and

Michiquillay Project
Peru
Technical Report Summary

Report prepared for:

Southern Copper Corporation

Report prepared by:

Wood Group USA, Inc.

Report current as at:

December 31, 2021.

Date and Signature Page

This technical report summary (the Report), entitled "Michiquillay Project, Peru, Technical Report Summary" is current as at December 31, 2021. The Report was prepared by Wood Group USA, Inc. (Wood), acting as a Qualified Person Firm.

Dated: February 24, 2022.

"signed"

Wood Group USA, Inc.

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wood.

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1. EXECUTIVE SUMMARY

1.1. Introduction

This technical report summary (the Report) was prepared for Southern Copper Corporation (Southern Copper) by Wood Group USA, Inc. (Wood, acting as the QP Firm) on the Michiquillay copper project (the Project), located in Cajamarca Province, Peru.

The Project contains the Michiquillay copper–gold–molybdenum deposit.

1.2. Terms of Reference

The Report was prepared to be attached as an exhibit to support mineral property disclosure, including mineral resource estimates, for the Michiquillay Project in Southern Copper's Form 10-K for the year ending December 31, 2021.

Mineral resources are reported for the Michiquillay deposit. There are no current mineral reserves estimated for the Michiquillay deposit.

Unless otherwise indicated, the metric system is used in this Report.

Mineral resources are reported using the definitions in Subpart 229.1300 – Disclosure by Registrants Engaged in Mining Operations in Regulation S–K 1300 (SK1300).

The Report uses US English.

1.3. Property Setting

The Michiquillay Project is located in the Western Cordillera of the Andes in northwest Perú, approximately 45 km from Cajamarca and 900 km northeast of Lima.

The main access route to the Project is via road from Cajamarca. Initially, the paved Route 8B is used from Cajamarca to the town of La Encañada, a distance of approximately 33 km. A gravel road is then used from La Encañada to the Project site, approximately 14 km. The Michiquillay Project is located within the Michiquillay community and is located 4 km from the community of La Encañada. Cajamarca is about 900 km from Lima. Access within the Project is via various gravel and two-track roads that link areas where drilling is planned.

The closest airport is at Cajamarca, which is serviced by regular flights from Lima.

The local climate is typical of high altitude, equatorial regions. Mining operations in the district operate year-round, and it is expected that any future mining operation at Michiquillay will be year-round. Exploration activities are conducted year-round, but may be temporarily curtailed by heavy rains.

The site is currently a greenfields site with limited infrastructure that is only suitable to support exploration-level activities.

1.4. Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

On June 12, 2018, Southern Copper and Activos Mineros S.A.C. (Activos Mineros), a Peruvian state-owned entity, entered into an "Agreement for the Transfer of the Mining Concessions and other assets that make up the Michiquillay Copper Project" (the Agreement). Under the Agreement, the following assets were transferred from Activos Mineros to Southern Copper: 18 mining concessions; eight surface land parcels; Project data; and drill core.

The transfer was effective upon signing of the Agreement, such that Southern Copper is the current legal owner of the transferred assets.

The Agreement was subdivided into two periods.

The suspension period is a three year period that could be extended for two additional years. The extension was requested, and the Project is currently in the fourth year of the suspension period. During the suspension period, Southern Copper must obtain surface rights and the authorizations that would enable activities to be initiated. The suspension period is automatically ended when these conditions are met.

The pre-operative period will commences immediately following the end of the suspension period. The pre-operative period has a 12-year duration that can be extended for an additional three years providing there is an approved feasibility study. Within the pre-operative period, there are conditions that must be met, including minimum investment commitments within certain specified timeframes, completion of a feasibility study, obtaining all relevant permits and authorizations to allow mining activities, and completion of mine construction.

The Agreement requires that Southern Copper pays Activos Mineros US$400 million, in four tranches that have specified payment dates. Southern Copper has paid US$25 million of the amount required under the Agreement. The US$375 million balance is secured by a legal mortgage. This mortgage will only be cancelled when the outstanding balance is paid.

There are pre-set times at which Southern Copper may terminate the agreement. Southern Copper may unilaterally terminate the Agreement at any time during the suspension period. If this occurs, no additional payments are required. During the pre-operative period, Agreement termination is also possible but Southern Copper must pay specified monetary amounts.

In addition to the payments under the Agreement, Activos Mineros is entitled to a 3% royalty, referred to as the contractual royalty, over the net annual income accruing from the sale of the metals produced from the minerals extracted from the concessions.

Fifty percent of the Agreement payments and 50% of the contractual royalty payments will be transferred by PROINVERSON to a social fund, "Asociación Fondo Social Michiquillay ”

Southern Copper must provide a US$5 million security to PROINVERSION during the pre-operative period, and an additional US$1 million security during Project operations.

The Michiquillay Project consists of 18 mining concessions with a total area of 4,051.4 ha.

The Michiquillay deposit is located on lands of the Michiquillay Rural Community and the Encañada Rural Community. Southern Copper has signed surface land use agreements with both communities where the activities proposed in the semi-detailed Environmental Impact Assessment (EIAsd) are anticipated to occur. These agreements allow Southern Copper to conduct exploration activities. Additional agreements would be required in support of Project development.

Permits for the use of water for exploration purposes are currently being processed by the National Water Authority and the Marañon Local Authority.

A mining royalty is payable to the Government of Peru, based on operating income margins with graduated rates ranging from 1–12% of operating profits. There is also a mining tax payable, based on operating income, with rates that range from 2–8.4%.

The mining concessions are subject to the 3% contractual royalty.

A number of baseline studies were completed in support of the EIAsd process including: geomorphology; air quality; noise; soil quality; surface water quality; river sediments; the effects of vibration on structures; flora surveys; terrestrial fauna surveys; and aquatic fauna surveys.

Baseline archeological data were collected in 2010–2011. The surveys identified 26 archaeological sites and isolated archaeological elements in the La Encañada district, as classified under the Archaeological Research Regulations. Of these, four are within the conceptual open pit boundary. In late 2021, one of the sites was reclassified as having no significant archaeological importance. Southern Copper will be required to obtain a Certificate of Non-Existence of Archaeological Remains (CIRA) before starting activities that would disturb these sites. If it is absolutely necessary to locate infrastructure over an archaeological site, Southern Copper must obtain authorization from the Ministry of Culture to clear the area of archaeological remains (“*rescate arqueológico”)* before starting proposed activities.

An EIAsd and subsequent amendment were completed by Anglo American Michiquillay S.A. in 2009 and 2013, respectively (Resolución Directoral N° 057-2009-MEM/AAM and Resolución Directoral N° 182-2013-MEM/AAM). Southern Copper obtained the approval of its EIAsd in October, 2021 (Resolución Directoral N° 190-2021), which was granted by the Environmental Mining Affairs Bureau of the Ministry of Energy and Mines.

An Environmental Management Plan was developed as part of the 2021 EIAsd. Southern Copper committed to regular sampling and monitoring at selected points as part of the EIAsd. The closure plan developed for the EIAsd that covers exploration activities is conceptual, and covers temporary, progressive and final closure.

Southern Copper is preparing the documents required to file for a Mining Exploration Initiation Authorization before the Mining Affairs Bureau of the Ministry of Energy and Mines.

1.5. Geology and Mineralization

The Michiquillay deposit is considered to be an example of a porphyry copper–molybdenum–gold deposit.

The Project is located in the western cordillera of the Andes, within a northwest–southeast-oriented metallogenetic corridor that hosts several porphyry copper deposits in the Cajamarca region.

The Michiquillay deposit is approximately 5 km long, 1.5 km wide, and averages about 1.2 km thick. Mineralization has been drill tested to a depth of 1,230 m. The deposit remains open at depth.

The Michiquillay deposit was formed from two juxtaposed Lower Miocene dacitic porphyry intrusions, one in the southwest that is copper–gold rich and the other in the northeast that is copper–molybdenum–gold rich. The intrusions are subdivided into a number of intrusive stages: early, inter-mineral and late-mineral, which are readily distinguished by the intensity of quartz veining, degree of texture destruction, presence of xenoliths of older porphyry phases, and copper–gold or copper–molybdenum tenor.

Alteration includes argillic, sericitic, sericitic-kaolinitic, chloritic and potassic styles.

Mineralization is zoned vertically due to oxidation and remobilization of copper by supergene processes. The highest concentration of chalcopyrite is found in the early PF1 and PQ1 porphyries, where it occurs as disseminations, micro-veins and in type A> type B veinlets (chalcopyrite>–pyrite). The intensity of chalcopyrite in the early quartz porphyry is higher compared to the chalcopyrite content of the early feldspathic porphyry. The inter-mineral PF2 and PQ intrusions contain disseminated and vein chalcopyrite. Pyrite and chalcopyrite distributions differ. The PF2 intrusion shows chalcopyrite dominant over pyrite in the south–central deposit area, but in the north–central area, pyrite is dominant over chalcopyrite.

The late PF3 and PQ3 porphyries tend to be pyrite dominant over chalcopyrite.

Sedimentary rocks surrounding and included in the intrusive units such as quartz sandstones, quartzites and hornfels, host disseminated pyrite and pyritic "DL" type veins. Chalcopyrite is also disseminated and occasionally occurs in fractures in contact zones with early porphyries.

Molybdenite, on average, is slightly higher grade in the feldspathic porphyry than in the quartz porphyries. It is preferentially found in the early PQ1 and PF1 and inter-mineral PQ2 and PF2 porphyries, where it is associated with type "B" veins. The sedimentary rocks have the lowest molybdenite concentrations in the deposit.

1.6. History

Prior to Southern Copper's Project interest, work was conducted by Northern Peru Mining Company, American Smelting and Refining Company, later Asarco LLC (Asarco), Minero Peru S.A., (Minero Peru) and various Anglo American subsidiaries. Work completed included geological mapping, geochemical sampling, geophysical surveys, underground tunnelling, core drilling, metallurgical testwork, and mining studies.

Work conducted by Southern Copper since Project acquisition in 2018 included data verification, baseline environmental studies, collection of baseline hydrological and geotechnical data, and data reviews.

1.7. Exploration, Drilling, and Sampling

Exploration programs identified the Michiquillay deposit, and initial-stage evaluation data are superseded by drill information.

Drilling totals 260 core holes (18,700 m), completed by Asarco, Minero Peru and Anglo American in the period 1960–2012. Southern Copper has not performed any drilling on the Project. A total of 53 core holes (71,968 m) from the 2009–2012 drill campaign supports mineral resource estimation. No explanation was available to Wood as to why certain drill holes from the 2009–2012 campaigns were excluded from the estimate. Some holes may have been excluded as they were completed after the June 2012 database closeout date; however, other drill holes completed prior to that date are also excluded from estimation support. Any future mineral resource update should include a reassessment of all drilling and suitability of data to support estimation. It is likely that such an update will be based on more drill holes than the current estimate.

Logging identified and recorded lithology, texture, alteration type and style with minerals in the assemblage, and mineralization type. A short-wave infrared spectrometer, Terraspec, was used to identify the different types of hydrothermal clay minerals. Petrography was used to differentiate the different intrusive events that generate mineralization and alteration. In 2011–2012, geotechnical logging included rock type, rock quality designation (RQD), number of discontinuities, depth of discontinuities, discontinuity type, alpha angle, beta angle, estimated uniaxial strength, persistence, aperture, roughness, infilling type, weathering/alteration grade, and presence of water.

Recoveries were generally good. Lower recoveries were recorded where zones of cover were logged.

There is no record of the methodology used to survey hole collars in 2009 or earlier holes or in the underground workings. In 2011–2012, collar locations were determined using Trimble R6 and R8 differential GPS (DGPS) instruments.

Most 2009 (29 of 30) collars and all 2011–2012 downhole surveys were performed using a gyroscopic instrument from Bornav. No information is available for pre-2009 downhole surveys.

Drill core was typically sampled on 3 m intervals, ignoring geological boundaries, but about 20% of the intervals were shorter and a very small number were longer. Shorter intervals were identified when a mineralized zone was encountered or exited. The minimum sample length was 1.5 m.

There are 1,274 density data at Michiquillay, determined by ALS Minerals using a wax-coated water immersion method. Samples were collected on 20 m intervals except for sulfide and enriched areas where 10 m intervals were used.

Laboratories used prior to 2009 are not well documented. From 1959–1965, Asarco used an unidentified laboratory in El Paso, Texas for total copper assays. The 2009 and 2011–2012 drill samples were analyzed at ALS Minerals. ALS Minerals is ISO 9001 and ISO 17025 accredited and independent of Southern Copper. SGS was used as a check assay laboratory from 2009 to 2011. SGS is ISO 9001 and ISO 17025 accredited and independent of Southern Copper.

