, structures, distribution of iron oxides and alteration. A geochemical rock grid spaced at 100 x 100 m was completed and assayed for Cu. A magnetic survey was done using Mag-Drone™ technology.

- 2016: RCH and DDH drilling campaigns were performed, the first one was discovery drilling totaling 15 RC holes; 2,710 m. In light of the good results, a 100 x 100 m grid for drilling was completed, using two orientations controlled to cut the primary and secondary structural directions of the mineralization. A total of 8,910 m of RC drilling in 39 holes and another 2,008 m of DDH in 6 holes was completed. With these results, the first resource estimation exercise was done, published in January of 2017 (NCL, 2017).

- 2017: drilling was performed following the two orientations in a 50 x 50 m Infill Program. A total of 11,928 m RC in 59 holes was drilled. Another 820 m in 4 PQ drill holes for metallurgical purposes was added and a further 1,230 m in 6 holes with HQ3 methodology for geotechnical purposes was completed.

- At the end of 2017 another 11 RC holes totaling 2,950 m were drilled to explore the NE extension of the Marimaca style mineralization always inside the mining concession; and because at this time the La Atómica 1-10 concesion was optioned a first set of 14 RC holes totaling 3,220 m discovery holes were completed.

- Starting in 2017 an intensive program of 1:5,000 to 1:1,000 metric scale detailed and systematic geologic mapping program has been carried out on most of the interest area.

- At the same time underground workings and road cuts have been mapped and sampled.

- 2018-2019 following the mining property consolidation, towards north with the acquisition of the Atahualpa and Olimpo mining concessions group, the so called Phase II of drilling oriented to the discovery confirms the extension of the oxide body and this delineation was successfully completed, by means the drilling of 70 RC, 16,150 m and 9 DDH, 2,203 m at La Atómica 1-10 and 138 RC holes, 36,366 m and 14 DDH´s, 2,715 m at Atahualpa and Tarso sectors.

- 2021, MC drilled deep holes targeting sulphide mineralization beneath oxide blanket. This program resulted in the discovery of attractive mixed and secondary sulphide mineralization extending at depth. This mineralization was probed by re-entry of historic holes

- 2022 infill RC drill program confirms the extension of the mixed and secondary sulphide mineralization as well as completed the delineation and infill of the central- northern part of deposit and the new mineralization extensions, for the purpose of improvement of resource category.

The tonnage and grades from the previous and most recent exploration and delineation drilling and surface-subsurface geologic work has been integrated and these results are included in this report.

The NI 43-101 2022 MRE database contains the information shown in Table 10-1.

All samples without grade value in the database were eliminated prior to the resource modeling, also values labeled <0.001% were changed to 0.0005% for both CuT and CuS.

A total of 634 core samples from the DDH campaigns were used for specific gravity calculations.

In the opinion of NCL, the analytical results are free of apparent bias. The sampling preparation, security, and analytical procedures used are consistent with generally accepted industry best practices and are therefore adequate to support Mineral Resource estimation.

14.5 Analysis of DDH vs RC Twin Holes

Several new twin holes were drilled for this Resource update; therefore, the twin-holes analysis performed in 2019 was updated in full. Details of this update are contained in NCL's Technical Note "Twin Hole Analysis for the Marimaca Copper Project, Antofagasta Province, Region II, Chile", NCL, February 2023, whose main conclusions are summarized here.

Attending to the new data available, the analysis considered three sets of twin holes, for comparative purposes:

- All pairs (RC vs DDH plus RC vs RC).
- RC vs DDH
- RC vs RC

Results of these comparisons are described as follows.

14.5.1 Methodology

The analyses were done using the software Get-Pairs, from the GSLib library, and spreadsheets for further analysis. The three populations of twin holes were identified and separated in independent files.

For all the borehole sets, the software was run using 4, 5 and 10 metres maximum separation between samples, generating CuT and CuS pairs of samples for each distance and population.

These pairs where then analyzed as follows:

- Calculation of the statistics of CuT and CuS for each type of sample.
- Generation of scatterplots

- Calculation of the QQ-Plots

A total of thirty eight pairs of twin holes were provided by MMC, as shown in the following planview. From these pairs, thirty two correspond to RC vs DDH pairs and six to RC vs RC. Previous to the analyses, a check of the samples' length was done. Practically all samples are 2.0 m long, with only 5 samples of the 10,106 total samples shorter, (0.05%); therefore no compositing was done.

The following table shows the identification of the pairs of twin holes used in this analysis. Figure 14-6 shows a planview of the twin holes.

Table 14-1: Twin Holes Identification

Name	North	East	Elev	Az (º)	Dip (º)	Initial Depth (m)	Final Depth (m)
MAD-02B	7435209.08	375059.029	1051.052	220	-55	322	322
MAR-11	7435210.27	375061.478	1050.711	220	-55	170	170
MAD-15	7435609.56	374824.737	1132.899	220	-60	200.05	200.05
MAR-59	7435604.06	374822.77	1132.718	220	-60	200	200
MAD-03	7435408.88	375004.408	1095.245	277	-60	406	406
MAR-03	7435410.87	375004.374	1095.422	275	-60	200	200
MAD-01	7435209.55	375075.141	1050.449	310	-55	421.05	421.05
MAR-10	7435207.32	375073.708	1050.34	310	-55	170	170
MAD-05	7435430.02	374915.356	1057.566	310	-60	330	330
MAR-04	7435431.79	374916.273	1056.966	310	-60	200	200
MAD-10	7435480.85	374898.296	1084.057	310	-60	220	220
MAR-19	7435480.43	374894.699	1084.006	310	-55	300	420
MAD-06	7435528.79	375117.733	1113.469	330	-55	209	209
MAR-07	7435527.2	375115.994	1113.508	330	-55	210	350
ATD-01	7435711	374987.455	1053.869	270	-60	200	200
ATR-39	7435709.39	374988.284	1053.99	270	-60	250	250
ATD-02	7435714.51	374987.798	1053.693	220	-60	210	210
ATR-04	7435713.46	374988.264	1053.906	220	-60	350	350
ATD-04	7435797.33	375013.461	1048.213	220	-60	250	250
ATR-08	7435797.44	375014.925	1048.098	220	-60	350	350
ATD-05	7435795.63	375012.153	1047.822	270	-60	300	300
ATR-66	7435797.49	375014.958	1048.151	270	-60	350	350
ATD-06	7435813.92	374925.584	1039.057	310	-60	150	150
ATR-01	7435815.58	374924.369	1038.915	310	-60	250	250
ATD-08	7436000.7	375041.446	1100.334	270	-60	300.5	300.5
ATR-53	7435998.42	375037.36	1100.293	270	-60	250	250
ATD-09	7436093.01	375027.084	1110.745	220	-60	305	305
ATR-67	7436088.4	375027.508	1110.837	220	-60	250	250
ATD-10	7436074.23	374879.248	1029.467	310	-60	150	150
ATR-29	7436075.5	374876.91	1029.335	310	-60	250	250
ATD-11	7435901.41	375055.162	1094.25	220	-60	266	266
ATR-93	7435897.13	375053.816	1094.359	220	-60	300	300
ATD-12	7435796.83	374959.225	1037.465	310	-60	300	300
ATR-94	7435799.33	374959.05	1037.457	310	-60	200	200
ATD-13	7435744.94	375041.497	1046.149	270	-60	158	158
ATR-77	7435746.56	375037.946	1045.795	270	-60	200	200
LAD-02	7435651.88	374780.864	1118.822	310	-60	300.1	300.1
LAR-33	7435650.85	374778.928	1118.791	310	-60	350	350
LAD-03	7435648.85	374781.927	1119.156	220	-60	250.1	250.1
LAR-32	7435647.05	374782.595	1118.937	220	-60	350	350
LAD-04	7435758.12	374803.674	1102.192	310	-60	218	218
LAR-05	7435760.21	374798.382	1102.022	310	-60	250	250
LAD-05	7435733.74	374862.069	1103.624	306	-60	200	200
LAR-24	7435731.36	374861.704	1103.847	310	-60	250	350
LAD-06	7435733.91	374861.883	1103.584	220	-60	400.5	400.5
LAR-23	7435723.91	374864.622	1104.098	220	-60	400	400
LAD-07	7435860.25	374800.808	1062.362	270	-60	176.3	176.3
LAR-80	7435858.85	374797.425	1062.22	270	-60	250	250
LAD-08B	7435858.88	374801.392	1062.599	220	-60	158	158
LAR-14	7435856.61	374799.427	1062.245	220	-60	200	200
LAD-09	7435963.43	374715.468	996.268	220	-60	250	250
LAR-19	7435959.58	374715.188	996.766	220	-60	180	180
MAR-17	7435519.5	374925.222	1103.484	310	-55	200	500
MAR-18	7435517.4	374922.202	1103.552	310	-55	250	250
MAD-18	7435620.33	374955.36	1111.467	220	-60	350	350
MAR-68	7435615.85	374954.06	1111.43	220	-60	250	450
LAD-10	7435760.66	374806.835	1102.749	220	-60	300	300
LAR-06	7435754.31	374805.218	1102.453	220	-60	300	450
ATD-15	7435994.33	374932.066	1029.849	220	-60	250	250
ATR-96	7435990.62	374927.72	1030.103	220	-60	250	250
ATD-14	7436363.56	374850.727	1086.025	220	-60	200	200
ATR-99	7436358.81	374856.681	1086.253	220	-60	300	300
MAD-21	7435269.74	374927.937	1037.949	220	-60	250	250
MAR-100	7435263.87	374926.802	1038.017	220	-60	150	150
MAR-33	7435370.23	374877.597	1061.386	310	-55	90	90
MAR-33B	7435372.15	374875.223	1061.434	310	-55	200	200
MAR-151	7435513.86	375184.382	1120.262	310	-55	300	300
MAR-41	7435512.26	375186.493	1119.825	310	-55	200	200
MAR-145	7435757.25	374864.833	1095.428	220	-60	150	150
MAR-145A	7435758.77	374865.823	1095.374	220	-65	470	470
MAR-153	7435470.33	374831.932	1076.851	220	-60	350	350
MAR-85	7435470.77	374832.961	1076.798	220	-60	200	200
MAR-175	7435607.77	375132.347	1137.786	220	-60	114	114
MAR-175A	7435609.97	375133.836	1137.828	220	-70	250	250
LAD-01	7435737.73	374685.714	1084.772	310	-60	250	250
LAR-03	7435736.05	374684.72	1084.76	310	-60	250	350

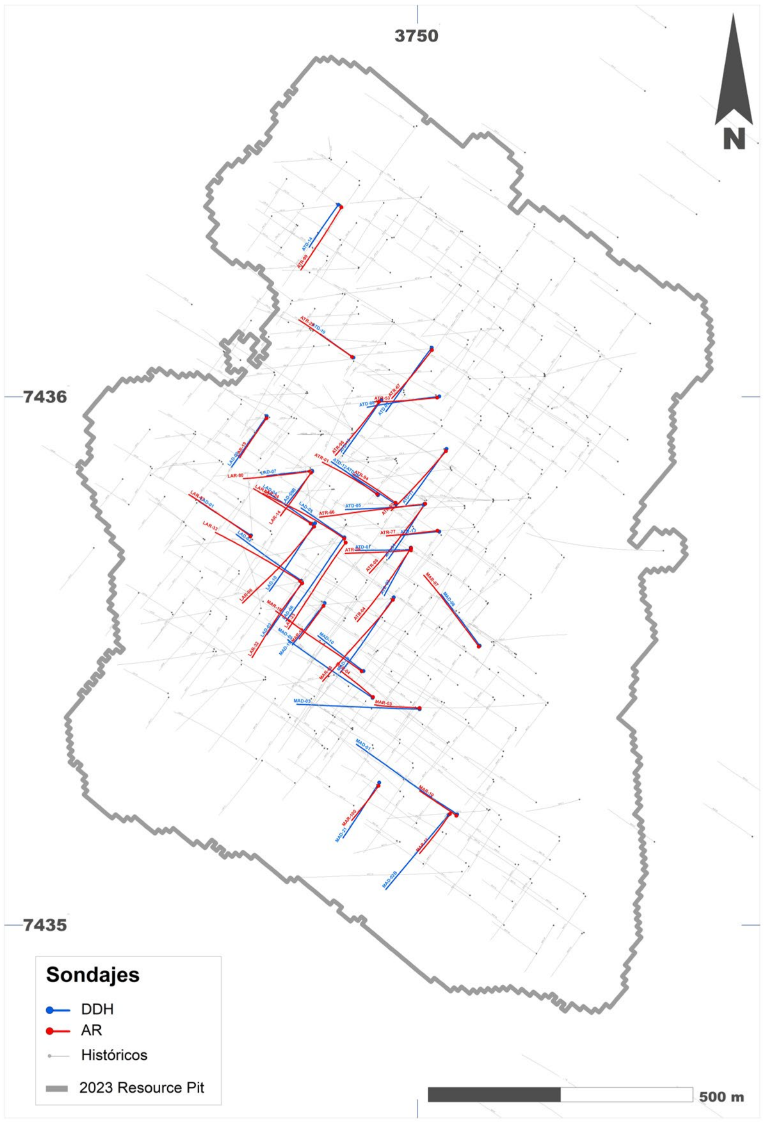


Figure 14-6: Twin Holes Location – Planview Provided by MMC

As mentioned, the software Getpairs was run for a maximum distance of 4.0; 5.0 and 10.0 m between samples. Each run generated a set of pairs that were analyzed for comparative purposes.