Sample preparation for the 2009–2012 work consisted of drying, crushing to 70% passing 2 mm (10 mesh) and pulverizing to 85% passing 74 µm (200 mesh).

Analytical techniques used by ALS Minerals and SGS included:

- Copper and molybdenum were analyzed using a four-acid digestion with atomic absorption spectrometric (AAS) finish
- Acid soluble copper was digested with citric acid and finished with AAS
- Cyanide soluble copper was digested in an aqueous cyanide solution and finished by AAS
- Gold was analyzed by 30 g fire assay with AAS finish
- A 30 element suite, with aqua regia digestion and inductively-coupled plasma (ICP) atomic emission spectroscopy (AES) finish.

Quality assurance and quality control (QA/QC) for the 2009–2012 drill programs consisted of insertion of field duplicates, preparation (crusher) duplicates, pulp duplicates, standard reference materials (standards), coarse blanks, and fine blanks into the sample stream. Check assay samples were sent to a second laboratory. Wood's review of the QA/QC data indicated no material issues.

1.8. Data Verification

Selected Wood personnel in the disciplines of geology, and mineral resource estimation visited the Project site during 2021. During the site visit, Wood personnel reviewed and verified data acquisition procedures with Southern Copper personnel, logged core from eight holes to verify Anglo American logging, and inspected drill platforms and visited outcrops to verify that the lithologies and alteration in the database were properly identified.

Wood also examined the available density data, conducted a 30% data integrity check on the data in the Project database, and reviewed the geologic model by comparing the logged intercepts in core holes against the interpretations of the geologic model in east–west sections and the block model encoded with information on lithology, structures, and zones of mineralization.

Based on the data made available, Wood considers that a reasonable level of verification has been completed, and that no material issues would have been left unidentified from the programs undertaken. Based on the data made available, Wood considers that a reasonable level of verification has been completed, and that no material issues would have been left unidentified from the programs undertaken. The data are suitable for use in mineral resource estimation.

1.9. Metallurgical Testwork

Three testwork facilities were used during the 2007 metallurgical testwork campaigns. G&T Metallurgical Services of Kamloops, Canada, completed cyanide leach and flotation testwork in 2011, and CIMM and SGS, both located in Santiago, Chile, completed comminution tests in 2011 and 2007 respectively.

Testwork completed included comminution (SMC a x b breakage parameters and Bond work index tests); evaluations of grindability test results and grinding system designs; primary flotation testwork; and whole ore cyanidation.

The testwork data provide an initial indication that mineralization is amenable to flotation to produce a copper concentrate and can be processed in a conventional circuit. The testwork data, however, do not provide a clear understanding of the product quality in respect of the copper content.

Forecast copper recoveries by alteration type were:

- Secondary: 90.2%
- Potassic: 90.3%
- Chloritic–sericitic: 82.2%
- Sericitic: 84.3%
- Average: 85.4%.

Testing was performed on composite samples representing the main alteration types found in the deposit. Based on the available information, Wood is unable to assess how representative of the deposit the samples used for the testwork are. Wood considers that the testwork can support inferred mineral resources.

Deleterious elements are present in low concentration in the mineralization, and there is no indication that they would adversely affect quality of the concentrate.

1.10. Mineral Resource Estimates

1.10.1. Estimation Methodology

The current mineral resource estimate was prepared by GeoInnova Consultores Ltda Chile (GeoInnova), using Vulcan software, for Anglo American in 2013. Southern Copper acquired the Project in 2018 and has not updated that estimate as no additional drilling has been completed. Wood reviewed the GeoInnova model in detail.

Wood completed exploratory data analysis on assay data and composite data in order to validate the domain definition strategies used by GeoInnova.

Lithology, mineralization, and alteration were modeled as wire frames. The lithology model is based on eight lithologies. Mineralization was modeled in four zones and cover (glacial deposits). Alteration was modeled using six alteration types and cover (glacial deposits). Lithology and mineralization were used to control the estimation. Alteration was not used to identify estimation domains.

Density was generally estimated by ordinary kriging (OK) in two passes. Where blocks were not estimated by OK in two passes, those blocks were assigned the average value of density in the estimation domain.

Outliers in composites and estimation domains were controlled using high-yield restrictions. The choice of thresholds was made by analyzing the copper distributions in the different domains and considering as extreme values those percentiles 99%, 98% and 95% of the data.

Estimation domains were defined for total copper, molybdenum and gold by combining the mineralized zones with lithological types.

GeoInnova generated 3 m fixed-length composites that ignored geological boundaries.

Variograms were constructed to provide appropriate search ranges to be used during estimation.

Ordinary kriging was used to estimate total copper, gold, and molybdenum. Total copper required four passes but gold and molybdenum required three passes for the estimates.

Wood validated the mineral resource estimate using visual methods and by evaluating global and local bias. Wood concluded that the global bias could be improved, especially in the domains of greatest economic interest because a global bias >5% is considered to be high in the context of a porphyry deposit. Four of 11 domains show biases of between >5% and <10% and two domains have biases of >10%. One domain exhibited a local bias that is potentially a concern; however, Wood accepted the result for the purposes of this Report, but recommended that the bias be reviewed in the next mineral resource estimate update.

GeoInnova assigned blocks with a drill spacing <150 m with an indicated classification, and blocks with a drill spacing of >150 m were classified as inferred.

The incorporation of the uncertainties resulted in blocks that had initially been classified by GeoInnova as indicated, being reclassified by Wood as inferred. Wood reclassified all of the mineral resources as inferred because of global and local biases within some estimation domains, weaknesses in the estimation plan, and the patchy nature of the areas with sufficiently dense drilling to classify indicated mineral resources. Wood also noted that of the 101 drill holes in the database, only 53 were used in the mineral resource estimate. In addition, when considering technical and economic factors, the downgrade of the indicated classification was supported by the uncertainty surrounding the metallurgical testwork

To meet the content requirements of an Initial Assessment to support Mineral Resource estimates, Wood evaluated the content requirements set out in Table 1 of §229.1302 (Item 1302) "Qualified person, technical report summary, and technical studies". For the purpose of this initial assessment, the optimization is based on copper only.

Wood constrained the mineral resource estimates within a conceptual pit shell using a Lerchs–Grossmann algorithm and the parameters set out in Table 1-1.

Benchmarks, information from a recently-completed study for Southern Copper's Los Chancas Project in Peru, and commercial terms provided by Southern Copper during 2021 support the economic parameters used in the pit optimization for the Michiquillay deposit. Metallurgical recoveries were compiled from past studies and reports. An average copper recovery of 85.4% was used. Wood considers those blocks within the constraining resource pit shell and above the cut-off applied to have reasonable prospects for economic extraction.

To establish the copper price forecasts Wood used a combination of information derived from 22 financial institutions, from pricing used in technical reports filed with Canadian regulatory authorities over the previous 12-month period, from pricing reported by major mining companies in public filings such as annual reports in the previous 12-month period, spot pricing, and three-year trailing average pricing. Wood considers that a long-term price forecast of US$3.30/lb Cu is reasonable. It is in accordance with industry-accepted practice to use higher metal prices for the mineral resource estimates than the pricing used for mineral reserves.

Table 1-1: Pit Optimization Parameters

Parameter	Units	Value
Metal Price		
Copper	US$/lb	3.80
Discount rate	%	10.00
Mining Parameters		
Base mining cost	US$/t mined	1.7
Incremental haulage cost	US$/t mined	0.018
Processing Parameters		
Processing rate	t/day	100,000
Process Cost		
Process	US$/t	5.82
Metallurgical Recoveries		
Copper	%	85.4
G&A cost	US$/t processed	1.12
Geotechnical Parameters		
All material types: default	Pit slope angle degrees	38
Moraine/glacial till (to 50 m)	Pit slope angle degrees	34
Concentrates		
Moisture	%	8
Grade copper concentrate	%	28
Concentrate losses	%	0.5
Treatment & Refining Cost		
Treatment	US$/t con dry	90.00
Refining Cost		
Copper	US$/lb. payable Cu.	0.09
Payable Metal		
Copper	%	96.5
Concentrate Sales Cost		
Trucking	US$/wmt con	32.00
Port	US$/wmt con	23.21
Ocean freight	US$/wmt con	91.50

Parameter	Units	Value
Total	US$/wmt con	146.71
Royalty		
Government/communities royalty (payable to Activos Mineros)	%NSR	3
Government royalty (minimum Modified Mining Royalty payable)	%NSR	1

The copper price forecast of US$3.30/lb was increased by 15% to provide the mineral resource estimate copper price estimate of US$3.80/lb. The assumed exchange rate was US$1.00 = PENS/3.60. This exchange rate was provided by Southern Copper.

1.10.2. Mineral Resource Statement

Mineral resources are reported using the mineral resource definitions set out in SK1300. The reference point for the estimate is in situ. The inferred mineral resource estimates are included in Table 1-2. Wood is the QP Firm responsible for the estimates.

Areas of uncertainty that may materially impact all of the mineral resource estimates include: changes to long-term metal price and exchange rate assumptions; changes in local interpretations of mineralization geometry such as presence of unrecognized mineralization off-shoots; faults, dikes and other structures; and continuity of mineralized zones; changes to geological and grade shape, and geological and grade continuity assumptions; changes to metallurgical recovery assumptions; changes to the input assumptions used to derive the conceptual open pit shell that is used to constrain the estimates; changes to the cut-off values applied to the estimates; variations in geotechnical (including seismicity), hydrogeological and mining assumptions; and changes to environmental, permitting and social license assumptions.

Table 1-2: Inferred Mineral Resource Statement

Resources	Tonnage (Mt)	Copper Grade (%)	Contained Copper (M lb)
Inferred	2,288	0.43	21,554.82

Notes to Accompany Mineral Resource Tables

1. Mineral resources are reported in situ and are current as at December 31, 2021. Mineral resources are not mineral reserves and do not have demonstrated economic viability. Wood is the QP Firm responsible for the estimate.
2. Mineral resources are reported within a conceptual pit shell that uses the following input parameters: metal prices of US$3.80/lb Cu; copper metallurgical recovery assumptions of 85.4%; base mining costs of US$1.70/t; mill process operating costs of US$5.82/t, general and administrative costs of US$1.12/t; variable pit slope angles that vary from 34–38º; 3% NSR royalty payable to Activos Mineros Mineral resources are reported above a cut-off grade of 0.1% Cu.
3. Numbers in the table have been rounded. Totals may not sum due to rounding.

Specific factors that may affect the estimates include:

- The lack of density data in the host rock is a potential risk to the optimization results and Wood recommends that Southern Copper complete density investigations to support future studies
- Lack of supporting documentation for surveying of collar locations and downhole surveys add uncertainty to the quality of these data
- The absence of assay certificates for the 2009 drill program is a risk because the integrity of the data of this program, which represents a considerable percentage of the database, cannot be verified
- Use of paper copies of the geological model rather than digital 3D solids and/or polygons is not adequate verification for a large, complex model
- Interpolation with a minimum of seven composites, a maximum of 12 and a maximum per borehole of five composites (in effect using 2–3 drill holes on average to estimate a block) has a risk of a local inaccuracy of the estimate, which in turn was reflected in a global bias outside the tolerance range of 5% that the industry typically considers the maximum.

1.11. Risks and Opportunities

Risks that may affect the mineral resource estimates were outlined in Chapter 1.10.2.

1.11.1. Risks

Other risks that could affect proposed Project development and the resource estimate include the following.

As part of the application for the EIAsd, completed archaeological surveys identified a number of archaeological sites within the Project area. Southern Copper will be required to obtain a Certificate of Non-Existence of Archaeological Remains (CIRA) as part of any more detailed activities. Alternatively, Southern Copper will need to obtain authorization from the Ministry of Culture to clear the area of archaeological remains (*rescate arqueológico)* before starting proposed activities. If the sites are found to be of significance, there is a risk that the conceptual open pit as envisaged in this Report would require modification. There is also a risk that the conceptual project infrastructure locations that were assumed in the Initial Assessment would not be able to be constructed where provisionally envisaged, and additional studies would be required.

As with any large mining project in Peru, the Michiquillay Project is subject to certain risks, including:

- Potential social conflicts based on negative community or regulatory perceptions. These could include unfulfilled expectations, new leadership with new ideas as to how agreements should be concluded, differing ideas of appropriate compensation, or changes in the community boundaries
- Agreements with communities are not respected by certain members of a community and further demands are made for social investment or other considerations not covered by the agreements
- Governmental changes to mining policies and mining regulations
- Non-governmental organizations that promote an anti-mining culture.

1.11.2. Opportunities

Opportunities for the Michiquillay Project include:

- Higher metal prices than forecast could present upside opportunities
- Slightly more tonnage may be able to be estimated due to the possible underestimation of specific gravity values

- An increase of the insertion rate of standards in the analysis batches to 6% (Wood's recommended practice) will improve confidence in the accuracy of the assays which translates to improved confidence in estimated grades
- It may be possible to reconstruct the geological model using the existing geological sections which will save significant time and money over starting from first principles
- Use of 7.5 m composites (½ bench height) will improve precision of the estimation by maintaining proportionality and will reduce the local bases noted in the current model
- There are 44 drill holes from the 2009–2012 drill campaigns that were not used for mineral resource estimation. Use of those drill holes will likely improve confidence in the estimate.

1.12. Conclusions

Under the assumptions presented in this Report, the Michiquillay Project represents a substantial mineral resource that warrants technical evaluation and mining studies.

Additional work is warranted on the Project to upgrade the mineral resource confidence categories.

1.13. Recommendations

The recommendations cover the discipline areas of geology, mineral resource estimates, geotechnical, metallurgy, infrastructure and environmental. The total recommended budget estimate to complete the programs is US$11.8–US$14.4 M.

Recommendations include:

- Geology:
  - Compile information on data from programs that were completed prior to Anglo American's Project interest
  - Complete 14,000 m twin-hole drill program consisting of oriented core holes
  - Complete a re-survey program to locate all drill collars still visible in the field
  - Complete a downhole survey program on all drill holes that are more than 50 m deep, are still open, and can be surveyed

  - Complete density determinations on available drill core, and on the core generated during the twin hole program
- Geotechnical
  - Log the oriented core from the twin-hole drill program and collect samples for geomechanical tests
- Mineral resource estimates
  - Update geological, alteration, structural and mineralization interpretations and models
  - Update mineral resource estimates
- Metallurgy
  - Complete a comprehensive testwork program. This should be based on PQ core collected from a dedicated 10,500 m metallurgical drill program.
  - Construct a geometallurgical model
  - Evaluate product from the testwork for marketing potential and confirm that the earlier testwork that showed low concentrations of deleterious elements is supported
- Infrastructure
  - Complete trade-off studies to determine sites for key infrastructure
  - Evaluate alternatives for tailings and waste disposal
- Environmental
  - Update environmental baseline studies
  - Develop a plan for diversion of the fish-bearing Michiquillay stream
  - Obtain a CIRA for archeological sites within the boundary of the conceptual open pit
  - Southern Copper should continue with its community relations efforts and plans
  - Southern Copper should set up a Community Care Service

2. INTRODUCTION

2.1. Registrant

This technical report summary (the Report) was prepared for Southern Copper Corporation (Southern Copper) by Wood Group USA, Inc. (Wood, acting as the QP Firm) on the Michiquillay copper project (the Project), located in Cajamarca Province, Peru. The Project location is shown in Figure 2-1.

The Project contains the Michiquillay copper–gold–molybdenum deposit.

2.2. Terms of Reference

2.2.1. Report Purpose

The Report was prepared to be attached as an exhibit to support mineral property disclosure, including mineral resource estimates, for the Michiquillay Project in Southern Copper's Form 10-K for the year ending December 31, 2021.

The Michiquillay deposit has mineral resources estimated. There are no current mineral reserves estimated for the Michiquillay deposit.

2.2.1 Terms of Reference

Unless otherwise indicated, the metric system is used in this Report.

Mineral resources are reported using the definitions in Subpart 229.1300 – Disclosure by Registrants Engaged in Mining Operations in Regulation S–K 1300 (SK1300).

The Report uses US English.

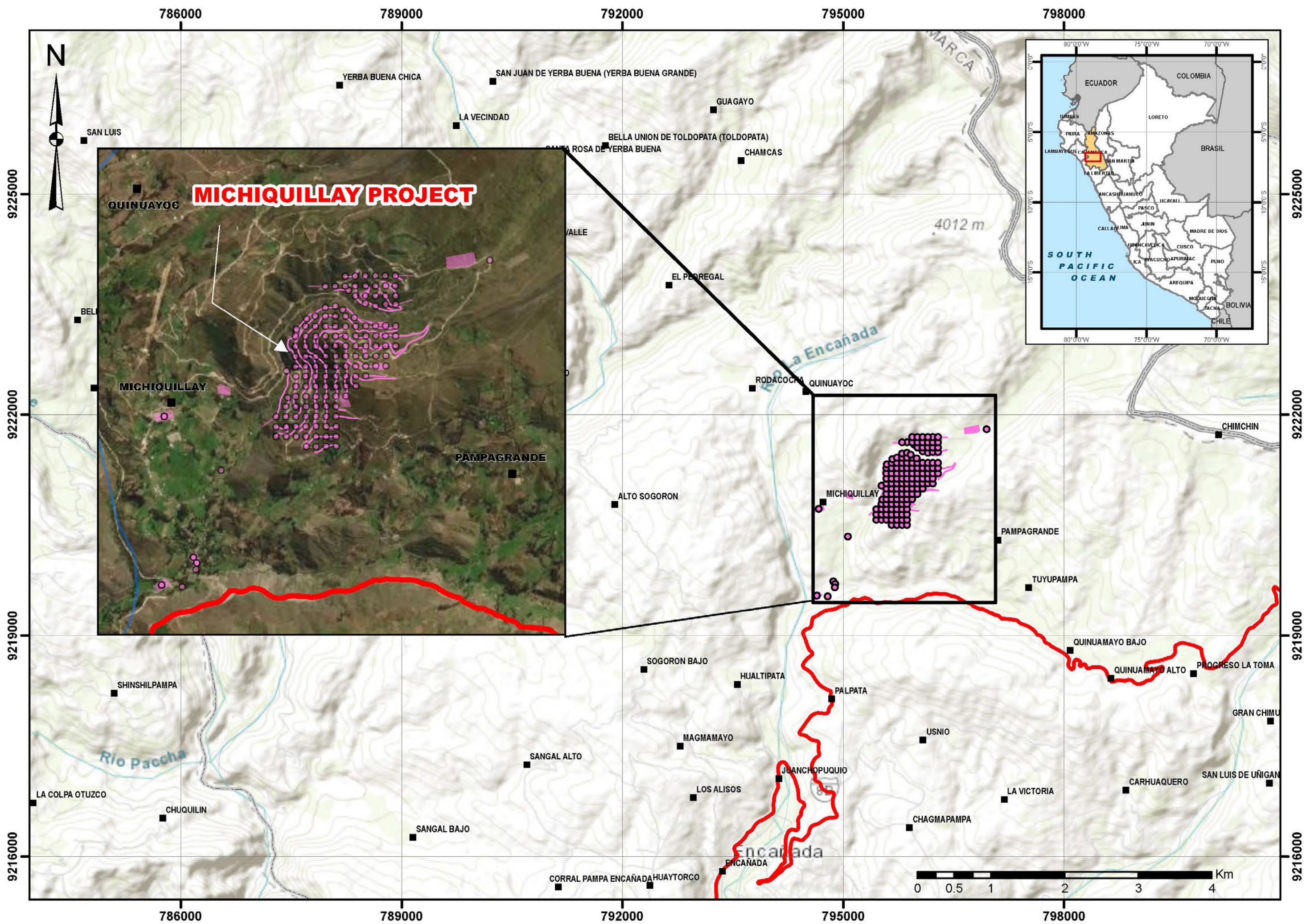
2.3. Qualified Persons

Wood is using the allowance for a third-party firm consisting of mining experts to date and sign the Report.

Wood had appropriate individual Qualified Persons (QPs) prepare the content that is summarized in this Report.

A portion of the information was provided by Southern Copper as the registrant as set forth in Chapter 25. Wood has relied on the registrant for the information specified in Chapter 25.

Figure 2-1: Project Location Plan



Note: Figure prepared by Wood, 2021. Note pink dots and lines show locations of drill holes and drill access roads respectively.

2.4. Site Visits and Scope of Personal Inspection

Wood QPs and support staff visited the Project site. The scope of inspection by each discipline area is summarized in Table 2-1.

2.5 Report Date

The Report is current as at December 31, 2021.

2.6. Information Sources

The reports and documents listed in Chapter 24 and Chapter 25 of this Report were used to support Report preparation.

2.7. Previous Technical Report Summaries

Southern Copper has not previously filed a technical report summary on the Project.

Table 2-1: Scope of Personal Inspection

Discipline Area	Site Visit Date	Scope of Personal Inspection
Geology/mineral resources	October 20–22, 2021	Reviewed the data acquisition process with Southern Copper geologists. Completed a quick log of four holes from the 2009 drilling campaign and four drill holes from the 2011–2012 campaign. Verification included inspection of the geological contacts of the lithology, mineralization and alteration zones, as well as the visual correlation of the grades reported at different sampling intervals. Reviewed the drilling sampling methodology and procedures associated with quality assurance and quality control. Visited and inspected drilling platforms and outcrops of lithologies that were modelled in the geological model.

3. PROPERTY DESCRIPTION

3.1. Property Location

The Michiquillay Project is located in the Western Cordillera of the Andes in northwest Perú, approximately 45 km from Cajamarca and 900 km northeast of Lima.

Project centroid co-ordinates are approximately 7º 02′ 23.65″ S and 78º 19′ 23.59″ W.

The Michiquillay deposit is located at 7º 02′ 17.53″ S and 78º 19′ 29.30″ W.

The datum used is UTM WGS84.

3.2. Property and Title in Peru

The QP Firm has not independently verified the following information which is in the public domain and have sourced the data from Elias (2019), Ernst and Young (2017), and KPMG (2016) as well as from official Peruvian Government websites.

3.2.1. Regulatory Oversight

The right to explore, extract, process and/or produce minerals in Peru is primarily regulated by mining laws and regulations enacted by Peruvian Congress and the executive branch of government, under the 1992 Mining Law. The law regulates nine different mining activities: reconnaissance; prospecting; exploration; exploitation (mining); general labor; beneficiation; commercialization; mineral transport; and mineral storage outside a mining facility.

The Ministry of Energy and Mines (MINEM) is the authority that regulates mining activities. MINEM also grants mining concessions to local or foreign individuals or legal entities, through a specialized body called The Institute of Geology, Mining and Metallurgy (INGEMMET).

Other relevant regulatory authorities include the Ministry of Environment (MINAM), the National Environmental Certification Authority (SENACE), the Supervisory Agency for Investment in Energy and Mining (OSINERGMIN), the Ministry for Agriculture, and the Ministry for Culture. The Environmental Evaluation and Oversight Agency (OEFA) monitors environmental compliance.

3.2.2. Mineral Tenure

Mining concessions can be granted separately for metallic and non-metallic minerals. Concessions can range in size from a minimum of 100 ha to a maximum of 1,000 ha.

A granted mining concession will remain valid providing the concession owner:

- Pays annual concession taxes or validity fees (derecho de vigencia), currently US$3/ha, are paid. Failure to pay the applicable license fees for two consecutive years will result in the cancellation of the mining concession
- Meets minimum expenditure commitments or production levels. The minima are divided into two classes:
  - Achieve "Minimum Annual Production" by the first semester of Year 11 counted from the year after the concession was granted, or pay a penalty for non-production on a sliding scale, as defined by Legislative Decree N° 1320 which became effective on 1 January, 2019. "Minimum Annual Production" is defined as one tax unit (UIT) per hectare per year, which is S/4,400 in 2021 (about US$1,220)
  - Alternatively, no penalty is payable if a "Minimum Annual Investment" is made of at least 10 times the amount of the penalty.

The penalty structure sets out that if a concession holder cannot reach the minimum annual production on the first semester of the 11th year from the year in which the concessions were granted, the concession holder will be required to pay a penalty equivalent to 2% of the applicable minimum production per year per hectare until the 15th year. If the concession holder cannot reach the minimum annual production on the first semester of the 16th year from the year in which the concessions were granted, the concession holder will be required to pay a penalty equivalent to 5% of the applicable minimum production per year per hectare until the 20th year. If the holder cannot reach the minimum annual production on the first semester of the 20th year from the year in which the concessions were granted, the holder will be required to pay a penalty equivalent to 10% of the applicable minimum production per year per hectare until the 30th year. Finally, if the holder cannot reach the minimum annual production during this period, the mining concessions will be automatically expired.

Title-holders of mining concessions that were granted before December 2008 were obliged to pay the penalty from 2019 if the title-holder did not reach either the Minimum Annual Production or make the Minimum Annual Investment in 2018.