The 4.0 m separation was selected for more detailed analysis. For this distance, a total of 4,113 pairs were obtained, from which 3,625 correspond to RC vs DDH pairs and 494 to RC vs RC. Statistics from these populations are shown in the following tables:

Table 14-2: Statistics; All Twin Holes

Population	Grade	Max Sep (m)	Number of Pairs	Mean (%)		STD		CV		Max Grade (%)	
				ALL1	ALL2	ALL1	ALL2	ALL1	ALL2	ALL1	ALL2
ALL1 VS ALL2	CuT	4m	4113	0.50	0.47	0.82	0.71	1.62	1.52	10.93	7.42
	CuS	4m	4113	0.35	0.31	0.60	0.57	1.73	1.81	6.84	6.91

Table 14-3: Statistics; DDH vs RC Twin Holes

Population	Grade	Max Sep (m)	Number of Pairs	Mean (%)		STD		CV		Max Grade (%)	
				RC	DDH	RC	DDH	RC	DDH	RC	DDH
RC VS DDH	CuT	4m	3625	0.54	0.50	0.86	0.75	1.58	1.48	10.93	7.42
	CuS	4m	3625	0.37	0.34	0.63	0.59	1.69	1.76	6.84	6.91

Table 14-4: Statistics; RC vs RC Twin Holes

Population	Grade	Max Sep (m)	Number of Pairs	Mean (%)		STD		CV		Max Grade (%)	
				RC1	RC2	RC1	RC2	RC1	RC2	RC1	RC2
RC1 VS RC2	CuT	4m	494	0.24	0.22	0.34	0.27	1.45	1.24	3.29	1.47
	CuS	4m	494	0.17	0.14	0.30	0.23	1.82	1.69	2.87	1.37

14.5.2 Conclusions of the Twin Holes Analysis.

The following conclusions can be derived from the analyses:

- The deposit presents an inherent grade dispersion that is reflected in the RC vs RC analysis. This dispersion is also observed in the RC vs DDH analysis.
- The grade distribution of the different populations are similar, as shown in the QQ-Plots prepared.
- The small difference of the means of the compared populations is always in favor of the RC samples. This is typical from the oxide deposits, where the effect of water in the DDH drilling produces some washing of the ore. Marimaca has made consistent efforts to minimize this effect, reducing the amount of water to the minimum acceptable from the technical point of view, but still some minor effect is observed.
- The dispersion observed is typical of the deposit, since when cross-validating with the nearest neighbor, the same behavior is observed; therefore it was concluded that the use of DDH and RC samples together does not introduce any bias in the data.
- According to the above; NCL do not see any sound reason to impede the use of DDH and RC samples jointly in for Resource estimation.

14.6 Sample Statistic

Samples from the database have been coded based on the updated geological model 3D solids codes, according to the solid that contains the sample centroid. Tables 14-5 and 14-6 show the basic statistic per population, according to the original MZ database codes and the new codes obtained from the 3D solids.

Table 14-5: Sample Statistic for CuT, per Rock Type.

Statistic	Original Raw Data CUT					
	Brochantite	Chrysocolla	Enriched	Mixed	Wad	Chalcopyrite
N° Sample	7585	5135	4225	2903	7046	1466
Minimum %	0.044	0.024	0.021	0.094	0.05	0.09
Maximum %	14.43	5.01	16.22	19.25	1.80	20.65
Mean %	0.72	0.43	0.62	0.61	0.20	0.90
Std. Dev.	0.80	0.43	1.02	1.01	0.12	1.67
Coef. of Var.	1.10	0.99	1.64	1.66	0.60	1.85

Statistic	Solid Coded Data CUT						
	Brochantite	Chrysocolla	Enriched	Mixed	Wad Cu => 0.1	Wad Cu < 0.1	Chalcopyrite
N° Sample	9905	5473	6799	9176	4862	5847	1056
Minimum %	0.002	0.001	0.001	0.001	0.003	0.002	0.004
Maximum %	19.25	14.08	8.29	13.21	7.90	1.96	20.65
Mean %	0.57	0.40	0.22	0.34	0.28	0.07	0.52
Std. Dev.	0.83	0.58	0.52	0.81	0.34	0.10	1.39
Coef. of Var.	1.45	1.43	2.39	2.38	1.22	1.35	2.69

Table 14-6: Sample Statistic for CuS, per Rock Type.

Statistic	Original Raw Data CUS					
	Brochantite	Chrysocolla	Enriched	Mixed	Wad	Chalcopyrite
N° Sample	7585	5135	4225	2903	7046	1466
Minimum %	0.01	0.004	0.002	0.009	0.00	0.001
Maximum %	13.85	4.66	1.44	6.49	1.24	0.77
Mean %	0.60	0.34	0.07	0.24	0.08	0.03
Std. Dev.	0.74	0.38	0.09	0.44	0.07	0.05
Coef. of Var.	1.24	1.15	1.33	1.84	0.93	1.70

Statistic	Solid Coded Data CUS						
	Brochantite	Chrysocolla	Enriched	Mixed	Wad Cu => 0.1	Wad Cu < 0.1	Chalcopyrite
N° Sample	9905	5473	6799	9176	4862	5847	1056
Minimum %	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Maximum %	13.85	6.89	2.78	6.49	6.44	1.82	5.25
Mean %	0.41	0.30	0.04	0.09	0.15	0.03	0.04
Std. Dev.	0.67	0.45	0.09	0.24	0.26	0.07	0.23
Coef. of Var.	1.62	1.50	2.23	2.77	1.75	2.30	6.64

It can be noted from the above given tables, that all the samples with CuT grade have a CuS value. A check for eventual CuS values greater than CuT grades was done and no contradictions were found. Therefore, the samples to be used in the grade modeling process are the raw samples from the drill hole database, coded according to the MZ solid that contain their centroids.

14.7 Contact Analyses

The contact characteristics between the MZ units to estimate have been reviewed, according to the mean grade of the samples, in relation to their distance to the contact defined in the updated solids model. As an example of the analyses carried out, Figures 14-7, 14-8 and 14-9 show the conduct of the CuT grades along the border of the contact between the most relevant units.

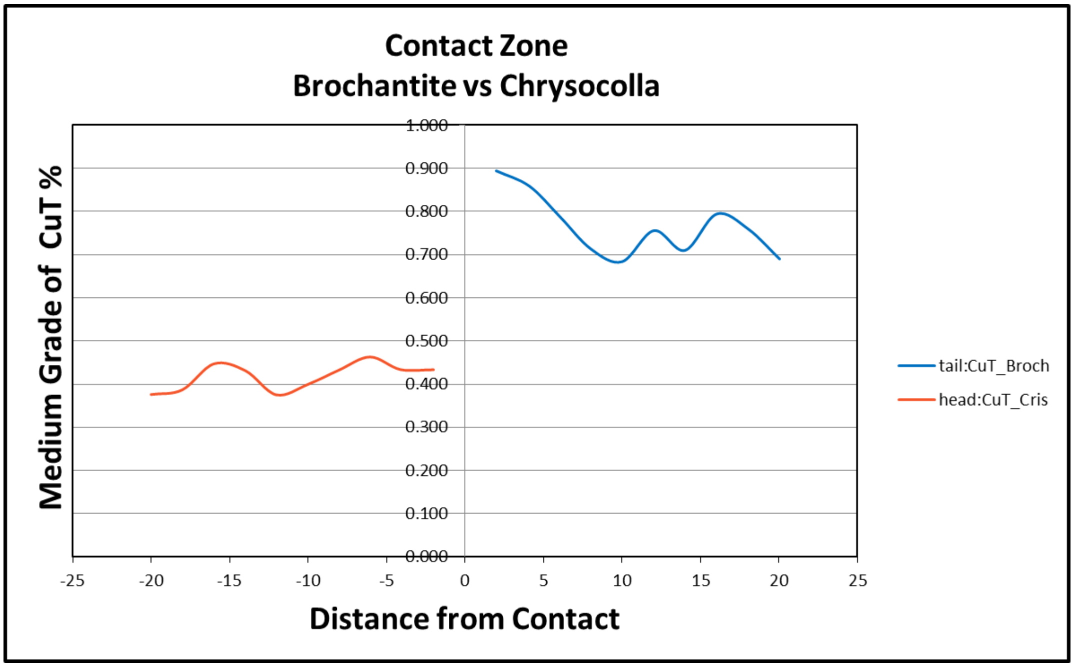


Figure 14-7 : Brochantite - Chrysocolla Contact, Cut

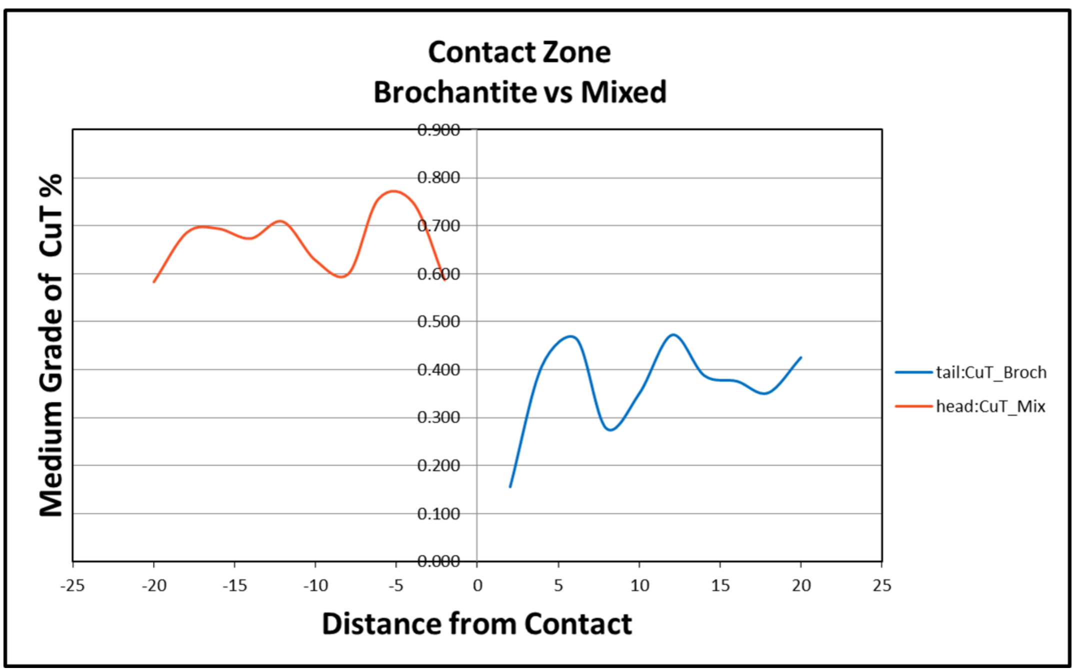


Figure 14-8: Brochantite – Mixed Contact, CuT

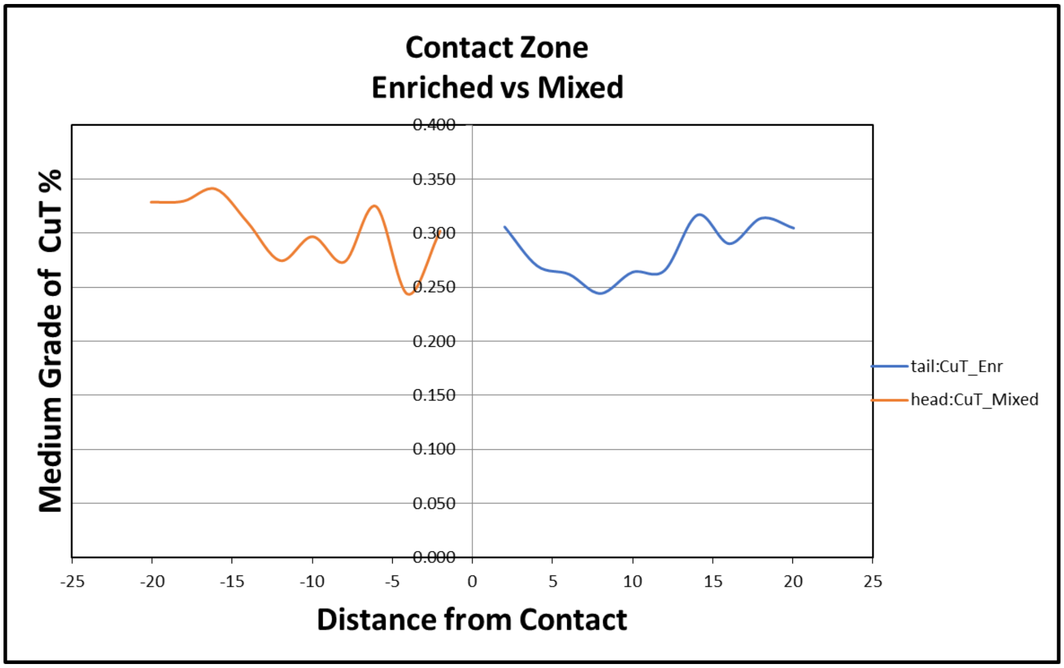


Figure 14-9: Enriched - Mixed Contact, CuT

The analysis of the contact figures showed that all contacts seem hard, with the exception of the Enriched – Mixed one. Therefore it was decided to estimate these MZ together and all the others as independent populations.