Mining concessions will lapse automatically if any of the following events take place:

- The annual fee is not paid for two consecutive years
- The applicable penalty is not paid for two consecutive years

- The Minimum Annual Production Target is not met within 30 years following the year after the concession was granted.

Beneficiation concessions follow the same rules as for mining concessions. A fee must be paid that reflects the nominal capacity of the processing plant or level of production. Failure to pay such processing fees or fines for two years would result in the loss of the beneficiation concession.

3.2.3. Surface Rights

Mining companies must negotiate agreements with surface landholders or establish easements. Where surface rights are held by communities, such easements must be approved by a qualified majority of at least two thirds of registered community members. In the case of surface lands owned by communities included in the indigenous community database maintained by the Ministry of Culture, it is necessary to go through a prior consultation process before administrative acts, such as the granting of environmental permits, are finalized. For the purchase of surface lands owned by the government, an acquisition process with the Peruvian state must be followed through the Superintendence of National Properties.

Expropriation procedures have been considered for cases in which landowners are reluctant to allow mining companies to have access to a mineral deposit. Once a decision has been made by the Government, the administrative decision can only be judicially appealed by the original landowner as to the amount of compensation to be paid.

3.2.4. Water Rights

Water rights are governed by Law 29338, the Law on Water Resources, and are administered by the National Water Authority (ANA) which is part of the Ministry of Agriculture. There are three types of water rights:

- License: this right is granted in order to use the water for a specific purpose in a specific place. The license is valid until the activity for which it was granted terminates, for example, a beneficiary concession
- Permission: this temporary right is granted during periods of surplus water availability
- Authorization: this right is granted for a specified quantity of water and for a specific purpose. The grant period is two years, which may be extended for an additional year, for example for drilling.

In order to maintain valid water rights valid, the grantee must:

- Make all required payments including water tariffs
- Abide by the conditions of the water right in that water is only used for the purpose granted.

Water rights cannot be transferred or mortgaged. However, in the case of the change of the title holder of a mining concession or the owner of the surface land who is also the beneficiary of a water right, the new title holder or owner can obtain the corresponding water right.

3.2.5. Environmental Considerations

MINAM is the environmental authority, although the administrative authority is the Directorate of Environmental Affairs (DGAAM) of MINEM. The environmental regulations for mineral exploration activities were defined by Supreme Decree No. 020-2008-EM of 2008. New regulations for exploration were defined in 2017 by Supreme Decree No. 042-2017-EM.

An Environmental Technical Report (Ficha Técnica Ambiental or FTA) is a study prepared for approval of exploration activities with non-significative environmental impacts and less than 20 drilling platforms. The environmental authority has 10 working days to make observations.

An Environmental Impact Declaration (Declaración de Impacto Ambiental or DIA) has to be presented for Category I exploration activities which have a maximum of 40 drilling platforms or disturbance of surface areas of up to 10 ha. The environmental authority has 45 working days to make observations.

A semi-detailed Environmental Impact Study (Estudio de Impacto Ambiental Semi-Detallado or EIAsd) is required for Category II exploration programs that have between 40–700 drilling platforms or a surface disturbance of more than 10 ha. The environmental authority has 96 working days to make observations. The total process including preparation of the study by a registered environmental consulting company can take 6–8 months.

A full detailed Environmental Impact Study (Estudio de Impacto Ambiental Detallado or EIAd) must be presented for mine construction. The preparation and authorization of such a study can take as long as two years.

3.2.6. Permits

In order to start mineral exploration activities, a company is required to comply with the following requirements and obtain a resolution of approval from MINEM, as defined by Supreme Decree No. 020-2012-EM of 6 June 2012:

- Resolution of approval of the Environmental Impact Declaration
- Work program
- A statement from the concession holder indicating that it is owner of the surface land, or if not, that it has authorization from the owners of the surface land to perform exploration activities
- Water license, permission or authorization to use water
- Mining concession titles
- A certificate of non-existence of archeological remains (CIRA) whereby the Ministry of Culture certifies that there are no monuments or remains within a project area. However, even with a CIRA, exploration companies can only undertake earth movement under the direct supervision of an onsite archeologist.

3.2.7. Royalties

In 2011, the Peruvian Congress approved an amendment to the mining royalty charge. The mining royalty charge is based on operating income margins obtained from the sale of minerals with graduated rates ranging from 1–12% of operating profits; the minimum royalty charge is equivalent to 1% of net sales. If the operating income margin is 10% or less, the royalty charge is 1%, and for each 5% increment in the operating income margin, the royalty charge rate increases by 0.75%, to a maximum of 12%.

At the same time the Peruvian Congress enacted a Special Mining tax that is also based on operating income. Rates range from 2–8.4%. If the operating income margin is 10% or less, the Special Mining Tax is 2%, and for each 5% increment in the operating income margin, the special mining rate increases by 0.4%, to a maximum of 8.4%.

3.2.8. Other Considerations

Producing mining companies must submit, and receive approval for, an environmental impact study that includes a social relations plan, certification that there are no archaeological remains in the area, and a draft mine closure plan. Closure plans must be accompanied by payment of a monetary guarantee.

In April 2012, Peru's Government approved the Consulta Previa Law (prior consultation) and its regulations approved by Supreme Decree Nº 001-2012-MC. This requires prior consultation with any indigenous communities as determined by the Ministry of Culture, before any infrastructure or projects, in particular mining and energy projects, are developed in their areas.

Mining companies separately obtain water rights from the National Water Authority and surface lands rights from individual landowners.

3.2.9. Fraser Institute Survey

The QP Firm used the Investment Attractiveness Index from the 2020 Fraser Institute Annual Survey of Mining Companies report (the Fraser Institute survey) as a credible source for the assessment of the overall political risk facing an exploration or mining project in Peru. The Fraser Institute annual survey is an attempt to assess how mineral endowments and public policy factors such as taxation and regulatory uncertainty affect exploration investment.

The QP Firm used the Fraser Institute survey because it is globally regarded as an independent report-card style assessment to governments on how attractive their policies are from the point of view of an exploration manager or mining company senior management, and forms a proxy for the assessment by the mining industry of the political risk in Peru.

In 2020, the rankings were from the most attractive (1) to the least attractive (77) jurisdiction, of the 77 jurisdictions included in the survey. Peru ranked 34 out of 77 jurisdictions in the attractiveness index survey in 2020; 42 out of 77 in the policy perception index; and 30 out of 77 in the best practices mineral potential index.

3.3. Ownership

3.3.1. Ownership History

On June 12, 2018, Southern Copper and Activos Mineros S.A.C. (Activos Mineros), a Peruvian state-owned entity, entered into an "Agreement for the Transfer of the Mining Concessions and other assets that make up the Michiquillay Copper Project" (the Agreement). Under the Agreement, the following assets were transferred from Activos Mineros to Southern Copper:

- 18 mining concessions

- Eight surface land parcels
- Project data
- Drill core.

The transfer was effective upon signing of the Agreement, such that Southern Copper is the current legal owner of the transferred assets.

The Agreement was subdivided into two periods:

- Suspension period: a three year period that could be extended for two additional years. The extension was requested, and the Project is currently in the fourth year of the suspension period. During the suspension period, Southern Copper must obtain surface rights and the authorizations that would enable exploration activities to be initiated. The suspension period is automatically ended when these conditions are met
- Pre-operative period: commences immediately following the end of the suspension period. The pre-operative period has a 12-year duration that can be extended for an additional three years providing there is an approved feasibility study. Within the pre-operative period, the following conditions must be met:
  - Meet minimum investment commitments of:
    - US$20 million during the first five years (no less than an aggregate of US$6 million during the fourth and fifth years).
    - US$12.5 million per year, as from the sixth year until the approval of the feasibility study.
    - US$30 million per year, as from the approval of the feasibility study until the end of the pre-operative period.
  - Submit a feasibility study to the Peruvian Agency for the Promotion of Private Investment (PROINVERSON)
  - Obtain all relevant permits and authorizations to allow mining activities
  - Complete mine construction

The Agreement requires that Southern Copper pays Activos Mineros US$400 million, in four tranches:

- US$12.5 million: to be paid simultaneously with the execution of the Agreement. This payment was made
- US$12.5 million: to be paid 15 days following the end of the third year of the suspension period. This payment was made
- US$187.5 million: to be paid 15 days following the end of the fourth year of the pre-operative period. This payment has not been made as the Project is not in the pre-operative period
- US$187.5 million: to be paid within 15 days following the end of the fifth year of the pre-operative period. This payment has not been made as the Project is not in the pre-operative period.

Southern Copper has paid US$25 million of the amount required under the Agreement. The US$375 million balance is secured by a legal mortgage, which is recorded in the concession record files, together with a record of Southern Copper's concession ownership. As matter of Peruvian law, "legal mortgages" are automatically granted over real estate assets such as mining concessions, when the purchase price is not paid in full. This mortgage will only be cancelled when the outstanding balance is paid.

Southern Copper may unilaterally terminate the Agreement at any time during the suspension period. If this occurs, no additional payments are required.

Southern Copper may unilaterally terminate the Agreement at any time during the pre-operative period. If this occurs during the first three years of the pre-operative period, no additional payments are required. If termination occurs during the fourth year, Southern Copper must pay US$187.5 million of the purchase price balance and 50% of the non-invested amount of the US$20 million minimum investment commitment. If termination occurs during the fifth year, Southern Copper must pay US$187.5 million of the purchase price balance and all of the US$20 million minimum investment commitment.

In addition to the payments under the Agreement, Activos Mineros is entitled to a 3% royalty, referred to as the contractual royalty, over the net annual income accruing from the sale of the metals produced from the minerals extracted from the concessions. The contractual royalty is payable "as from the initiation of commercialization of the minerals extracted from the concessions" and as long as there are "invoiced sales" of minerals extracted from the concessions. The "initiation of commercialization" is considered to be the date of the first invoice resulting from the first mineral sales.

Fifty percent of the Agreement payments (i.e. 50% of the US$400 million) and 50% of the contractual royalty payments (i.e. 50% of the 3% contractual royalty payments) will be transferred by PROINVERSON to a social fund, "Asociación Fondo Social Michiquillay "

Southern Copper must provide a US$5 million security bond to PROINVERSION during the pre-operative period, and an additional US$1 million security bond during Project operations.

3.3.2. Current Ownership

Michiquillay operated by Southern Perú Copper Corporation, Sucursal del Perú (Southern Perú Branch) which is a majority-owned, indirect subsidiary of Grupo Mexico S.A.B de CV. An ownership organogram is provided in Figure 3-1.

3.4. Mineral Title

The Michiquillay Project consists of 18 mining concessions with a total area of 4,051.4 ha (Table 3-1). The concession locations are shown on Figure 3-2.

Mining concessions in Peru are located on the ground using a grid system delimited by INGEMMET.

3.5. Property Agreements

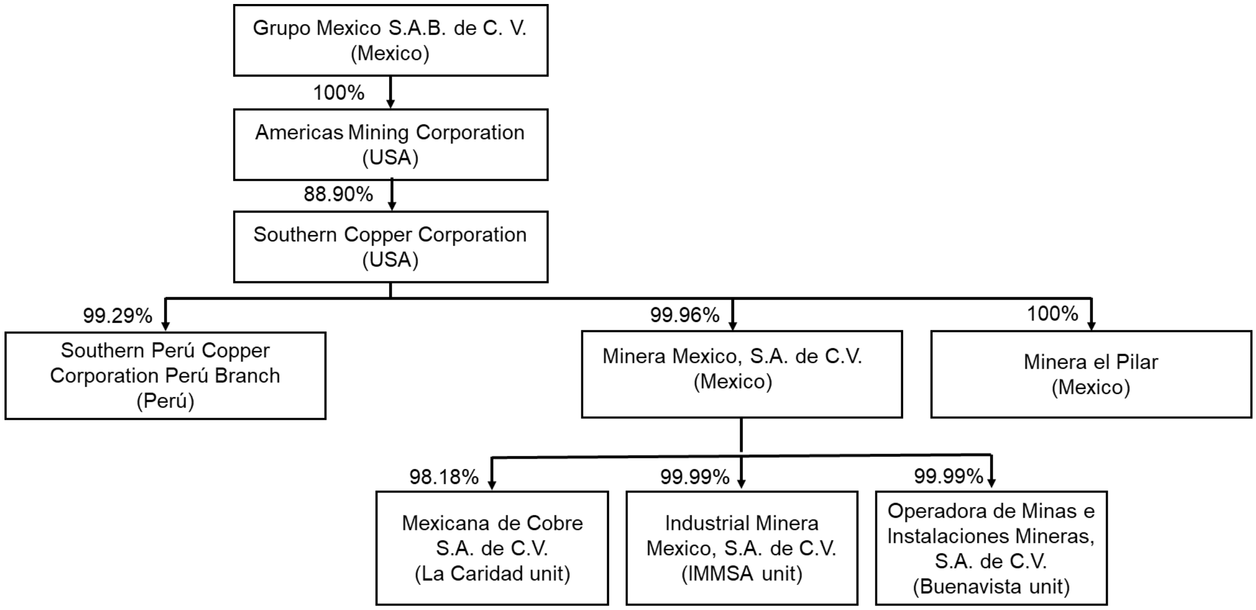
To be entitled to develop the Project as a mine, Southern Copper must comply with certain requirements set out in the Agreement (see Chapter 3.3.1).