14.8 Outliers

An analysis of the existence of outliers in the estimation populations was done using the log-probability curves for each samples' population, looking for some singularities in the curves that may signal the presence of an outlier limit.

Figure 14-10 shows, as an example, the log-probability plot of brochantite:

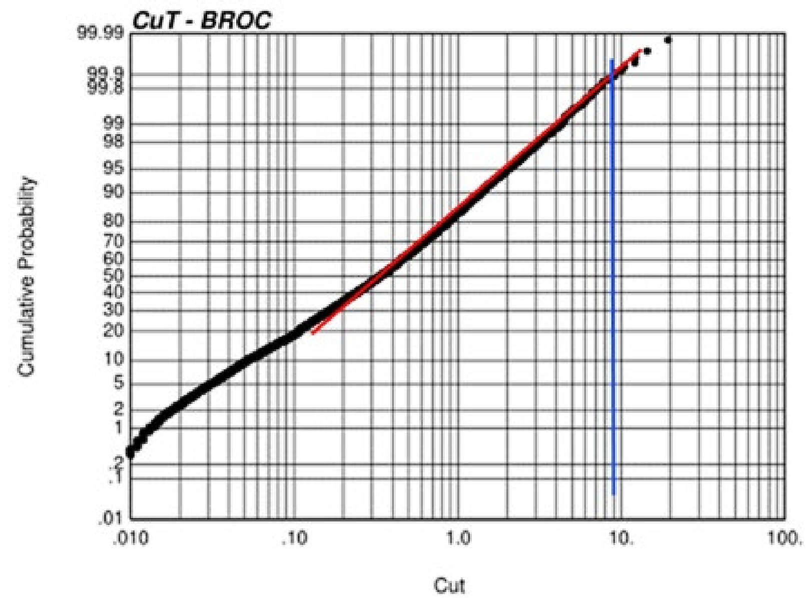


Figure 14-10: Log-Probability Plot CuT – Brochantite

Based on the shape of the curves, the outliers' limits were defined for each population, as shown in Table 14-7.

Table 14-7: Outliers Limits.

Zone Mineral	CuT (%)	CuS (%)
	Capping	Capping
Brochantite	9	6
Chrysocolla	3.2	2.9
Enriched + Mixed	5.5	2.4
Wad CuT >= 0.1%	2.4	1.8
Wad CuT < 0.1%	0.7	0.5
Chalcopyrite	4	0.18

For values above the above-defined limits, at the estimation stage the search ellipsoid will have a radius of 5 meters, encapsulating the outliers to the block that contains them, maintaining the value of the high grade sample, but restricting their influence to the blocks that contain them. This decision was taken considering the real presence of outliers values in the deposit, as seen in the site visits to the underground excavations and the samples' inspection.

14.9 Calculation and Variogram Adjustment

Correlograms were calculated, instead of conventional variograms, as they are considered more stable. Correlograms were performed for the 5 Mineral Zones of the geological model. The variography of CuT has been developed using the samples of the populations derived from the Contact Analysis.

Table 14-8 shows the parameters of the adjusted CuT Correlograms. Figure 14-11 shows, as an example, the adjusted correlogram for Brochantite.

Table 14-8: Correlograms, Adjusted Models, CuT

					1st Structure				2st Structure				2st Structure			
ZMIN	Principal Azimut	Principal Dip	Intermediate Azimut	Nugget	Sill 1	Range (m)			Sill 2	Range (m)			Sill 2	Range (m)		
						X´	Y´	Z´		X´	Y´	Z´		X´	Y´	Z´
Brochantite	23	-35	113	0.3	0.45	33	50	9	0.25	85	75	65				
Chrysocolla	150	-65	60	0.4	0.35	60	48	50	0.25	120	70	120				
Enriched + Mixed	95	-45	5	0.35	0.15	10	48	6	0.4	48	48	42	0.1	220	48	42
Wad	90	-40	0	0.35	0.20	32	15	25	0.45	54	52	60				
Chalcopyrite	100	-62	10	0.15	0.60	45	52	14	0.25	45	_1	70				

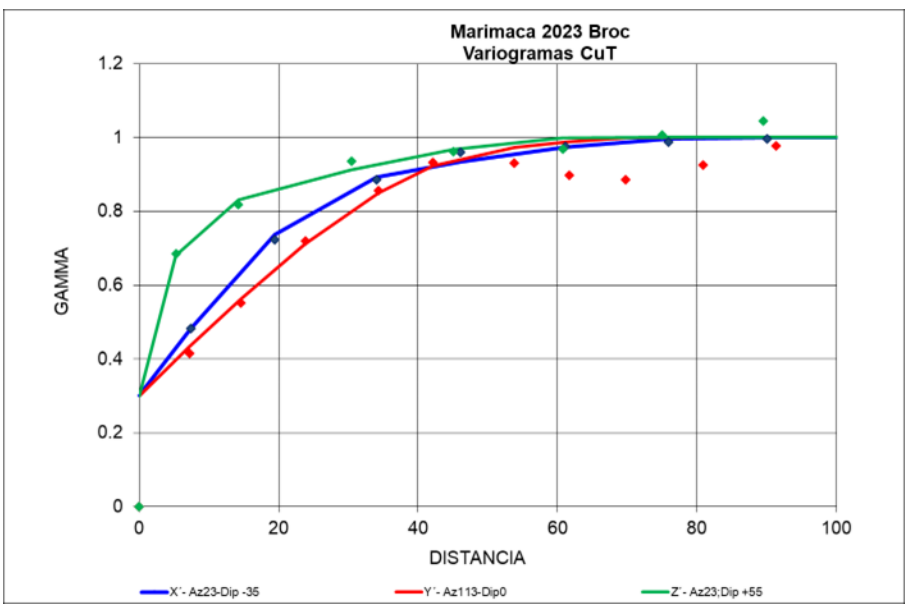


Figure 14-11: CuT Correlogram – Brochantite

It was decided to use the CuT correlograms to estimate both, CuT and CuS, in order to prevent the generation of CuS grades greater than the CuT values.

14.10 Definition and Generation of the Block Model

Attending to the characteristics of the deposit and the geological model constructed, it was decided to use a percentage model, as featured in the modelling software GEMS. This approach has proved to be adequate in previous estimations for the Marimaca deposit. During the grade estimation process, the grade for each Mineral Zone was estimated for each block.

As in previous estimations developed, a block model of 5m*5m*5m, rotated N 40º E was used, in order to match with the geological sections. Table 14-9 presents the geometric parameters of the model, which was expanded in relation with previous estimations, to reflect the increase of the explored area and the size of the updated geological model.

Table 14-9: Definition of the Block Model.

Axis	Minimum	Maximum	N° of Blocks	Block Size	Extension (m)
X	375,018.597	376,993.597	395	5	1,975
Y	7,434,324.224	7,436,099.224	355	5	1,775
Z	225	1,225	200	5	1,000
Rotation	N40°E				

Using the interpretation of the mineral zones, the respective models were generated, assigning the codes defined per each block of the model, using the intersection of the blocks and the respective solids. According to the blocks and the definition of the populations, a final model has been generated with a unique code per each block of the model and Table 14-10 presents a summary of the codification used.

Table 14-10:Total Coded Blocks

Domain	N°Blocks	Volume m^3
Brochantite	270,492	26,548,777
Chrysocolla	208,873	19,364,623
Enriched	446,801	44,887,405
Mixed	365,580	36,321,765
Wad CuT >= 0.1%	199,730	16,208,485
Wad CuT < 0.1%	375,447	32,894,496
Chalcopyrite	95,679	8,983,066
Total	**1,962,602**	**185,208,617**

14.11 Geological Model Coding

The remaining blocks below surface topography were coded as waste. Validation of the correctness of the rock coding was done, checking some sections and plans on screen. Figure 14-12 shows Section NW 300, with the solid's contour, the coded boreholes and the block model.

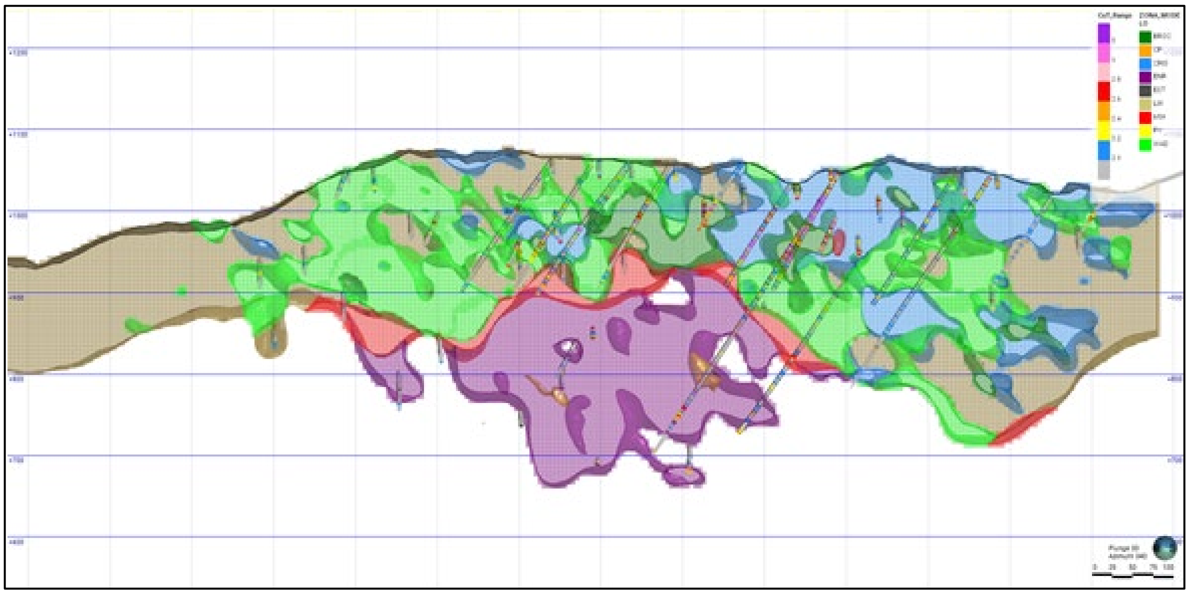


Figure 14-12: Solids, Blocks and Samples - Section NW 300 view to NE, Marimaca Copper Corp., 2023

14.12 Specific Gravity Model

The average specific gravity of each estimation unit was calculated using a set of 634 measures, divided according to each mineral zone. Outliers were eliminated. The following Table shows the specific gravity for each of the mineralized zones. (Table 14-11).

Table 14-11: Specific Gravity per Unit

SZMIN	Mean (t/m3)
Brochantite	2.639
Chalcopyrite	2.746
Chrysocolla	2.665
Enriched	2.681
Mixed	2.695
Wad	2.628
Lix	2.657
Pyrite	2.729
Waste	2.642

14.13 Kriging Plans and Resource Classification Criteria

The grade interpolation method selected was Ordinary Kriging, attending to the nature of the deposit and the data availability. The kriging was done using the software Gems. Four kriging plans were defined, to be executed in sequential order, starting with a restrictive estimation plan that considers only interpolation between drill holes, separated distances below the equivalent of 85% of the variogram sill. Then, the following plans increase the search distance and release other restriction gradually, until the estimation is complete.

The geometric parameters of the estimation of each kriging plan are shown in Table 14-12.

Table 14-12: Kriging Plan Parameters

Estimation Plan	Run1	Run2	Run3	Run4
Max N° Composite per Octant	4	4	4	4
Min N° of Octants with inf.	3	3	1	1
Min N° of Composites	8	6	4	4
Max N° of Composites	12	12	12	12
Search Range	D85	2 x D85	4 x D85	1000
Min N° of Drillhole	2	2	1	1

Each population was estimated with its own samples.

The utilized D85 for each population are shown in Table 14-13, where it can be noted that anisotropic search was used for all estimation units:

Table 14-13: D_{85} per Direction and Population (m)

ZMIN SOLID	D_{85} X	D_{85} Y	D_{85} Z
Brochantite	28	34	18
Chrysocolla	44	31	40
Enriched	30	28	22
Mixed	30	28	22
Wad	27	25	29
Chalcopyrite	29	31	19

14.14 Grade Estimation Results

Table 14-14 summarizes the number of blocks estimated in each kriging pass per kriging domain.

Table 14-14: Estimation Results; CuT and CuS

SZMIN	Total N°Blocks	Total N°Blocks Estimated	Total N° Blocks Estimated in 1st Pass		Total N° Blocks Estimated in 2nd Pass		Total N° Blocks Estimated in 3rd Pass		Total N° Blocks Estimated in 4th Pass	
			N° of Blocks	% of Total Estimated	N° of Blocks	% of Total Estimated	N° of Blocks	% of Total Estimated	N° of Blocks	% of Total Estimated
Brochantite	270,492	270,492	115,099	43%	124,948	46%	29,356	11%	1,089	0.4%
Chrysocolla	208,873	208,873	102,496	49%	73,475	35%	32,902	16%	0	0%
Enriched	446,801	446,801	99,613	22%	197,309	44%	147,107	33%	2,772	1%
Mixed	365,580	365,580	124,479	34%	146,256	40%	80,989	22%	13,856	4%
Wad (CuT>=0.1)	199,730	199,730	45,779	23%	98,996	50%	54,531	27%	424	0%
Wad (CuT<0.1)	375,447	375,447	59,763	16%	168,922	45%	142,469	38%	4,293	1%
Chalcopyrite	95,679	95,679	8,245	9%	21,076	22%	59,853	63%	6,505	7%
Total	**1,962,602**	**1,962,602**	**555,474**	**28%**	**830,982**	**42%**	**547,207**	**28%**	**28,939**	**1%**

14.15 Classification of Resources

Resource Classification has been done according to the conditions defined by the number and location of samples in the neighborhood of each block, as show in Table 14-12. This criterion attends the requirements established at the CIM code.

For the classification, the 1st pass generates block estimates with a minimum of two drill intercepts, both within distances shorter than the D_{85} (distance corresponding to the point where the correlogram reaches 85% of the sill); The 2nd pass maintains the restriction of the number of drill intercepts, but enlarges the search range by twice the D_{85}.

Pass 1 generates Measured resources, Pass 2 generates Indicated and Pass 3 increments the search radius to 4 times the D_{85} and reduces the number of drill holes within this range to one, generating Inferred Resource. A fourth pass was added using a very large search radio, in order to ensure that all the blocks inside the geological model are estimated.

Taking these criteria into account, the categorization of resources has been done according to Table 14-15.

Table 14-15: Kriging Passes and Resource Classification

N° Kriging	Search Range	N° Intercepts	Classification
1	D_{85}	2	Measured
2	2 x D_{85}	2	Indicated
3	4 xD_{85}	1	Inferred

A classification code was added to the block model. The codes utilized to this model are: 1, Measured; 2 Indicated; 3 Inferred.

14.16 Resource Model Validation

To ensure the adequate quality of the generated model, three validation exercises were performed, as described in this chapter.

- Visual Validation
- Statistic Validation
- Moving window Analysis and Nearest Neighbor modelling.

The results of these validations are presented below.

Visual Validation

Several plan views and vertical sections of the block model were prepared, comparing the grades of the blocks and the drill holes. Also the resource classification was analyzed comparing the existing information. As an example, the results of this validation are presented in Figures 14-13 and 14-14.

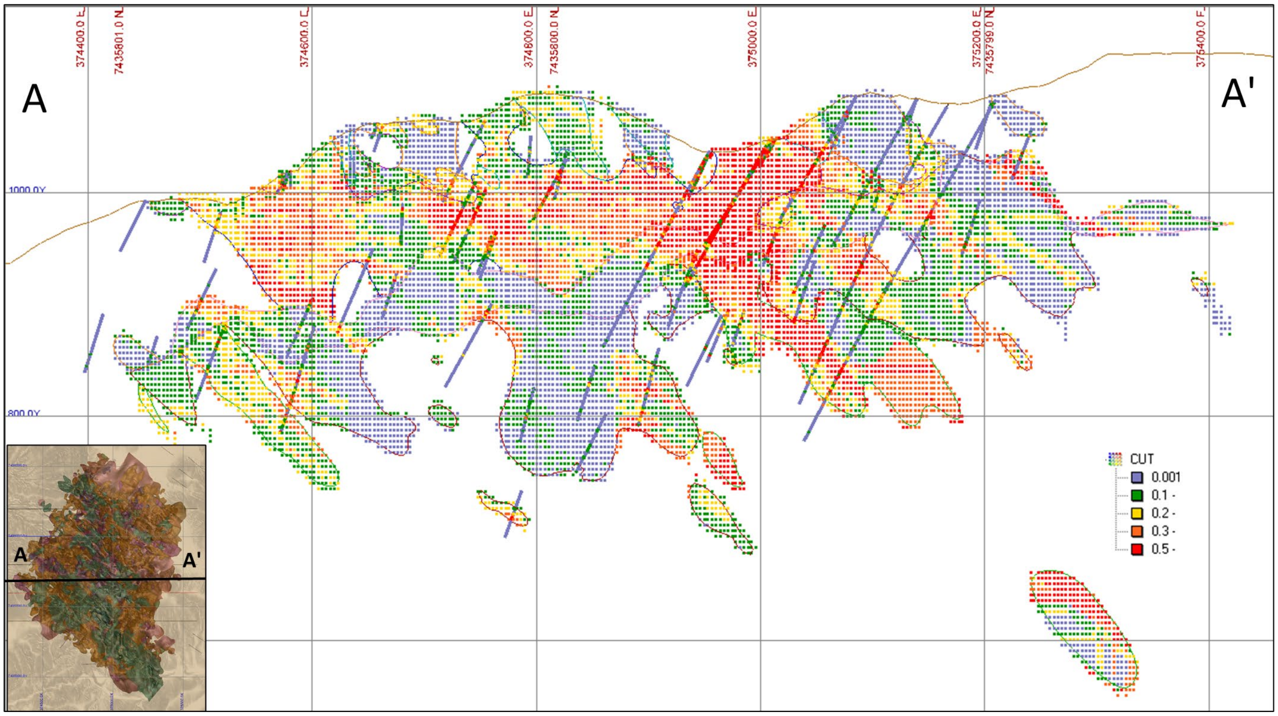


Figure 14-13: Visual Revision of the Model of CuT – Section A-A', Marimaca Copper Corp., 2022

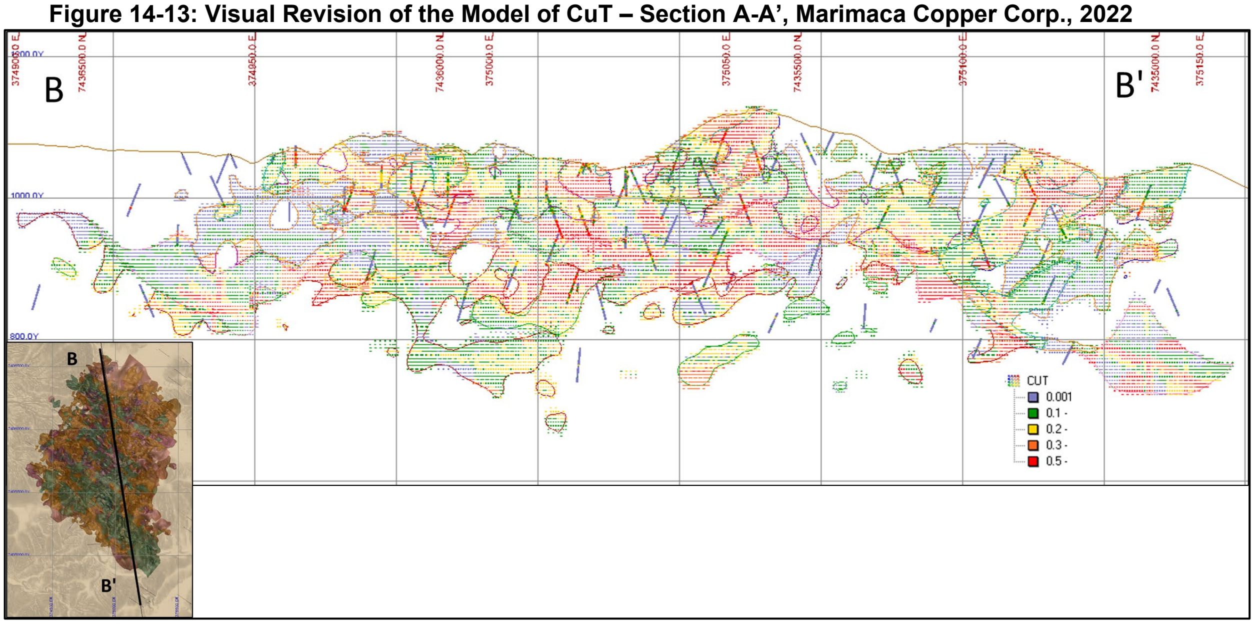


Figure 14-14: Visual Revision of the Model of CuT – Section B-B', Marimaca Copper Corp., 2022

Statistical Validation

Tables 14-16 and 14-17 present a comparison of the basic statistic of composites and blocks per population. Also included in the comparative Table are the declustered grades, obtained through the technique of nearest neighbor.

Table 14-16: Statistic Comparison, Blocks vs Composites – CuT

SZMIN	Var.	N° Sample	Min %	Max %	Average %	Std.Dev.	Coef. Of Var.
Brochantite	Kriged Block	270492	0.013	5.28	0.55	0.41	0.75
	NN Blocks	270492	0.002	9.00	0.54	0.74	1.38
	Samples	9905	0.002	19.25	0.57	0.83	1.45
Chrysocolla	Kriged Block	208873	0.012	2.26	0.36	0.22	0.62
	NN Blocks	208873	0.001	3.20	0.36	0.45	1.24
	Samples	5473	0.001	14.08	0.40	0.58	1.43
Enriched	Kriged Block	446801	0.007	3.56	0.23	0.23	0.99
	NN Blocks	446801	0.001	5.50	0.23	0.47	2.04
	Samples	15975	0.001	13.21	0.29	0.70	2.44
Mixed	Kriged Block	365580	0.009	3.75	0.26	0.30	1.17
	NN Blocks	365580	0.001	5.50	0.25	0.56	2.22
	Samples	15975	0.001	13.21	0.29	0.70	2.44
Wad >=0.1	Kriged Block	199730	0.061	1.79	0.28	0.14	0.52
	NN Blocks	199730	0.003	2.40	0.27	0.29	1.08
	Samples	4862	0.003	7.90	0.28	0.34	1.22
Wad	Kriged Block	375447	0.010	0.44	0.08	0.04	0.46
	NN Blocks	375447	0.002	0.70	0.08	0.09	1.11
	Samples	5847	0.002	1.96	0.07	0.10	1.35
Chalcopyrite	Kriged Block	95679	0.006	3.75	0.39	0.40	1.03
	NN Blocks	95679	0.004	4.00	0.40	0.77	1.92
	Samples	1056	0.004	20.65	0.52	1.39	2.69

Table 14-17: Statistic Comparison, Blocks vs Composites – CuS

SZMIN	Var.	N° Sample	Min %	Max %	Average %	Std.Dev.	Coef. Of Var.
Brochantite	Kriged Block	270492	0.002	3.67	0.39	0.32	0.82
	NN Blocks	270492	0.001	6.00	0.39	0.58	1.51
	Samples	9905	0.001	13.85	0.41	0.67	1.62
Chrysocolla	Kriged Block	208873	0.002	1.95	0.26	0.19	0.70
	NN Blocks	208873	0.001	2.90	0.26	0.37	1.42
	Samples	5473	0.001	6.89	0.30	0.45	1.50
Enriched	Kriged Block	446801	0.001	0.70	0.05	0.04	0.95
	NN Blocks	446801	0.001	2.40	0.05	0.09	1.94
	Samples	15975	0.001	6.49	0.07	0.19	2.90
Mixed	Kriged Block	365580	0.001	1.50	0.07	0.09	1.26
	NN Blocks	365580	0.001	2.40	0.07	0.17	2.51
	Samples	15975	0.001	6.49	0.07	0.19	2.90
Wad >=0.1	Kriged Block	199730	0.018	1.28	0.14	0.11	0.77
	NN Blocks	199730	0.001	1.80	0.14	0.22	1.56
	Samples	4862	0.001	6.44	0.15	0.26	1.75
Wad	Kriged Block	375447	0.002	0.31	0.03	0.02	0.71
	NN Blocks	375447	0.001	0.50	0.03	0.06	1.75
	Samples	5847	0.001	1.82	0.03	0.07	2.30
Chalcopyrite	Kriged Block	95679	0.001	0.18	0.03	0.02	0.89
	NN Blocks	95679	0.001	0.18	0.03	0.05	1.74
	Samples	1056	0.001	5.25	0.04	0.23	6.64

From the above Tables, it is concluded that the estimation shows no global bias.

Trend Analyses (SWAT Plots)

For trend analyses of the block model, the mean and the declustered mean of the samples has been compared with the block results. The comparison of mean grades of blocks versus direct mean and declustered mean of composites for each estimation domain, are presented in the following pages. Graphs include the number of composites per slice as a graph bar. As an example, the results of this validation for Brochantite are presented in the next Figures (14-15, 14-16 and 14-17).