On September 3, 2021 Southern Copper, the Michiquillay Rural Community and the Encañada Rural Community entered into an “Acuerdo Social” that provides the framework applicable to the parties’ relationship during the Project exploration phase. The agreement was executed on November 4, 2021. Both agreements were discussed with teams designated by each community and approved in General Assemblies with the participation of more than 75% of the qualified members of each community.

Through the “Acuerdo Social”, Southern Copper was granted the surface and access rights by the Michiquillay Rural Community in support of exploration activities.

In addition, Southern Copper agreed to a series of “social commitments” to the Michiquillay Rural Community, to aid the social and economic development of the community and its members.

Figure 3-1: Ownership Organogram



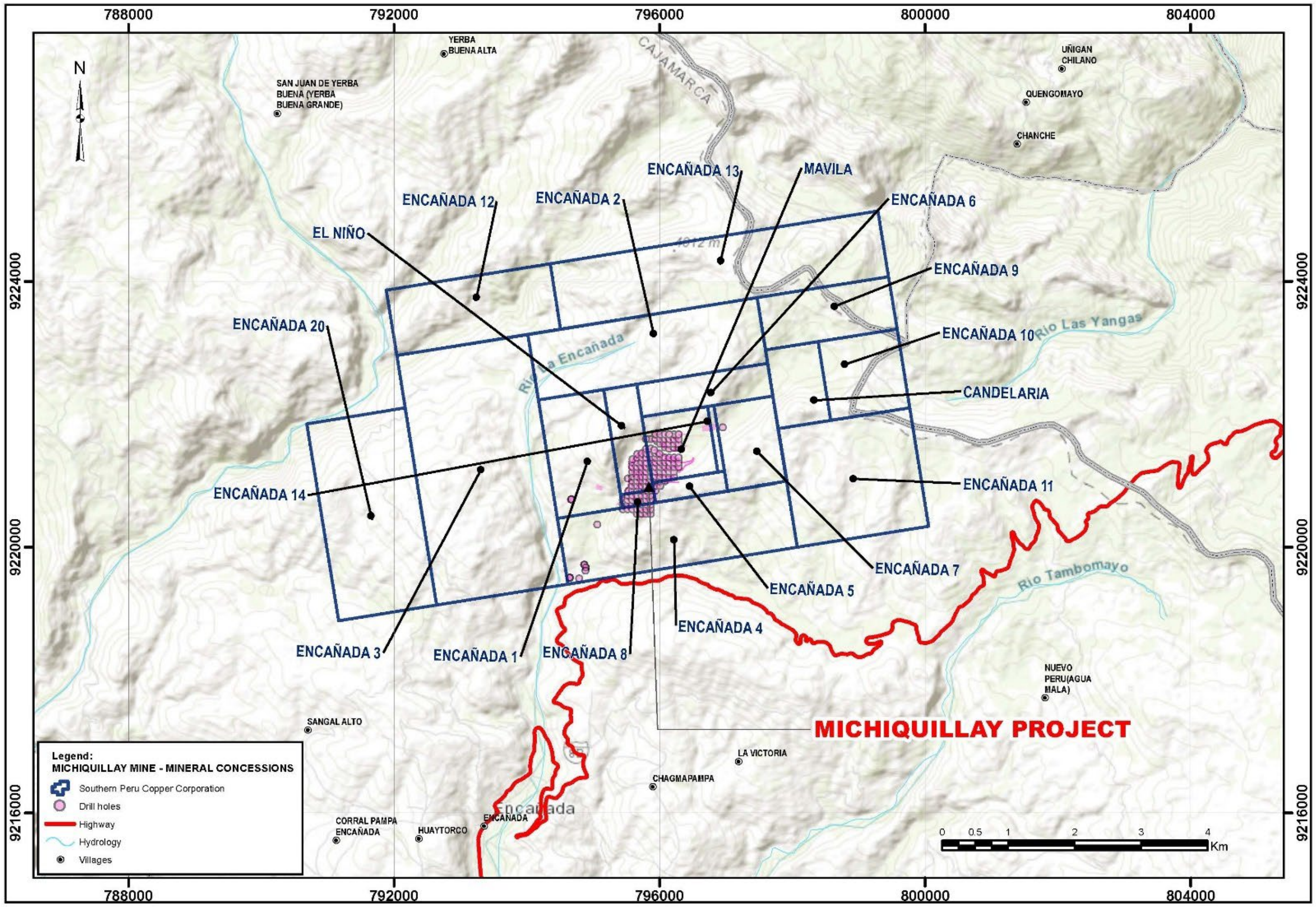
Note: Figure prepared by Southern Copper, 2021.

Table 3-1: Mineral Tenure Summary Table

Concession Name	Code	Area (ha)	Date Granted	Maximum Date To Reach Minimum Production	Royalties Payable
Candelaria	03546051Z08	96.03	31/10/1963	31/12/2048	3% NSR royalty to Activos Mineros
El Niño	03000256X01	80.07	30/10/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 1	03546051Z18	180.05	31/10/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 2	03546051Z17	350.09	31/10/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 3	03546051Z16	760.18	30/10/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 4	03546051Z15	350.1	31/10/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 5	03546051Z14	33.01	31/10/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 6	03546051Z13	100.03	31/10/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 7	03546051Z12	117.39	30/10/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 8	03546051Z11	10	10/8/1972	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 9	03546051Z01	160.05	31/12/1963	31/12/2048	3% NSR royalty to Activos Mineros

Concession Name	Code	Area (ha)	Date Granted	Maximum Date To Reach Minimum Production	Royalties Payable
Encañada 10	03546051Z10	144.05	30/12/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 11	03546051Z09	360.06	23/10/1970	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 12	03546051Z07	250.06	30/12/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 13	03546051Z06	500.14	31/12/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 14	03546051Z05	10	30/12/1963	31/12/2048	3% NSR royalty to Activos Mineros
Encañada 20	03546051Z03	450.1	10/3/1972	31/12/2048	3% NSR royalty to Activos Mineros
Mavila	03546051Z02	100.03	31/10/1963	31/12/2048	3% NSR royalty to Activos Mineros
		4,051.44			

Figure 3-2: Mineral Tenure Location Map



Note: Figure prepared by Wood, 2021.

3.6. Surface Rights

The Michiquillay deposit is located on lands of the Michiquillay Rural Community and the Encañada Rural Community.

Southern Copper has signed surface land use agreements with both communities where the activities proposed in the semi-detailed Environmental Impact Assessment (EIAsd) are anticipated to occur. These agreements allow Southern Copper to conduct exploration activities.

Additional agreements would be required in support of Project development.

3.7. Water Rights

Permits for the use of water for exploration purposes are currently being processed by the National Water Authority and the Marañon Local Authority.

3.8. Royalties

3.8.1. State Royalties

The royalty set out in Chapter 3.2.7 will be payable on production.

3.8.2. Private Royalty

The contractual royalty (see Chapter 3.3.1) will be payable on production.

The royalty will be payable on a half-yearly basis, in US dollars, from the time the Project is put into production.

3.9. Environmental Considerations

The Project is not located in any Protected Natural Area (ANP) or buffer zone. The closest protected areas are the Sunchubamba Hunting Reserve, 25 km from the Michiquillay deposit in a straight line, and the Private San Pedro de Chuquibamba Conversation Area, located 34 km from the deposit in a straight line.

3.9.1. Baseline Studies

A number of baseline studies were completed in support of the EIAsd process including:

- Geomorphology: the Project setting includes glacial and alluvial valleys, and steep to very steep slopes
- Air quality: particulate matter (PM10 and PM2.5), lead, and gases (SO_2, NO_2, H_2S, CO, O_3 and benzene) were below ECA-Aire (DS No. 003-2017-MINAM) thresholds
- Noise: noise readings were primarily related to human activities
- Soil quality: soil sampling indicated elevated arsenic levels due to historical mining activities
- Surface water quality: water quality was generally good, with some parameters elevated due to the proximity of the mineralization to the sampled water sources
- River sediments: some parameters were elevated due to the proximity of the mineralization to the sampled sediment sources
- The effects of vibration on structures: measured vibration levels were within the ranges of the German standard used to assess the impacts
- Flora surveys: about 330 plant species were identified, of which, under Peruvian legislation, two are considered endangered, one is classified as near-threatened, and one is considered to be critically endangered
- Terrestrial fauna surveys: a total of 46 bird, five mammal, six amphibian and reptile, and 156 insect species were identified. Two frog species of concern were noted
- Aquatic fauna surveys: two fish species were identified, together with phytoplankton, zooplankton, periphyton and benthic communities.

Areas of bofedales (bog wetlands) were identified; however, these were confined to valley bottoms, and had been extensively grazed by cattle. There are a number of lagoons in the vicinity of the planned open pit; the closest is Laguna La Botella, immediately to the north of the conceptual pit outline.

3.9.2. Archaeological Studies

An archaeological survey was conducted by AMEC, a Wood predecessor company, in 2011. Work completed included review of available information, visual surface inspection, describing archaeological assessment zones, identifying and locating archaeological sites, and interviews with local stakeholders. AMEC's review incorporated findings from Ponciano (2011) and a 2010 baseline survey.

The surveys identified 26 archaeological sites and isolated archaeological elements in the La Encañada district, as classified under the Archaeological Research Regulations. Of these, four are within the boundary of the conceptual open pit (Table 3-2, Figure 3-3).

In late 2021, Mina Michiquillay 1 was reclassified as having no significant archaeological importance. The stone walls, interpreted to be livestock corrals, were noted to be in a state of poor preservation.

Southern Copper will be required to obtain a Certificate of Non-Existence of Archaeological Remains (CIRA) before starting activities that would disturb these sites. If it is absolutely necessary to locate infrastructure over an archaeological site, Southern Copper must obtain authorization from the Ministry of Culture to clear the area of archaeological remains ("*rescate arqueológico*") before starting proposed activities that would affect the archaeological site.

3.10. Permitting

3.10.1. Permitting Requirements

An EIAsd and subsequent amendment were completed by Anglo American Michiquillay S.A. in 2009 and 2013, respectively (Resolución Directoral N° 057-2009-MEM/AAM and Resolución Directoral N° 182-2013-MEM/AAM). Southern Copper obtained the approval of its EIAsd in October, 2021 (Resolución Directoral N° 190-2021), which was granted by the Environmental Mining Affairs Bureau of the Ministry of Energy and Mines.

On September 3, 2021, Southern Copper executed the "Acuerdo Social" with the peasant community of Michiquillay and La Encañada, by means of which the latter granted the access and surface rights required for Southern Copper to conduct exploration activities in the Project area.

Southern Copper is preparing the documents required to file for a Mining Exploration Initiation Authorization before the Mining Affairs Bureau of the Ministry of Energy and Mines.