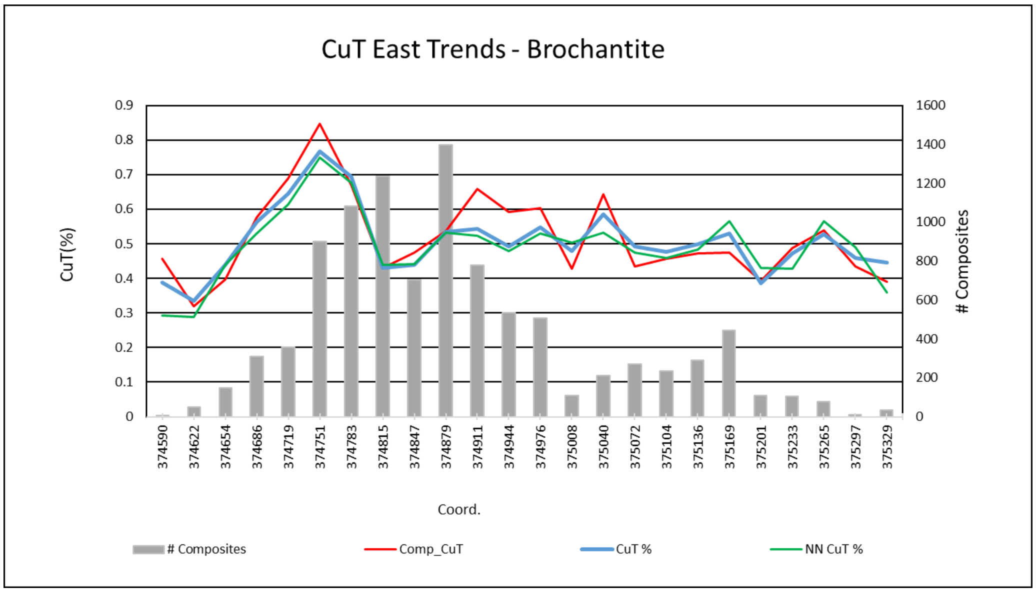


Figure 14-15: Trend Analysis – Brochantite – East Direction

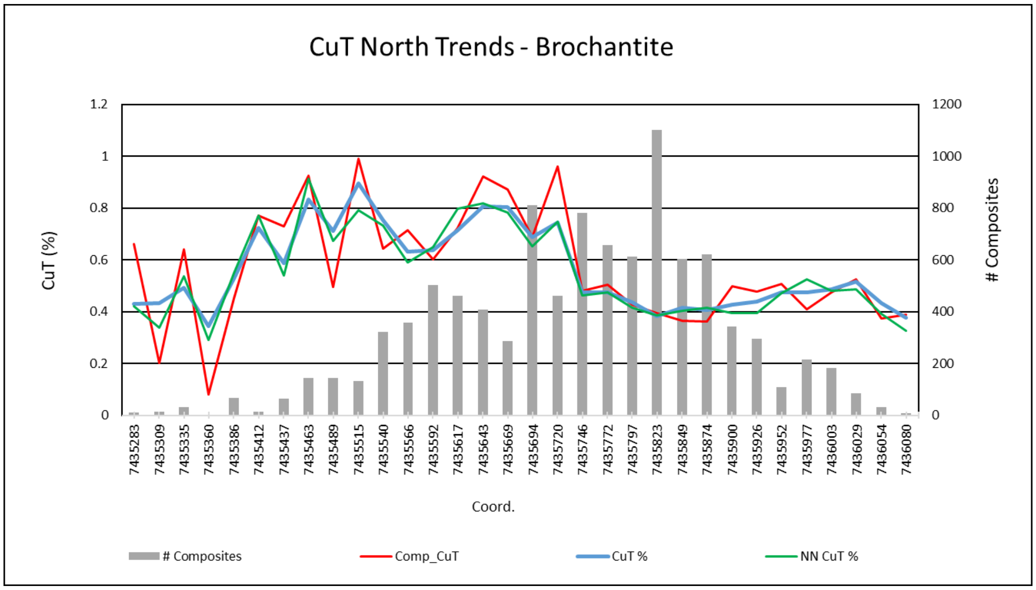


Figure 14-16: Trend Analysis – Brochantite – N Direction

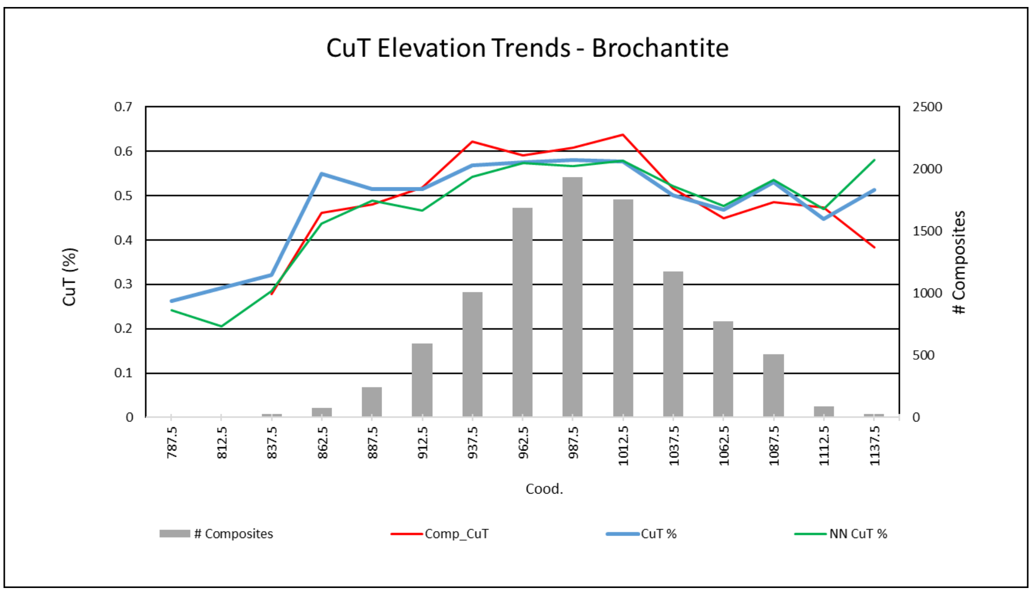


Figure 14-17: Trend Analysis – Brochantite – Elevation

The same analysis was made for the rest of the Mineral Zones and the estimated mean behaves in a satisfactory way, similarly to the declustered mean. Excessive smoothing is not observed.

It is concluded that the model of estimated grades, preserves the characteristic of the mean grade, global variability and tendencies of the original samples.

14.17 Reasonable Prospects for Eventual Economic Extraction

Once the block model was finished and validated, a Whittle pit was run using the following technical parameters, provided by Marimaca and agreed upon by NCL for Resource estimation (Table 14-18):

Table 14-18: Technical and Economical Parameters for Whittle Run

PARAMETERS	2023
Mining cost	$1.58/t
Mining Cost Adjustment Factor ("**MCaf**") ($/t-10m bench)	$0.04/t
Heap Leach ("**HL**") Process Cost (including G&A and SX/EW cost)	$5.946/t
Run of Mine ("**ROM**") Process Cost including G&A	$1.654/t
Selling Cost	$0.164/lb
Heap Leach Recovery	76%
ROM Recovery	40%
Pit Slope angle [1]	42° - 52°
Cu Price	4.0 USD/lb

[1] *The pit slope is estimated at a range of 42° - 52° based on the geotechnical information currently available, but this is anticipated to improve as more data is generated*

For the purpose of this Resource Estimation, no new changes to the mineral processing assumptions have been made relative to the 2020 MRE. Since the 2020 MRE, Marimaca has completed its Phase 5 Metallurgical Program which confirm and support the assumptions used. Phase 5 Metallurgy generated a robust geometallurgical dataset, with column tests completed at the 2020 PEA industrial operating conditions (4m column heights).

In this MRE, a fixed value of 76% was used for the heap leaching plant and 40% for the ROM leach, which are the same values used in 2019, which are supported by the results obtained in Phase 5 Metallurgy.

The technical and economical parameters used for the 2023 Whittle run were informed by the 2020 PEA assumptions, a comparison of which is presented below. Due to the designation of mined material to either heap leach or ROM, certain cost elements from mining costs have been reallocated to heap leach costs and ROM cost to be appropriately captured in the Whittle run. However, on an aggregate basis, they are identical. The 2020 PEA cost assumptions are considered to be the most relevant cost assumptions for the 2023 MRE Whittle run at this stage.

Table 14-19: Technical and Economical Parameters for Whittle Run relative to 2020 PEA assumptions

PARAMETERS	2020 PEA	2023 MRE
Mining cost (base)	$1.76/t LOM avg. ($1.51/t base)	$1.51/t base ($1.76/t LOM avg)
MCaf ($/t-10m bench)	$0.04/t mined	$0.04/t mined
HL Cost (including G&A and mining cost component from pit to Heap Leach for 2022 MRE)	$5.390/t processed	$5.946/t processed
ROM Cost (including G&A and mining cost component from pit to ROM leach for 2022 MRE)	$1.355/t processed	$1.654/t processed
Selling Cost including SX-EW processing cost	$0.164/lb sold	$0.164/lb sold
Heap Leach Recovery	76% of CuT	76% of CuT
ROM Recovery	40% of CuT	40% of CuT
Pit Slope angle	42 - 52°	42 - 52°

For slope angles, figures from the 2020 exercise were used, as no new geotechnical information was available now of the Whittle run. Slope angle zones defined in 2018 were projected linearly to cover the complete area of the new block model. The following figure shows the 2019 information projected to cover the complete 2023 block model and the 2023's Resource Pit.

Figure 14-18 shows the slope angle zones defined by Ingeroc and Table 14-20 shows the values used in the Whittle optimization run.

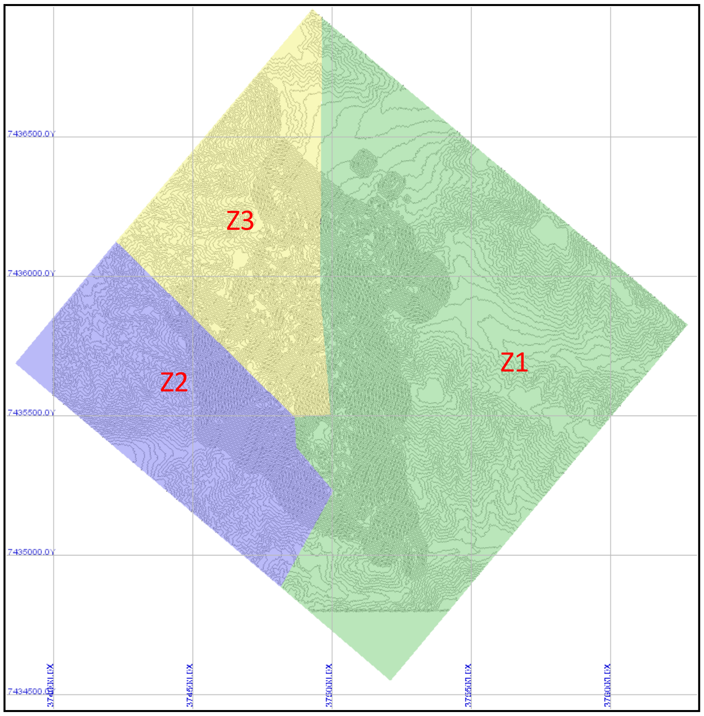


Figure 14-18: Geotechnical Zones – Slope Angles

Table 14-20: Inter Ramp and Overall Slope Angles

ZONE	Interramp Slope					Overall Slope		
	IRA	Face Angle	Height	Backbreak	Berm	Catch Berm	Slope Height	Slope Angle
	? (º)	? (º)	H (m)	a (m)	b (m)	c (m)	L (m)	? (º)
Zone 1	52.0	75.0	10.0	2.7	5.1	10.0	150	50.9
Zone 2	42.0	70.0	10.0	3.6	7.5	10.0	150	41.6
Zone 3	45.0	75.0	10.0	2.7	7.3	10.0	150	44.5

The Cut Off Grade for Heap Leach was calculated using the following expression:

- COG = (Mc + HLc)/((Cu Price – SC) * HL Rec * 2204.62 The following value was obtained:
- Cut Off Grade Heap Leach: 0.15% CuT
- Marginal COG values for Heap and ROM processes were calculated using the above expression without considering the Mine Cost:
- Marginal Cut Off Grade Heap: 0.09% CuT
- Marginal Cut Off Grade ROM: 0.05% CuT

Five meters benches that are doubled to 10 meters, with an inter-ramp heights of 150 m and ramp widths of 25 m were considered.

14.18 Other considerations and criteria used for the optimization process

- All material outside the Mineral Zone solids is considered as waste, at zero grade.
- The Chalcopyirite Mineral Zone is considered waste.
- The pit walls are not constrained by the property boundaries, as allowed by Chilean regulations, in case the material within the property justifies the mining. However, the resultant pit falls within the Marimaca claim.
- Measured, Indicated and Inferred categories were considered valuable.
- Due to some characteristics of the pit optimization software, it was necessary to modify the "percentage model" generated in the grade estimation process to an integrated model, with only one value per block and variable. To do this, the following processes were done per variable:
    - CuT and CuS grades: the integrated values were calculated using the weighted grades and percentages of each of the parcels in the block.
    - Mineral Zone: The final value assigned to the block was the one corresponding to the greater percentage of Mineral Zone in the block.
- Attending to the integration process done to the block model, no further dilution was considered for the optimization process.

14.19 Mineral Resource Estimate

Table 14-21 summarizes the In Pit Resource per category, including all the valuable Mineral Zones, highlighting 0.15 % CuT. It must be noted that the reported figures do not include non-leachable material (chalcopyrite). This Mineral Zone has been treated as waste for the purposes of pit generation and reporting, nevertheless, there is some minor tonnage included in the pit limits, which, as mentioned, is not reported as a Resource of any kind.

Table 14-21: In Pit Consolidated Mineral Resource Statement, Marimaca, (COG 0.15% CuT) NCL Consulting (L. Oviedo, May 18th, 2023)

Mineral Resource Category and Type	Quantity (kt)	CuT (%)	CuS (%)	CuT (t)	CuS (t)
Total Measured	96,954	0.49	0.28	473,912	268,628
Total Indicated	103,358	0.41	0.21	425,797	219,690
Total Measured and Indicated	**200,312**	**0.45**	**0.24**	**899,709**	**488,319**
Total Inferred	**37,289**	**0.38**	**0.15**	**141,252**	**55,802**

* Pit shell constrained resources with demonstrated reasonable prospects for eventual economic extraction (RPEEE) are generated using series of Lerchs-Grossmann pit shell optimizations completed by NCL
* CuT means total copper and CuS means acid soluble copper. Technical and economic parameters include: copper price US$4.00/lb; base mining cost US$1.51/t ($1.76/t average); Heap Leach ("HL") processing cost US$5.94/t (incl. G&A); Run-of-Mine ("ROM") processing cost US$1.65/t (incl. G&A); selling cost US$0.16/lb Cu; HL recovery 76% of CuT; ROM recovery 40% of CuT; and 42°-52° pit slope angle
* With the economic parameters stated above, the Cut-Off grade of the Mineral Resource Estimate is approximately 0.15% CuT.
*An external dilution factor was not considered during this resource estimation. Internal dilution within a 5 m x 5 m x 5 m is considered and the use of small loading equipment is foreseen for adequate selectivity. Assumes 100% mining recovery.
*Quantities and grades in a mineral resource estimate are rounded to an appropriate number of significant figures to reflect that they are approximations.
* Mineral resources which are not mineral reserves do not have demonstrated economic viability. Due to the uncertainty which may attach to inferred mineral resources, it cannot be assumed that all or any part of an inferred mineral resource will be upgraded to an indicated or measured mineral resource as a result of continued exploration

Detail per Mineral Zone Tonnage Grade Curves inside the Resources pit were calculated.

The following Figure shows a 3D view of the Resources pit.

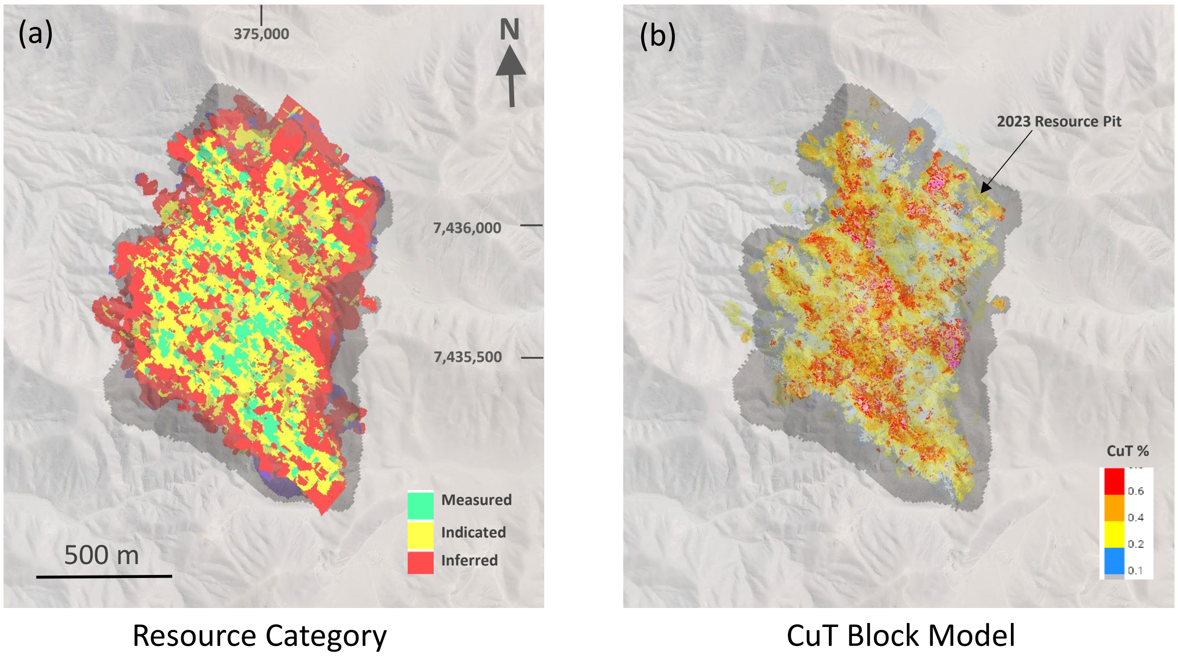


Figure 14-19: Resource Pit, CuT and Category Block Models (NCL, Marimaca Copper Corp., 2023)

Table 14-22 shows the estimated mineral resource per category, for a COG = 0.15 % CuT.

Table 14-22: Mineral Resource Estimate for the Marimaca Deposit, base cutoff grade of 0.15% CuT, NCL Consulting (L. Oviedo, May 18th 2023)

Classification	Quantity Tonnes (000s)	Grade CuT (%)	Grade CuS (%)	Contained Metal CuT Tonnes (t)	Contained Metal CuS Tonnes (t)
Measured					
Brochantite	31,293	0.62	0.45	194,890	141,442
Chrysocolla	24,252	0.44	0.33	105,594	79,863
Enriched	12,056	0.40	0.06	47,669	7,776
Mixed	18,626	0.51	0.13	95,159	23,431
Wad	428	0.19	0.11	794	451
Wad GT 0.1	10,299	0.29	0.15	29,806	15,665
Total Measured	**96,954**	**0.49**	**0.28**	**473,912**	**268,628**
Indicated					
Brochantite	29,084	0.56	0.41	162,753	117,847
Chrysocolla	13,591	0.38	0.28	51,332	37,674
Enriched	23,611	0.36	0.07	84,221	15,867
Mixed	17,193	0.41	0.11	71,109	18,654
Wad	1,381	0.19	0.09	2,586	1,252
Wad GT 0.1	18,499	0.29	0.15	53,796	28,396
Total Indicated	**103,358**	**0.41**	**0.21**	**425,797**	**219,690**
Measured and Indicated					
Brochantite	60,376	0.59	0.43	357,643	259,290
Chrysocolla	37,843	0.41	0.31	156,927	117,536
Enriched	35,667	0.37	0.07	131,891	23,643
Mixed	35,819	0.46	0.12	166,268	42,085
Wad	1,808	0.19	0.09	3,380	1,703
Wad GT 0.1	28,798	0.29	0.15	83,602	44,061
Total Measured + Indicated	**200,312**	**0.45**	**0.24**	**899,709**	**488,319**
Inferred					
Brochantite	4,950	0.46	0.32	22,892	15,710
Chrysocolla	4,488	0.36	0.26	16,250	11,695
Enriched	13,145	0.42	0.07	55,381	9,057
Mixed	5,979	0.36	0.11	21,548	6,541
Wad	830	0.18	0.10	1,504	803
Wad GT 0.1	7,897	0.30	0.15	23,676	11,996
Total Inferred	**37,289**	**0.38**	**0.15**	**141,252**	**55,802**

* Pit shell constrained resources with demonstrated reasonable prospects for eventual economic extraction (RPEEE) are generated using series of Lerchs-Grossmann pit shell optimizations completed by NCL
* CuT means total copper and CuS means acid soluble copper. Technical and economic parameters include: copper price US$4.00/lb; base mining cost US$1.51/t ($1.76/t average); Heap Leach ("HL") processing cost US$5.94/t (incl. G&A); Run-of-Mine ("ROM") processing cost US$1.65/t (incl. G&A); selling cost US$0.16/lb Cu; HL recovery 76% of CuT; ROM recovery 40% of CuT; and 42°-52° pit slope angle
* With the economic parameters stated above, the Cut-Off grade of the Mineral Resource Estimate is approximately 0.15% CuT.

*An external dilution factor was not considered during this resource estimation. Internal dilution within a 5 m x 5 m x 5 m is considered and the use of small loading equipment is foreseen for adequate selectivity. Assumes 100% mining recovery.
*Quantities and grades in a mineral resource estimate are rounded to an appropriate number of significant figures to reflect that they are approximations.
* Mineral resources which are not mineral reserves do not have demonstrated economic viability. Due to the uncertainty which may attach to inferred mineral resources, it cannot be assumed that all or any part of an inferred

14.20 Reporting Sensitivity

Table 14-23 shows the sensitivity of the Marimaca Mineral Resource Estimate to variations in the CuT cutoff grade, highlighting in bold text the base case COG.

Table 14-23: Sensitivity of the mineral resource to changes in CuT cut-off grade, NCL Consulting (L. Oviedo, May 18th 2023)

Cut-off grade (% CuT)	Measured			Indicated			Measured + Indicated			Inferred		
	Quantity (kt)	CuT [%]	CuS [%]	Quantity (kt)	CuT [%]	CuS [%]	Quantity (kt)	CuT [%]	CuS [%]	Quantity (kt)	CuT [%]	CuS [%]
0.40	44,031	0.77	0.44	37,549	0.69	0.38	81,580	0.73	0.41	12,080	0.64	0.24
0.30	60,181	0.65	0.38	55,492	0.58	0.31	115,673	0.62	0.35	18,827	0.54	0.21
0.25	70,621	0.60	0.35	67,997	0.52	0.28	138,618	0.56	0.31	23,581	0.48	0.19
0.22	77,843	0.56	0.32	77,027	0.49	0.26	154,870	0.53	0.29	27,236	0.45	0.18
0.20	82,953	0.54	0.31	83,830	0.47	0.25	166,783	0.50	0.28	30,189	0.43	0.17
0.18	88,291	0.52	0.30	91,309	0.44	0.23	179,599	0.48	0.26	33,002	0.41	0.16
0.15	96,954	0.49	0.28	103,358	0.41	0.21	200,312	0.45	0.24	37,289	0.38	0.15
0.10	113,350	0.44	0.24	127,615	0.36	0.18	240,965	0.39	0.21	46,612	0.33	0.13
0.05	136,069	0.38	0.21	164,998	0.29	0.15	301,067	0.33	0.17	66,200	0.25	0.10
0.00	146,110	0.35	0.19	178,217	0.27	0.14	324,327	0.31	0.16	71,957	0.24	0.09

* Pit shell constrained resources with demonstrated reasonable prospects for eventual economic extraction (RPEEE) are generated using series of Lerchs-Grossmann pit shell optimizations completed by NCL
* CuT means total copper and CuS means acid soluble copper. Technical and economic parameters include: copper price US$4.00/lb; base mining cost US$1.51/t ($1.76/t average); Heap Leach ("HL") processing cost US$5.94/t (incl. G&A); Run-of-Mine ("ROM") processing cost US$1.65/t (incl. G&A); selling cost US$0.16/lb Cu; HL recovery 76% of CuT; ROM recovery 40% of CuT; and 42°-52° pit slope angle
* With the economic parameters stated above, the Cut-Off grade of the Mineral Resource Estimate is approximately 0.15% CuT.
*An external dilution factor was not considered during this resource estimation. Internal dilution within a 5 m x 5 m x 5 m is considered and the use of small loading equipment is foreseen for adequate selectivity. Assumes 100% mining recovery.
*Quantities and grades in a mineral resource estimate are rounded to an appropriate number of significant figures to reflect that they are approximations.
* Mineral resources which are not mineral reserves do not have demonstrated economic viability. Due to the uncertainty which may attach to inferred mineral resources, it cannot be assumed that all or any part of an inferred

14.21 General Considerations and Other Factors

Apart from the conditions identified in this report, and according to the available information, NCL is not aware of other environmental, permitting, legal title, taxation, socio-economic or political factors that could affect materially the Mineral Resource estimate.

14.22 Conclusions

It is the opinion of NCL that the Resource estimation carried out in this exercise is adequately supported by a sound database and geological knowledge of the deposit. The figures obtained are reliable and according to international standards for Resource disclosure.

Further exploration may improve the data density and therefore the resource classification, but it is not expected that the overall geological interpretation will suffer any substantial change that may lead to significant changes.

15 MINERAL RESERVE ESTIMATE

Mineral reserves are not yet defined.

16 MINING METHODS

Not applicable

17 RECOVERY METHODS

Not applicable

18 PROJECT INFRASTRUCTURE

Not applicable

19 MARKET STUDIES AND CONTRACTS

Not applicable

20 ENVIRONMENTAL STUDIES, PERMITTING, SOCIAL AND COMMUNITY IMPACT

Not applicable

21 CAPITAL AND OPERATING COSTS

Not applicable

22 ECONOMIC ANALYSIS

Not applicable

23 ADJACENT PROPERTIES

Marimaca has acquired all the properties that it considers of interest for the project. It is NCL's understanding that the existing property in the hands of Marimaca ensures that the Resource reported in this document is not under any risk related with adjacent properties.