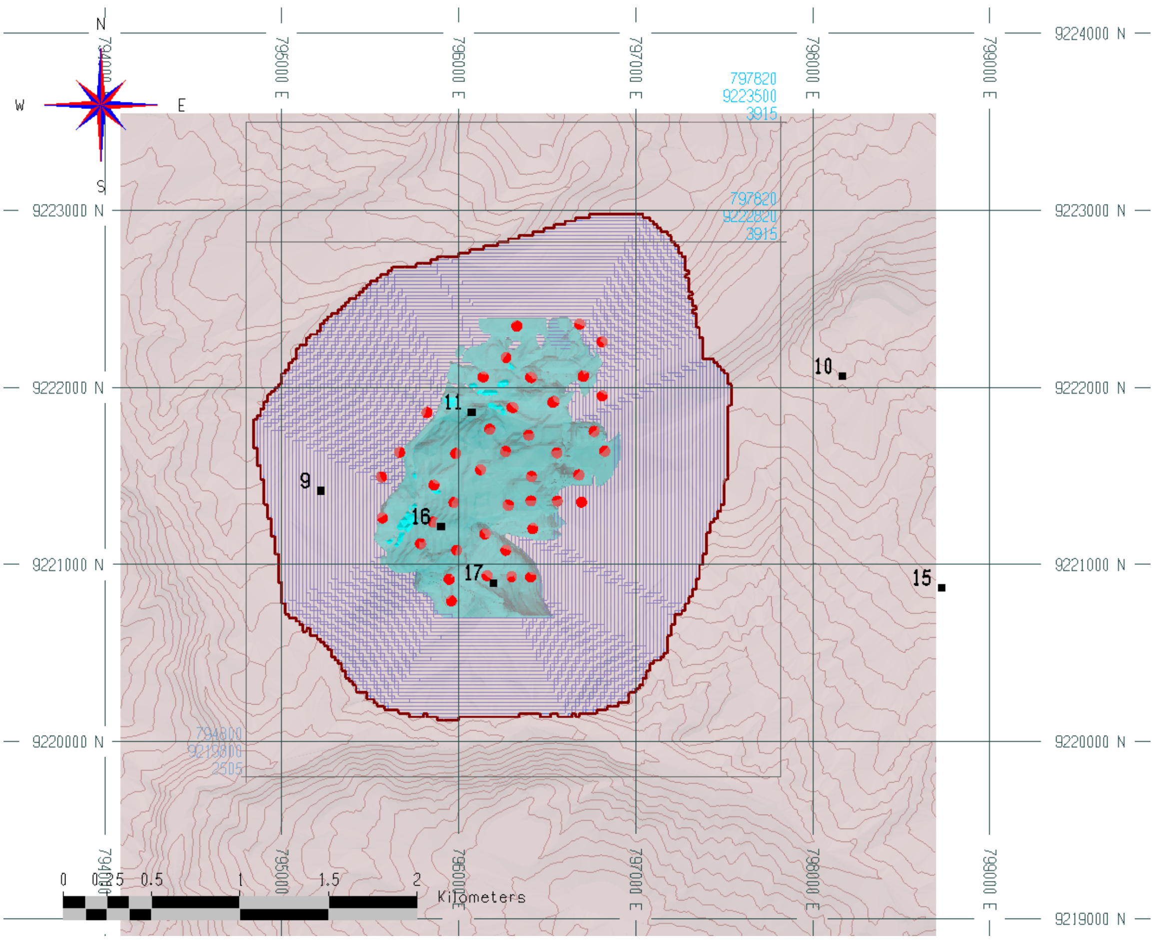
In order to conduct, exploitation and exploration activities the following main permits are normally required:

- The approval of a Detailed EIA by SENACE
- The approval of an authorization to initiate exploitation works by the DGM of MINEM
- The approval of an authorization to build a beneficiation concession by the DGM of MINEM

Table 3-2: Archaeological Sites Within Conceptual Pit Boundary

Site Name	Site Number	Description
Cerro Michiquillay	9	Remnants of stone structures and a rectangular platform surrounded by a perimeter wall; ceramic/pottery shards; assigned to Late Intermediate (1000–1476 C.E.) and Late Horizon (1476–1534 C.E.)
Abrigo Quebrada Las Mellas	11	Rocky shelter oriented towards the Las Mellas creek; fragment of green flint found
Mina Michiquillay 1	16	Stone walls
Mina Michiquillay 2	17	Stone walls

Figure 3-3: Location, Archaeological Sites Within Proposed Pit Boundary



Note: Figure prepared by Wood, 2021. Numbers indicate archaeological sites. Red dots are drill holes. Conceptual pit boundary shown as red line.

- The functioning license for a beneficiation concession by the DGM of MINEM
- License for the use of water
- Explosives permits granted by SUNAT
- Controlled substances permit granted by SUNAT.

The main permits that will be required to conduct mining exploration activities in the Project are summarized in Table 3-3.

3.10.2. Permitting Timelines

The key permits must be obtained to complete the next work phase are summarized in Table 3-4.

3.10.3. Permit Conditions

An Environmental Management Plan was developed as part of the 2021 EIAsd. Southern Copper committed to regular sampling and monitoring at selected points as part of the EIAsd.

The closure plan developed for the EIAsd that covers exploration activities is conceptual, and covers temporary, progressive and final closure. The most recent closure plan for the Michiquillay Project was included in the Modification of the Semi-detailed Environmental Impact Study approved in October 2021.

3.11. Social Considerations

As part of the EIAsd, the community outreach included radio spots where the proposed Project was discussed, virtual presentations, dissemination of information booklets on the Project, and development of internet sources for information on the Project.

Southern Copper has community initiatives in place in the Project area of influence. Key initiatives include the following programs:

- Improve access to drinking water in the Poblado Center of Polloc and the Michiquillay community
- Improve roads and neighborhood accesses to the El Rosario de Polloc Town Center in coordination with the Municipality of Encañada
- Identify positive and negative impacts of the Michiquillay Project on the communities of Michiquillay and La Encañada

Table 3-3: Permits Required to Mine

Permit	Authority	Approval
Semi-detailed Environmental Impact Assessment	Environmental Mining Affairs Bureau of the Ministry of Energy and Mines	*Resolución Directoral* N° 190-2021-MEM/DGAAM
Certificate of Non-Existence of Archaeological Remains (CIRA)	Ministry of Culture	
Water Use Authorization	Local Water Authority	—
Surface Rights	Holder of the required land	"*Acuerdo Social*" dated September 3, 2021
Mining Exploration Initiation Authorization	Mining Affairs Bureau of the Ministry of Energy and Mines	—

Table 3-4: Key Permits Required for the Next Work Phase

Permit	Authority	Timeline
Water Use Authorization	Local Water Authority	Approximately, one month since filing for the authorization
Mining Exploration Initiation Authorization	Mining Affairs Bureau of the Ministry of Energy and Mines	Automatic approval after five business days

- Participate in the AGROIDEAS Competitive Fund to provide access to training and markets
- Contribute to well-being of the elderly and people with disabilities
- Support artistic endeavors and customs within the communities of Michiquillay and La Encañada
- Provide information on agreements signed with agrarian communities in La Encañada
- Provide and disseminate information on social agreement commitments with the community of Michiquillay
- Improve livestock competitiveness through training ranchers in good livestock practices.

3.12. Violations and Fines

There are no current material violations or fines, as imposed in the mining regulatory context of the Mine Safety and Health Administration (MSHA) in the United States, that apply to the Michiquillay Project.

3.13. Significant Factors and Risks That May Affect Access, Title or Work Programs

Since Southern Copper was awarded the Michiquillay Project in 2018, community relations have been cordial.

As with any large mining project in Peru, the Michiquillay Project is subject to certain risks, including:

- Potential social conflicts based on negative community or regulatory perceptions. These could include unfulfilled expectations, new leadership with new ideas as to how agreements should be concluded, differing ideas of appropriate compensation, or changes in the community boundaries
- Agreements with communities are not respected by certain members of a community and further demands are made for social investment or other considerations not covered by the agreements
- Governmental changes to mining policies and mining regulations
- Non-governmental organizations that promote an anti-mining culture.

The Michiquillay deposit is bisected by the fish-bearing Michiquillay stream that drains south to the settlement of Michiquillay and the La Encañada River. Development of any open pit will require diversion of the stream, and mitigation measures for affected fish species.

Infrastructure locations will need to be carefully sited to avoid significant disturbance to the lagoons and wetlands (bofedales) in the vicinity of the planned open pit.

Four archaeological sites are within the boundary of the conceptual open pit. Southern Copper will be required to obtain a CIRA before starting activities that would disturb the sites. If it is absolutely necessary to locate infrastructure over an archaeological site, Southern Copper must obtain authorization from the Ministry of Culture to clear the area of archaeological remains before starting proposed activities.

To the extent known to the QP Firm, there are no other significant factors and risks that may affect access, title, or the right or ability to perform work on the Project that are not discussed in this Report.

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

4.1. Physiography

The Project is located near the Continental Divide of the Andes mountain range, at an average elevation of approximately 3,375 masl, with elevations ranging from 3200–3750 masl.

The Project is located in the Tropical Andes eco-region, which comprises grasslands, high Andean lakes, wetlands (bofedales) and rocky terrains. Vegetation within the Project area includes bofedales, tussock and bunchgrasses, and shrubby thickets.

The Project area is characterized by a dendritic drainage pattern.

Lower elevation areas of the Project are under cultivation by local farmers or are used for grazing.

4.2. Accessibility

The main access route to the Project is via road from Cajamarca. Initially, the paved Route 8B is used from Cajamarca to the town of La Encañada, a distance of approximately 33 km. A gravel road is then used from La Encañada to the Project site, approximately 14 km. The communities of Michiquillay and Encañada are 2 and 14 km from the Project respectively. Cajamarca is about 900 km from Lima.

Access within the Project is via various gravel and two-track roads that link areas where drilling is planned.

The closest airport is at Cajamarca, which is serviced by regular flights from Lima.

4.3. Climate

The local climate is typical of high altitude, equatorial regions: relatively cool, averaging 14.2ºC, windy, and with distinct rainy and dry seasons. Rainfall averages about 620 mm, with most rain occurring from December to March. The driest months are May–August.

Mining operations in the district operate year-round, and it is expected that any future mining operation at Michiquillay will be year-round. Exploration activities are conducted year-round, but may be temporarily curtailed by heavy rains.

4.4. Infrastructure

The site is currently a greenfields site with limited infrastructure that is only suitable to support exploration-level activities.

4.4.1. Water

Water supplies to support exploration activities are purchased from local landowners.

4.4.2. Electricity

Power supplies for exploration are provided by generator sets. The rural community of Michiquillay, 2 km from the Project site, is serviced by a rural 220 V electrical system, sourced from La Encañada/Cajamarca.

4.4.3. Supplies

Cajamarca is the main source of supplies, and fuel. Fuel is currently trucked to the site as needed for exploration activities.

4.4.4. Personnel

A skilled and semi-skilled mining workforce has been established in the region as a result of on-going mining activities. The Project currently sources unskilled labor from the towns of Michiquillay and La Encañada. There are adequate schools, medical services and businesses to support the exploration work force.

5. HISTORY

Anglo American conducted the majority of the recent exploration programs discussed in this Report, prior to Southern Copper's Project interest. For Report purposes, "Anglo American" refers to Anglo American LLC, Anglo American Exploration, Anglo American Exploration Perú S.A., Anglo American Chile, Anglo American Michiquillay, and Minera AngloAmerican Peru.

Table 5-1 summarizes the Project ownership and exploration history.

Table 5-1: Exploration and Development History

Year	Operator	Comment
1957	Mr. Reynaldo De la Puente and others	Staked claims in Michiquillay area
1957–1958	Northern Peru Mining Company	Discovered Michiquillay deposit
1959	American Smelting and Refining Company, later Asarco LLC (Asarco)	Acquired concessions covering the deposit area
1960–1965	Asarco	Completed 136 core holes (45,795.86 m.) Excavated 900 m of underground tunnels at an elevation of 3,500 masl
1970	Peruvian State	Concessions reverted to the State in October, 1970, and nationalized.
1970	Minero Peru S.A., (Minero Peru)	Concessions assigned to Minero Peru S.A., (Minero Peru) a State-owned mining company.
		Minero Peru joined with a number of Japanese companies to create the Michiquillay Copper Corporation
1972–1975	Minero Perú; Michiquillay Copper Corporation	Drilled 17 core holes and drove approximately 1,100 m of tunnels at the 3,500 level
2007	Peruvian State	Privatization of Minero Peru
2007	Anglo American plc (Anglo American)	Awarded title over the Project area
2009	Anglo American Exploration	Geophysical programs including magneto telluric, dipole induced polarization and transient electromagnetic surveys. Ground magnetic data acquired and processed. 1,861 soil samples and 1,036 rock samples were collected 1:5,000 scale geological map completed. Preliminary geological model constructed by R. Sillitoe. Drilled 30 core holes (16,121.85 m)
2009–2014	Anglo American Exploration	Completed 3 core holes in 2011 (2,578 m). Completed 68 core holes in 2012 (44,320.20 m.) Anglo American completed a conceptual mineral resource model with 53 holes (36,413.10 m) included in the model.
2014	Anglo American plc (Anglo American)	Withdrew from Project in mid-2014, and returned the properties to the State.
2018	Southern Copper	Acquired the Michiquillay Project from the State on 12 June 2018

Year	Operator	Comment
2019–2021		Completed due diligence sampling of coarse rejects. Undertook environmental monitoring and completed additional baseline studies. Completed a semi-detailed environmental study.

6. GEOLOGICAL SETTING, MINERALIZATION, AND DEPOSIT

6.1. Deposit Type

The Michiquillay deposit is considered to be an example of a porphyry copper–molybdenum–gold deposit.