24 OTHER RELEVANT DATA AND INFORMATION

The QP's are not aware of any other relevant information or explanation necessary to make this report understandable or not misleading.

25 INTERPRETATIONS AND CONCLUSIONS

NCL was retained by Marimaca Copper Corporation to visit their properties at the Marimaca Project, inspect the Project, review and audit the data and develop an update of the Mineral Resource estimation. NCL examined the different sources of input information: raw data (QA/QC), exploration, geology and mineral modeling estimation units including all the new exploration data available until the end of September 2022.

The purpose of the investigation was to estimate the Mineral Resources, update the 2020 block model, in compliance with generally recognized industry best practices and report them according to the Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards for Mineral Resources and Mineral Reserves (May 2014).

25.1 Mineral Resource Modelling and Estimation

NCL carried out a Resource Estimation for the part of the deposit located on the Marimaca - La Atómica and Atahualpa claims, resulting in the estimation of Measured, Indicated and Inferred Resources. Resultant figures inside an optimized pit envelope with a COG of 0.15% CuT are 200.3 Mt @ 0.45% CuT of Measured + Indicated Resources, plus 37.3 Mt @ 0.38% CuT of Inferred Resource.

This increase in the Resource is mainly due to the success of the new exploration campaigns, which identified important quantities of Mixed and Enriched material.

New information collected by Marimaca, as well as the one used in previous estimations, attests to the high overall quality of the exploration and design work completed by the internal personnel. NCL examined the data, the exploration, and the geology model produced.

In the opinion of Luis Oviedo (QP), the classifications applied to the estimates at Marimaca accurately reflect the confidence in the geological model and grade estimates.

On the basis of this work, NCL concluded that the models, Mineral Resources and Statements for Marimaca as of May 2023 are appropriately categorized and free of material errors. Findings of this estimation support this updated estimate to be robust in methodology and representative of the input data. It is the opinion of the QPs that the updated Marimaca Mineral Resource estimate has low risk.

Other than those disclosed in this technical report, NCL is not aware of any other significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the Resource estimated for the Marimaca Project.

26 RECOMMENDATIONS

26.1 Geology and Mineral Resource Estimation Recommendations

The QPs consider that the work carried out by Marimaca in relation with the Resource Estimation is of excellent quality and the following general recommendations are made to Marimaca:

- Continue to update the 3D geology and structural models of the Marimaca Oxide Deposit
- Improve the Marimaca Oxide Deposit rock model in order to optimize future dilution and losses
- Integrate the geotechnical data within the geological model
- Develop and improve the resolution of the geo-metallurgical model prior for use in a Feasibility Study, including the evaluation of the impurities mitigation identified in Geomet V and optimizations of heap leaching conditions for acid consumption and copper recovery
- Additional exploration on the Marimaca satellite properties and sulphide potential beneath the Marimaca oxide mineralization
- Progress the study phase and preliminary engineering of the Marimaca Project and towards a Definitive Feasibility Study and relevant permitting

A budget of $14.6M is estimated to complete the recommended list of activities.

Activity	Cost Estimate
Geological, structural, rock, and geometallurgical model updates	US$1,600,000
Further exploration drilling on sulphide and satellite oxide targets	US$3,000,000
Preliminary engineering and supporting documentation for permitting submissions	US$4,500,000
Definitive Feasibility Study engineering, preparation and report	US$5,500,000
Total	**US$14,600,000**

Other than those disclosed in this technical report, NCL is not aware of any other significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the Marimaca Project.

27 REFERENCES

- Arriagada, I., 2022, Growth Opportunities. 2021 Preliminary Results. Antofagasta Minerals. Presentation. BMO Meeting.
- Casquet, C., Herve, F., Pankhurst, R.J., Baldo, E., Calderon, M., Fanning, C.M., Rapela, C.W., y Dahlquist, J., 2014, The Mejillonia suspect terrane (Northern Chile): Late Triassic fast burial and metamorphism of sediments in a magmatic arc environment extending into the Early Jurassic, Gondwana Research, 25, p. 1271-1286.
- Cortes, J., Marquardt, C., Gonzalez, G., Wilke, H.G., y Marinovic, N., 2007, Cartas Mejillones y Península de Mejillones, Región de Antofagasta, Serv. Nac. de Geol. y Min. Carta Geológica de Chile Nos 103 y 104, 63 p.
- Espinoza, S., Véliz, H., Esquivel, J., Arias, J., y Moraga, A., 1996. The Cupriferous Province of the Coastal Range, Northern Chile. In: Camus, F., Sillitoe, R.H., and Petersen, R., eds. Andean Copper Deposits: New Discoveries, Depósitos Estratoligados de Cu -(Ag) Chilenos 11 Mineralization, Styles and Metallogeny. Society of Economic Geologists, Special Publication Number 5, pp. 19-32
- Gonzalez, R., 2002, Geología de la Cordillera de la Costa de Mejillones, entre los 23°00'00'' – 23°08'11,5'' Sur y los 70°12'01,3'' – 70°20'46,9'' Oeste. Región de Antofagasta. Chile. Memoria Titulo de Geólogo. Univ Cat del Norte. Inédito. 129 p.
- Hervé, F., Faundez, V., Caldern, M., Massonne, H.-J. & Willner, A.P., 2007, Metamorphic and plutonic basement complexes, in The Geology of Chile, pp. 231–261, eds Moreno, T. & Gibbons, W., Geological Society of London.
- IMG, 2019, Minera Cielo Azul Ltda. Distrito Naguayán. Marimaca-La Atómica-Atahualpa Mapa Integrado. Litología Integrada 1k+5k IMG. Unpublished Map.
- Kalanchey, R., Castillo; R., Weston, S., Oviedo, L., Guzman, C., and Jo, M., 2020, Preliminary Economic Assessment, Marimaca Project, Antofagasta, II Region, Chile Available online at www.sedar.com
- Kovacic, P., 2017, Informe Geológico Proyecto Marimaca. Reconocimiento geológico 1:5000 y 1:1000. Comuna de Mejillones, Region de Antofagasta. MC. Inédito.
- Kojima, S., Tristá-Aguilera, D. and Hayashi, K., 2009, Genetic aspects of the Manto-type copper deposits based on geochemical studies of North Chilean deposits. Resource Geol.,
- 59, 87-98
- Lopez, C., Riquelme; R., Martínez; F., Sanchez, C., and Mestre, A., 2018, Zircon U-Pb geochronology of the mesozoic to lower Cenozoic rocks of the Coastal Cordillera in the Antofagasta region (22°30′-23°00′ S): Insights to the Andean tectono-magmatic evolution, Journal of South American Earth Sciences, Vol 87, pp 113-138.
- Lucassen, F., Becchio, R., Wilke, H.G., Franz, G., Thirlwall, M.F., Viramonte, J., Wemmer, K., 2000. Proterozoic–Paleozoic development of the basement of the Central Andes (18–26°). A mobile belt of the South American craton. Journal of South American Earth Sciences 13, 697–715
- Maksaev, V., y Zentilli, M., 2002. Chilean strata-bound Cu- (Ag) deposits: An Overview. In - Porter, T.M. (Editor), 2002 - Hydrothermal Iron Oxide Copper-Gold & Related Deposits: A Global Perspective, volume 2; PGC Publishing, Adelaide, Australia, pp. 185-205

- Mpodozis; C., Cornejo, P., and Mora, R., 2015, Evolving copper mineralization styles linked to the changing Jurassic-Early Cretaceous tectonic regime along the coastal Range of Northern Chile (Antofagasta-Tocopilla región), XIV Congreso Geologico Chileno, La Serena. Actas.
- Mpodozis, C., and Cornejo, P., 2019, Evolving active margin magmatism, tectonics and mineralization in the Northern Chilean Andes: a short review. SEG Meeting 2019, Santiago, Abstracts.
- Oviedo, L. and Palma, R., 2017, Technical report for the Marimaca Copper Project, Antofagasta Province, Region II, Chile, 99 p. Available online at www.sedar.com
- Oviedo, L. and Palma, R., 2018, Updated resource estimate for the Marimaca Copper Project, Antofagasta Province, Region II, Chile.130 p. Available online at www.sedar.com.
- Oviedo, L. and Palma, R., 2020. Updated and Expanded Resource Estimate for the Marimaca Copper project, Antofagasta Province, Region II, Chile. 217p. Available online at www.sedar.com.
- Quiroga, E., Oviedo, L. and Guzman, C. , 2018, Definitive feasibility study for Marimaca 1-23 Claim Project, Antofagasta, II Region, Chile, NI 43101 Technical Report.354 p. Available online at www.sedar.com.
- Ramírez, 2007, L., Metalogénesis, petrogénesis y tectónica del Distrito Minero de Mantos Blancos, Cordillera de la Costa, Norte de Chile, Tesis Doctorado en Ciencias, Univ. De Chile, Inédito, 178 p.
- Sato, T., 1984, Manto type Copper deposits in Chile- a Review. Bull Geol Surv Jpn Vol 35, pp 565-582.
- Scheuber, E., y Andriessen, A.M., 1990, the kinematics and geodynamic significance of the Atacama Fault Zone, northern Chile. JSG 12, 243-257.
- Scheuber, E.; González, G. 1999. Tectonics of the Jurassic-Early Cretaceous magmatic arc of the north Chilean Coastal Cordillera (22°-26°S): A story of crustal deformation along a convergent plate boundary. Tectonics Vol 18, pp 895-910.
- Sillitoe, R.H., 2003, Iron Oxide-copper-gold deposits: an Andean view. Mineralium Deposita, 38, 787-812
- Sillitoe, R.H., and Perelló, J., 2005. Andean copper province: tectonomagmatic settings, deposit types, metallogeny, exploration, and discovery. Hedenquist, J., Thompson, J.F.H., Goldfarb, R.J., Richards, J.P., eds Economic Geology One Hundredth Anniversary Volume 1905-2005, pp.845-890, Littleton
- Simon, A., 2019, Diagramas de sondajes y superficie. Unpubished Report, 41 p.
- Veliz, H., 1994; Antecedentes geológicos, deformación frágil e implicancias metalogénicas del sistema de Falla Atacama, entre las Quebradas El Desesperado y La Chimba. Cordillera de la Costa, Segunda Región de Antofagasta, Chile. Memoria Titulo de Geólogo. Univ Cat del Norte. Inédito. 137 p.
- Venegas, R., y Vergara, M., 1985, Yacimientos de Fe-Cu-(Au) ligados a rocas intrusivas y volcánicas jurásicas de la Cordillera de la Costa a la latitud de Mejillones. II Región de Antofagasta. IV Congr. Geol. Chileno, Actas 3, 3/730-3/751
- Vivallo, W.; Henriquez, F. 1998, Génesis común de los yacimientos estratoligados y vetiformes de cobre del Jurasico Medio a Superior en la Cordillera de la Costa, Región de Antofagasta, Chile. Revista Geológica de Chile 25 (2), 199-228
- Vergara, M., 1985, Geología de los Distritos cupríferos Naguayán; Desesperado y Chacaya. II Región de Antofagasta. Tesis de Grado. Univ. Cat. Del Norte. Inédito, 80p.

28 ANNEX 1

28.1 Lawyers letter

BOFILL MIR
ABOGADOS

June 19, 2023

To:

NCL Ingenieria y Construccion SpA (NCL)
Atten: Luis Oviedo, Ricardo Palma

MJO Engineering and Consultants in Metallurgy SpA
Atten: Marcelo Jo Lopez

VIA EMAIL

Ref. Marimaca Project Property Description and Location. Updated Mineral Resource Estimation NI43101 Report, June 2023.

Dear Sirs,

We are acting as legal counsel in Chile for Marimaca Copper Corp. ("Marimaca") and have been asked to review Chapter 4 ("Property Description and Location") of their Updated Mineral Resource Estimation NI43101 Report of June 2023.

For the purposes of this opinion, we have examined Chapter 4 and the originals or copies, certified or identified to our satisfaction, of the documents related to the Marimaca mining concessions ("Properties") and of official public records, certificates of public officials and other documents and have considered such questions of law and made such other investigations as we have deemed relevant or necessary as a basis for the opinion expressed herein.

We have assumed the genuineness of all signatures, the legal capacity of all individuals (other than Chilean individuals), the authenticity of all documents submitted to us as originals and the conformity to authentic original documents of all documents submitted to us as certified, conformed or photostatic copies or facsimiles thereof. We have also assumed the completeness, truth and accuracy of all facts set forth in the official public records, certificates and documents supplied by public officials or otherwise conveyed to us by public officials.

Bofill Mir Abogados Limitada

Av. Andres Bello 2711 - Torre Costanera, piso 8, CP 7550611, Las Condes.
Santiago, Chile.
Tel. +56 2 2757 7600

BOFILL MIR
ABOGAOOS

We are solicitors qualified to carry on the practice of law in Chile only and we express no opinion as to any laws or matters governed by any laws other than the laws of Chile.

In relation to the aforementioned, we can inform the following:

1. We are not aware of any significant environmental, social or permitting issues that would prevent future exploitation of the Marimaca project deposit.

2. The Properties are, as of this date, valid and in good standing, legally registered under its concessionaire's name, free of mortgages, encumbrances, injunctions and litigation, and with its annual fees duly paid.