Porphyry deposits range in age from Archean to Recent, although most are Jurassic or younger, and form in in a variety of tectonic settings. Most copper–molybdenum deposits are associated with low-silica, relatively primitive dioritic to granodioritic plutons that fall on the more oxidized, magnetite-series spectrum.

Deposits commonly form irregular, oval, solid or "hollow" cylindrical and inverted cup shapes (Figure 6-1). Orebodies can occur separately, overlap each other, or be stacked on top of each other. They are characteristically zoned, with barren cores and crudely concentric metal zones that are surrounded by barren pyritic halos with/without peripheral veins, skarns, replacement manto zones and epithermal precious-metal deposits. At the scale of ore deposits, associated structures can result in a variety of mineralization styles, including veins, vein sets, stockworks, fractures, 'crackled zones' and breccia pipes.

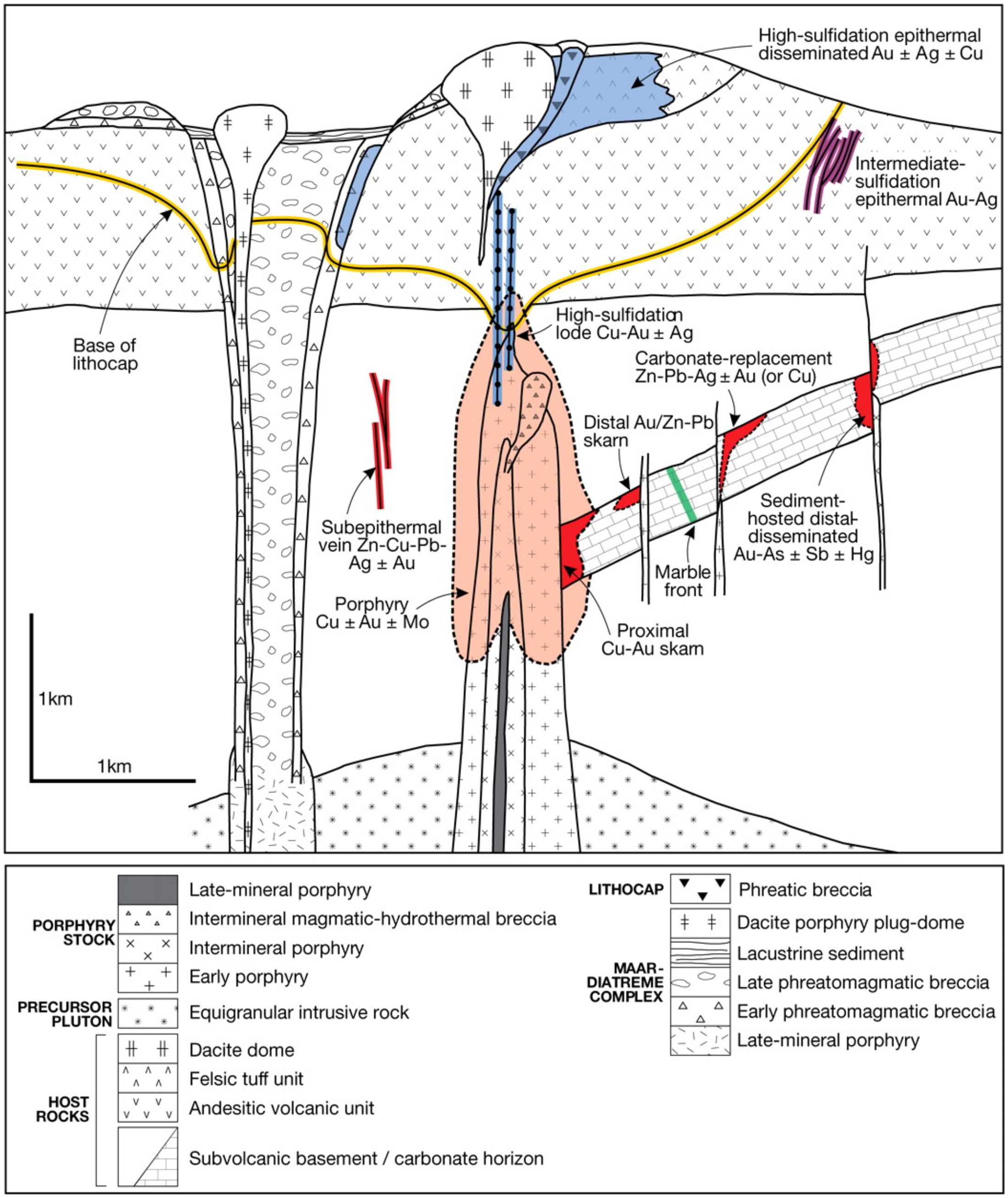
Pyrite is typically the dominant sulfide mineral, in association with chalcopyrite, bornite, chalcocite, tennantite, enargite, other copper sulfides and sulfosalts, molybdenite and electrum.

6.2. Regional Geology

The Project is located in the western cordillera of the Andes, within a northwest–southeast-oriented metallogenetic corridor that hosts several porphyry copper deposits in the Cajamarca region. Those deposits are characterized by calc-alkaline magmatic rocks covered by folded and faulted sedimentary formations. The Andes range is the result of tectonic shortening and magmatic activity due to the almost uninterrupted subduction since the Jurassic (Anglo American, 1986).

Cretaceous sedimentary rocks were deformed by the Inca (I-IV) and Quechua (I-II) compression events. Deformation is marked in the region by west–northwest–east–northeast oriented folding, and northeast to southwest-trending fault complexes. The faults control the locations of a suite of Tertiary stocks, trending northwest–southeast, which run from Hualgayoc to Michiquillay. These intrusive stocks range in age from 46–14 Ma. Mineralization at Michiquillay was dated at 18.68–21.85 Ma (Anglo American, 2013d).

Figure 6-1: Porphyry Deposit Model



Note: Figure from Sillitoe, 2010.

An overview of the regional geology is provided in Figure 6-2.

6.3. Local Geology

6.3.1. Lithologies and Stratigraphy

The major sedimentary and intrusive rock types in the general Michiquillay Project area are summarized in stratigraphic order in Table 6-1 and Table 6-2, respectively. A local geology map showing the major structures is provided in Figure 6-3.

6.3.2. Structure

Two main fault systems are recognized in the area:

- Basement faults, striking northwest, with a sub-vertical orientation
- Overburden faults, striking northeast or east–west, dipping at 25–60° to the south or southeast.

The porphyry mineralization and the porphyritic intrusion at Michiquillay appear to be related to, and controlled by, a regional-scale strike change on a series of pre-mineral west–northwest to northwest striking brittle–ductile fault zones.

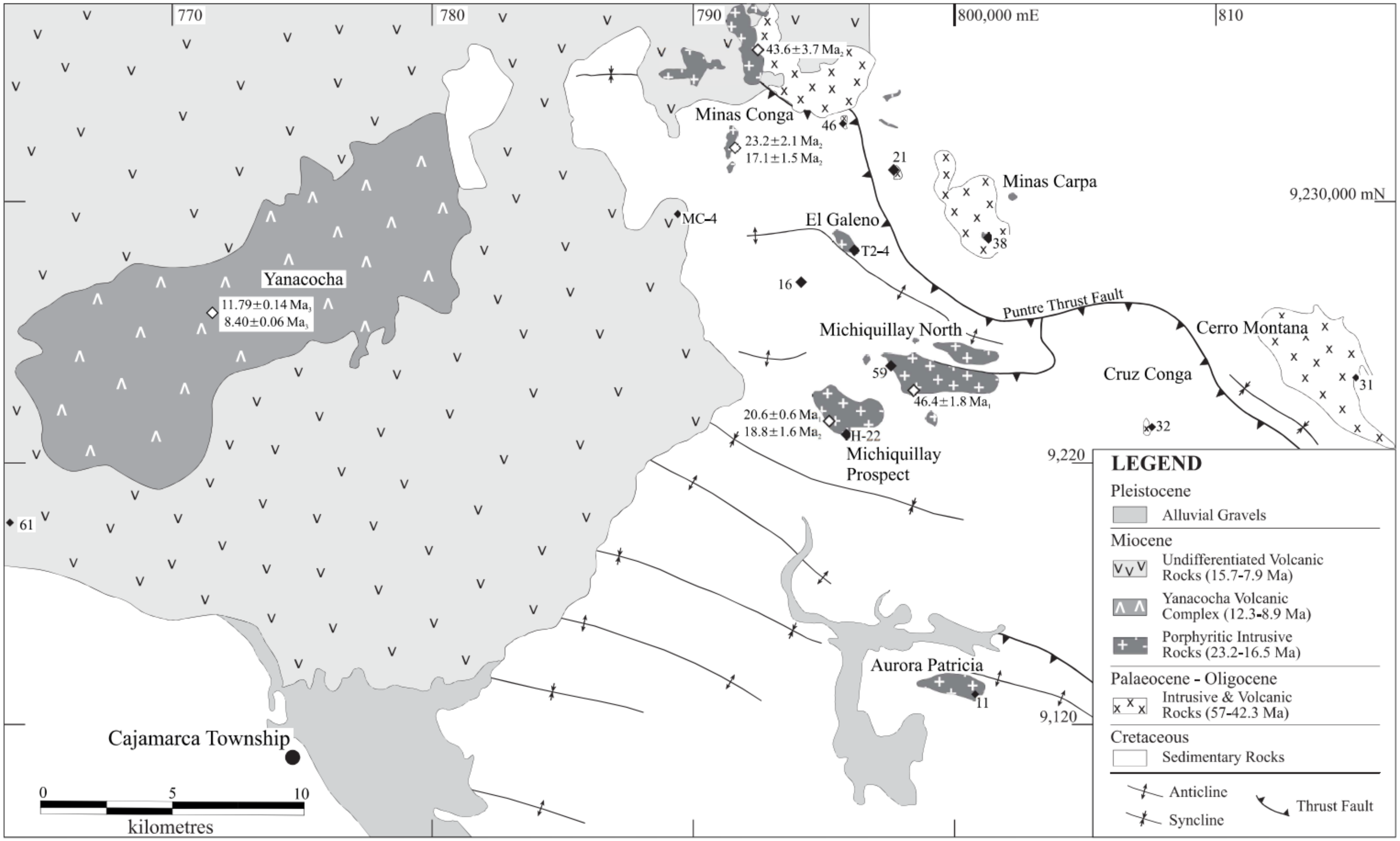
The porphyry intrusions appear to be controlled by intense, concentrated extension on releasing bends, splays, overlaps in dextral fault segments and on the margins of brittle fault zones with development of multiple extensional phases in stockworks, synthetic/antithetic extensional faults and extensional duplexes.

The Michiquillay Fault is interpreted to be a primary controlling feature with a long history and may limit mineralization to the south.

6.3.3. Alteration

Alteration is restricted to the vicinity of the porphyry intrusions. Quartz porphyry generally exhibits potassic alteration characterized by the abundance of secondary biotite and magnetite, with sericitic and chlorite-sericite alteration zones, while feldspar porphyry is dominated by sericite and clay minerals, the potassic alteration is confined to a number of patches remaining in the early intrusion.

Figure 6-2: Regional Geology Map with Ages of Nearby Mineral Deposits



Note: Figure prepared by Davies (2002). White background on figure is undifferentiated Cretaceous sedimentary rocks.