If you require any further information or clarification, please let me know.

Yours sincerely,

Pab *oMir*
Bofill Mir Abogados

Bofill Mir Abogados Limitada

Av. Andres Bello 2711 - Torre Costanera, piso 8, CP 7550611, Las Condes.
Santiago, Chile.
Tel. +56 2 2757 7600
lTWYl.boflllmlr.cl

28.2 List of Mining and Exploration Concessions

Table 28-1: List of Concessions that form the Marimaca Claims.

Quantity	Concession	Natiaonal Role	Concessionaire	Surface	Tipe of Concession	Current situation	Page	Number	Year	Mining Registrar	Commune Concession	Royalty Interest
			Marimaca Project Exploitation									
	Marimaca 1/23 (1/14 - 17/23)	02203-0273-3	Newco Marimaca	103	Explotación	Constituida	38 v	13	2017	Mejillones	Mejillones	1% NSR Osisko; 1,5% NSR original royalty
	Marimaca 1/23 (15-16)	02203-1440-5	Newco Marimaca	10	Explotación	Constituida	36	11	2017	Mejillones	Mejillones	1% NSR Osisko; 1,5% NSR original royalty
	SOR 1/16	02203-1441-3	Newco Marimaca	16	Explotación	Constituida	1172	260	2018	Mejillones	Mejillones	1% NSR Osisko; 1,5% NSR original royalty
	Miranda III 1 al 130 (Lados OESTE/ESTE 51 p	02203-1676-9	Inversiones Cielo Azul Ltda.	51	Explotación	Constituida	1	1	2020	Mejillones	Mejillones	1% NSR Osisko
	La Atomica 1/10	02203-0025-0	Cia. Mra. Cielo Azul Ltda.	50	Explotación	Constituida	856	170	2021	Mejillones	Mejillones	1% Osisko NSR; 1,5% original royalty
	Miranda I 1 al 146	02203-1546-0	Cia. Mra. Cielo Azul Ltda.	146	Explotación	Constituida	650	108	2017	Mejillones	Mejillones	1% NSR Osisko
	Miranda II 1 al 30	02203-1545-2	Cia. Mra. Cielo Azul Ltda.	30	Explotación	Constituida	1191	263	2018	Mejillones	Mejillones	1% NSR Osisko
	Miranda IV 1 al 48	02203-1548-7	Cia. Mra. Cielo Azul Ltda.	48	Explotación	Constituida	642	107	2017	Mejillones	Mejillones	1% NSR Osisko
												1% NSR Osisko
20	RODEADA 1/3	02203-0064-1	SLM Rodeada Uno	4	Explotación	Constituida	1080	224	2018	Mejillones	Mejillones	1% NSR Osisko
	ATAHUALPA 1/2	02203-0001-3	Cia. Mra. Cielo Azul Ltda.	10	Explotación	Constituida	1132	249	2018	Mejillones	Mejillones	1% NSR Osisko
	INCA 1/2	02203-0161-3	Cia. Mra. Cielo Azul Ltda.	3	Explotación	Constituida	1129	246	2018	Mejillones	Mejillones	1% NSR Osisko
	SANTA MARIA 1/2	02203-0226-1	Cia. Mra. Cielo Azul Ltda.	10	Explotación	Constituida	1126	243	2018	Mejillones	Mejillones	1% NSR Osisko
	SANTA MARIA II UNO AL DOS	02203-0452-3	Cia. Mra. Cielo Azul Ltda.	10	Explotación	Constituida	1127	244	2018	Mejillones	Mejillones	1% NSR Osisko
	SORPRESA 1 AL 10	02203-0448-5	Cia. Mra. Cielo Azul Ltda.	81	Explotación	Constituida	1130	247	2018	Mejillones	Mejillones	1% NSR Osisko
	SORPRESA II 1 AL 15	02203-0486-8	Cia. Mra. Cielo Azul Ltda.	150	Explotación	Constituida	1131	248	2018	Mejillones	Mejillones	1% NSR Osisko
	TRUSKA 1 DEL 1/9	02203-0938-K	Cia. Mra. Cielo Azul Ltda.	18	Explotación	Constituida	1133	250	2018	Mejillones	Mejillones	1% NSR Osisko
	TRUSKA 2 DEL 1/12	02203-0939-8	Cia. Mra. Cielo Azul Ltda.	39	Explotación	Constituida	1134	251	2018	Mejillones	Mejillones	1% NSR Osisko
	VIDA DOS 1/20	02203-0593-7	Cia. Mra. Cielo Azul Ltda.	64	Explotación	Constituida	1128	245	2018	Mejillones	Mejillones	1% NSR Osisko
	La Mina la Mercedes Uno 1 al 7	02203-0850-2	Proyecta S.A.	70	Explotación	Constituida	386	65	2019	Mejillones	Mejillones	1% NSR Osisko; 1% NSR Llanos/Mercedes Option
	La Mina la Mercedes Dos 1 al 6	02203-0851-0	Proyecta S.A.	48	Explotación	Constituida	394	66	2019	Mejillones	Mejillones	1% NSR Osisko; 1% NSR Llanos/Mercedes Option
20			Totales	961								

Notes: Section 4-2 summarieses the material terms of each royalty. The term 'original royalty' refers to the NSR interest created as part of the original purchase or option arrangements. Certain of these NSRs are subject to buyback rights.
The buyback rights are summarised in section 4-2. The Osisko roylaty terms require the buyback rights in respect of Marimaca 1-23 Claims and under the La Atomica option agreement to be exercised prior to commercial production from these properties.
Proyecta S.A. is the concession holder under the Llanos/Mercedes option agreement.

29 ANNEX 2

29.1 Marimaca splitting, recovery and sample collection protocols

RC DRILLHOLES	PROTOCOLS
Field	
Location of field recommendations with GPS in corrected PSAD56 coordinates	Table of recommendations in excel
Construction of platform and staking of the recommendation with lime mark in azimuth	Control shift equipment
Verification of equipment installation with compass and inclinometer	
Drilling bit diameter register	Report scanned drill holes
Database with serial numbers and identification of control samples (B), reference materials and duplicates	Registration in excel and serial cards
Preparation of materials: bags; Labels, cutting boxes	Serial Sample Cards
Report of shift, log diameter and other operational	Report scanned drill holes
Continuous sampling every 2 m	Report scanned drill holes
Collection and quartet in riffles	Controller observation
Control of mass in situ shows total and in 1st and 3rd quartet	Record in notebook / report
Samples A and B are pocketed in plastic bags 40x60 labeled with probing, interval, series with bracket ticket	
Sample of cutting, plastic box 20 divisions thick and thin, back bag of approx 1 kg	Physical backing
Sample B is stored in the site	Physical backing
Sample A is sent to mechanical preparation	Guide (1) preparation request, pulps in three envelopes, rejection is eliminated
Transportation of samples by truck from project to laboratory	Guide (1) preparation request
Identification of the collar using PVC pipe and metal plate with the name of the well	Physical location
Measurement of deflection and orientation of structures	Meter Report
Measurement of collar location with topography	Definitive certificate of coordinates
Laboratory	
Lab receiving and mass control	Data to lab control system. Mass control report in excel + physical table and particle size control every xxx samples
Mechanical Preparation	Preparation Protocols
Drying 105 ° C	Preparation Protocols
Sieving and crushing 85% low # 10	Preparation Protocols
Rotary divider split	Preparation Protocols
Spray 500-700 g 95% low # 150	Preparation Protocols
Obtain three envelopes of pulps 2 of 125g and 1 of 250 g	Preparation Protocols
Send the envelopes to MCAL to generate lots of analysis	
MCAL receiving pulps	Received in physical
Standard revision according to shipping guides to preparation	Revision against shipping guides (1)

Insertion of control samples, reference materials and duplicates of 2 ° on	
Shipping to chemical analysis	Test request guide (2) with attached detail of samples sent (according to master table)
Chemical analysis	
Reception of batches of pulps	
CuT: 1 g digestion with 10 ml mixture HNO3 + 4 ml HClO4 + 1 ml H2SO4 in 20 ml dilution of 50% HCl for a 100 ml gauge flask	Chemical analysis protocols
Quantification with AAS limit of detection of 0.01% for CuT	Chemical analysis protocols
CuS: 1 g leaching with 50 ml H2SO4 in 250 ml gauge flask, shaking at 130 RPM for 1 hour	Chemical analysis protocols
Quantification with AAS limit of detection of 0.01% for CuT	Chemical analysis protocols
MCAL receiving results and Qa-Qc	Laboratory reports in excel sheet by lots of approx 50 samples
Input of results to database	Excel table
Review of control samples according to Qa-Qc system	Excel chart charts and statistics
Under Qa-Qc re-analysis is requested (new reception circuit-review results)	Excel table
Validated results are sent to users	Excel table
Official database	Excel table with backs of physical certificates of laboratory
Chemical Results Master Chart	
Table with masses - recoveries	
Operating time chart	
Tables of Qa-Qc	
Excel tables with lab results - digital files	
Physical backups	
Samples B (MAR 17 to 54)	
Cutting boxes and backing	
Pulps	

DDH	PROTOCOLS
Field	
Location of field recommendations with GPS in corrected PSAD56 coordinates	Table of recommendations in excel
Construction of platform, settling pool, and staked recommendation with lime mark on azimuth	Control shift equipment
Verification of equipment installation with compass and inclinometer	
Drilling diameter registration	
Obtaining the control sample according to drilling races	
Sample is available in aluminum trays, runs provided by wooden blocks (white color)	
Record drilling depths and recoveries	Report scanned drill holes
Transfer of tray to sample and first geological revision	
Race review, recoveries and regularization at intervals of 2 m marked with wooden blocks (yellow)	Registration of careers and regularized sections with their recovery measures

Geotechnical mapping and identification of PU specimens and geotechnical tests	Logging in
Photograph of trays of witnesses (in natural light)	Photographic record
Weighing of each tray	Weight record of trays with full control
Geological mapping	Log
Database with serial numbers and identification of control samples (B), reference materials and duplicates	Registration in excel and serial cards
Preparation of materials: bags; Labels.	Serial Sample Cards
Sampling by hydraulic guillotine break at intervals of 2 m and shelf in plastic bags 40x60 labeled with probing, interval, series with clasped ticket	
Weighing of each sample	Weight register
Tray Weighing (sample quality check)	Tray weight register with half control
Photo of trays with half of witnesses (in natural light)	Photo Registration
Tray storage	
Transportation of samples by truck from project to laboratory	
Identification of the collar using PVC pipe and metal plate with the name of the well	Physical location
Measurement of deviation	Meter Report
Measurement of collar location with topography	Definitive certificate of coordinates
Lab receiving and mass control	Data to lab control system. Mass control report in excel + physical table and granulometric control every xxx samples
Mechanical preparation	Preparation Protocols
Drying 105 ° C	Preparation Protocols
Sieving and crushing at ¼ “	
Sieving and crushing 85% low # 10	Preparation Protocols
Rotary divider split	Preparation Protocols
Spray 500-700 g 95% low # 150	Preparation Protocols
Obtain three envelopes of pulps 2 of 125g and 1 of 250 g	Preparation Protocols
Sending the envelopes to MCAL to generate lots of analysis	
Pulp reception	Physical reception
Serial revision according to shipping guides to preparation	Revision against shipping guides (1)
Insertion of control samples, reference materials and duplicates of 2 ° on	
Shipping to chemical analysis	Analysis request guide (2) with attached detail of submitted samples (according to master table)
Reception of batches of pulps	
CuT: 1 g digestion with 10 ml mixture HNO3 + 4 ml HClO4 + 1 ml H2SO4 in 20 ml diluent of 50% HCl for a 100 m capacity flask l	Chemical analysis protocols
Quantification with AAS limit of detection of 0.01% for CuT	Chemical analysis protocols
CuS: 1 g leaching with 50 ml H2SO4 in 250 ml gauge flask, shaking at 130 RPM for 1 hour	Chemical analysis protocols

Quantification with AAS limit of detection of 0.01% for CuT	Chemical analysis protocols
Reception of results and Qa-Qc	Laboratory reports in excel sheet by lots of approx 50 samples
Input of results to database	Excel table
Review of control samples according to Qa-Qc system	Excel chart graphs and statistics
Under Qa-Qc re-analysis is requested (new circuit of reception-revision of results)	Excel table
Validated results are sent to users	Excel table
Official database	Excel table with backs of physical certificates of laboratory
Chemical Results Master Chart	
Table with recoveries of races and regularization	
Table with masses of trays and samples	
Operating time chart	
Tables of Qa-Qc	
Excel tables with lab results - digital files	
Physical backups	
Preparation reject at -10 #	
Half Wit Trays	
Pulps	

OTHER PROCEDURES
PU Test Tubes
Serial identification
Photography
Geological description (Rx-ZAL-ZMIN)
Uniaxial Loading Probes
ID
Photography
Serial identification
PU samples made on full-length and full-length test specimens
Pre and post test photo lab registration
Metallurgical samples
Interval selection table
Tray Extraction
Record of weights sub-samples of 2 m
Bags, sample number, bag number
Shipping to lab