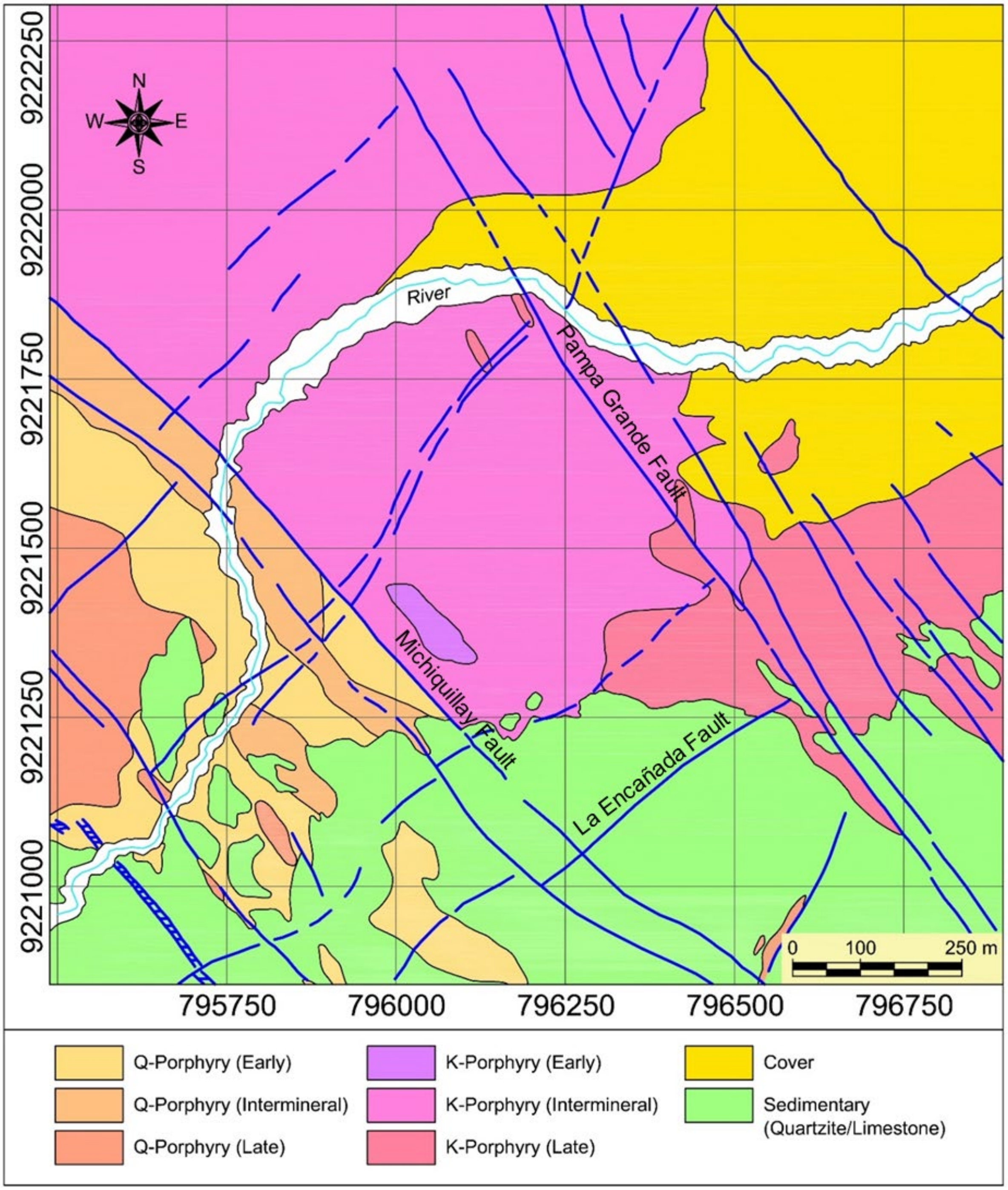
Table 6-1: Major Sedimentary Units

Epoch	Group	Formation	Description	Thickness (m)
Recent			Glacial deposits, moraine, gravel	—
Lowe Tertiary	Calipuy	Porculla	White tufts, reddish sandstones, agglomerates, pyroclasts	2,000
		Llama		
Upper Cretaceous	Formación Cajamarca		Limestone interspersed with shales and marl	700
	Grupo Quilquiñan y Mujarrum		Limestone, shale and bituminous marl	500
	Yumagual		Fossiliferous brownish gray limestones marl	700
Lower Cretaceous	Pariatambo		Gray shales, bituminous limestones	150–200
	Chulec		Sandy limestones, calcareous shales and marl	200–250
	Inca		Calcareous sandstones and ferruginous limonites	150
	Goyllarisquizga	Farrat	Quartzites and white sandstones	500
		Carhuaz	Sandstones and quartzites interspersed with shales	500
		Santa	Gray shales and loamy limestones	150–100
		Chimú	Sandstones, quartzites, shales and carbon levels	80–600

Table 6-2: Intrusive Types

Code	Name	Description
PQ1	Q-porphyry (early)	Early quartz porphyry: dacitic, 30% plagioclase, 6% quartz, and 5% biotite phenocrysts in a very fine-grained matrix of plagioclase and quartz;
PQ2	Q-porphyry (intermineral)	Intermineral quartz porphyry: dacitic, 28% plagioclase, 8% quartz, and 6% biotite phenocrysts in very fine-grained matrix of plagioclase and quartz.
PQ3	Q-porphyry (late)	Late quartz porphyry: dacitic, 50% plagioclase, 2% quartz, 2% K-feldspar phenocrysts in a very fine-grained matrix of plagioclase, quartz, biotite, and alteration minerals
PF1	K-porphyry (early)	Early feldspathic porphyry: 28% plagioclase, 5% quartz, 3% biotite, in a fine matrix of plagioclase, quartz, K-feldspar, and biotite with some opaque minerals.
PF2	K-porphyry (intermineral)	Intermineral feldspathic porphyry: dacitic; 5% plagioclase, 7% quartz phenocrysts in a fine matrix of plagioclase, quartz, and alteration minerals
PF3	K-porphyry (late)	Late feldspathic porphyry: dacitic; 40% plagioclase, 7% quartz, and 3% K-feldspar phenocrysts in a fine matrix of plagioclase, quartz, and secondary minerals including carbonate and biotite.

Figure 6-3: Deposit Geology Map Showing Structures



Note: Figure prepared by Wood, 2021.

6.3.4. Mineralization

Michiquillay is a large porphyry copper deposit with associated anomalous gold, molybdenum and silver values. The deposit consists of two early Miocene dacitic magmatic centers that intruded into Cretaceous sedimentary strata.

6.4. Property Geology

6.4.1. Deposit Dimensions

The Michiquillay deposit is approximately 5 km long, 1.5 km wide, and averages about 1.2 km thick. Mineralization has been drill tested to a depth of 1,230 m. The deposit remains open at depth.

6.4.2. Lithologies

The Michiquillay deposit was formed from two juxtaposed Lower Miocene dacitic porphyry intrusions, one in the southwest that is copper–gold rich and the other in the northeast that is copper–molybdenum–gold rich.

The intrusions are subdivided into a number of intrusive stages: early, inter-mineral and late-mineral, which are readily distinguished by the intensity of quartz veining, degree of texture destruction, presence of xenoliths of older porphyry phases, and copper–gold or copper–molybdenum tenor.

The Michiquillay Central and Michiquillay West zones comprise the main area of mineralized porphyry and are underlain by feldspar porphyry with less common quartz porphyry. Rafts and pendants of silicified sandstone occur in the central and southern portions of the porphyry. The Michiquillay South zone comprises the southern contact between the intrusive porphyries and the sedimentary country rock and is characterized by sheeted contact relations, reactivated west–northwest striking thrust faults and the Michiquillay Fault which bounds the porphyry. The contact between the porphyry and the silicified sandstone host is well exposed in many localities in the south of the area and is most commonly seen as a passive contact, sheeted along bedding and jointing and with chilling of the porphyry margins and hornfels locally developed in the sedimentary host. The contact has the form of pendants, rafts and xenoliths of the sandstone in the porphyry, and the lack of tectonism of the contacts indicates a stoping mechanism of intrusion along this southern margin.

The deposit geology is shown in Figure 6-3. A cross-section, showing the deposit geology, is included as Figure 6-4.

6.4.3. Structure

The structural style varies systematically throughout the region, with the main Michiquillay porphyry body being characterized by steeply dipping extensional faults (refer to Figure 6-3).

In the south, the deposit is characterized by a system of reactivated thrust and reverse faults and by the mineralization-bounding Michiquillay fault. To the north, the deposit is characterized by strike slip and reverse faults cutting silicified sandstone that hosts local porphyritic intrusive bodies.

The Michiquillay central zone is characterized by three west–northwest- to northwest-striking dextral–transtensional fault zones that dip steeply to the northeast. In the Michiquillay West area, these major faults swing to the north–northwest, and southwest dipping, second-order, antithetic faults are developed in the hanging-walls. The Michiquillay South zone is dominated by the Michiquillay fault, which bounds the intrusive porphyry in that area. Thrust faults are well developed in the Michiquillay South zone, striking west–northwest to east–west and dipping to the south. The thrusts appear to be confined to the sedimentary package indicating a pre-porphyry/pre-mineral age to the thrusting, possibly Late Cretaceous.

The major faults recognized in the deposit area are summarized in Table 6-3 and are shown in Figure 6-3.

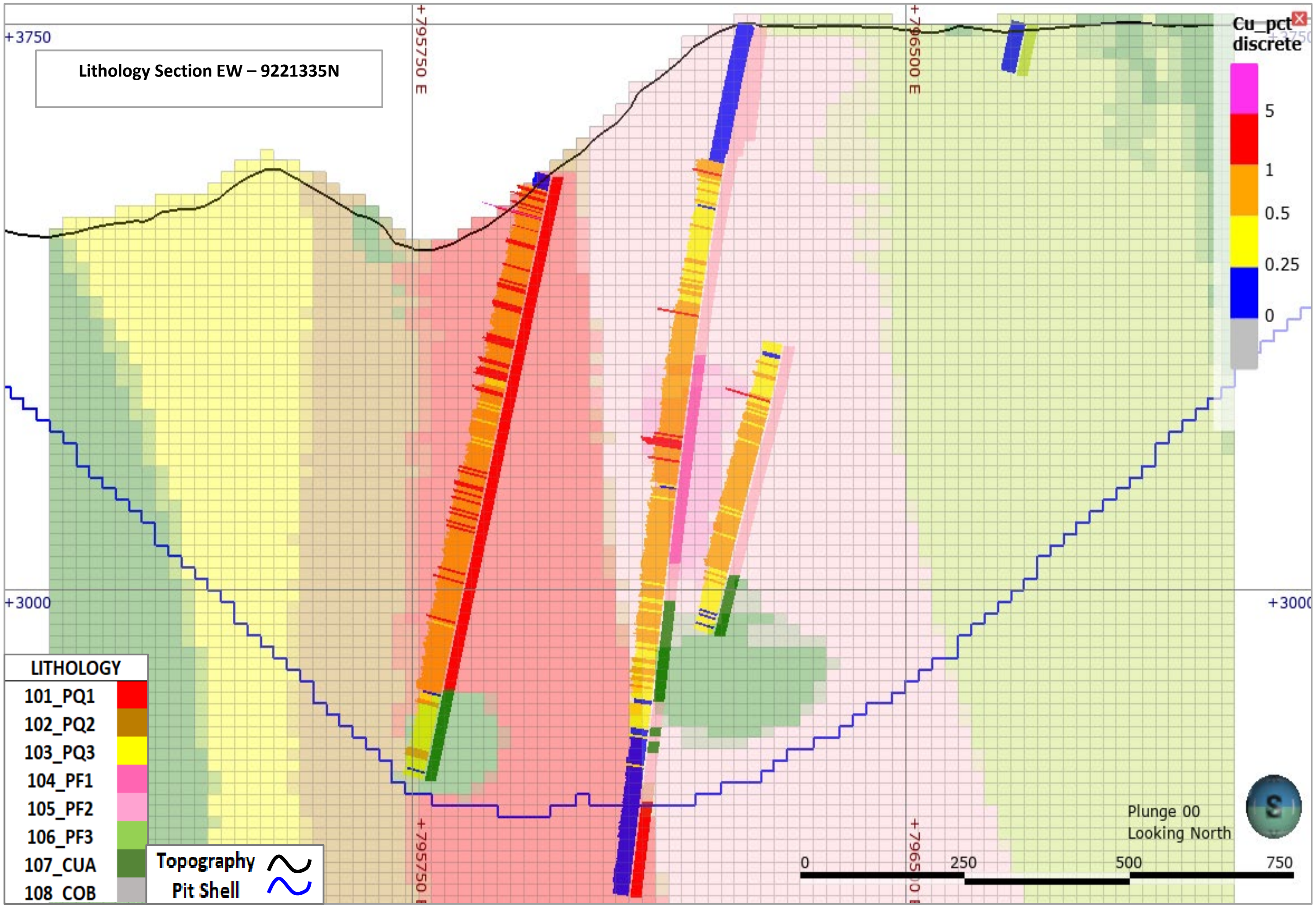
6.4.4. Alteration

Alteration types recognized to date are summarized in Table 6-4. A cross-section showing the alteration styles is included in Figure 6-5. Alteration zonation is different in the two intrusions.

The early quartz porphyry is dominated by potassic alteration. Above this style are two very thin layers, one is sericitic alteration and the other is chlorite–sericite alteration.

The inter-mineral quartz porphyry and the late quartz porphyry exhibit sericite alteration in the most superficial part. Chlorite–sericite alteration is gradational with potassic alteration and finally at greater depth, potassic alteration with clay mineral overprint occurs, the latter being the most extensive. Sericitic alteration was identified in the northern part of the deposit.

Figure 6-4: Michiquillay Geological Cross-Section



Note: Figure prepared by Wood, 2021.

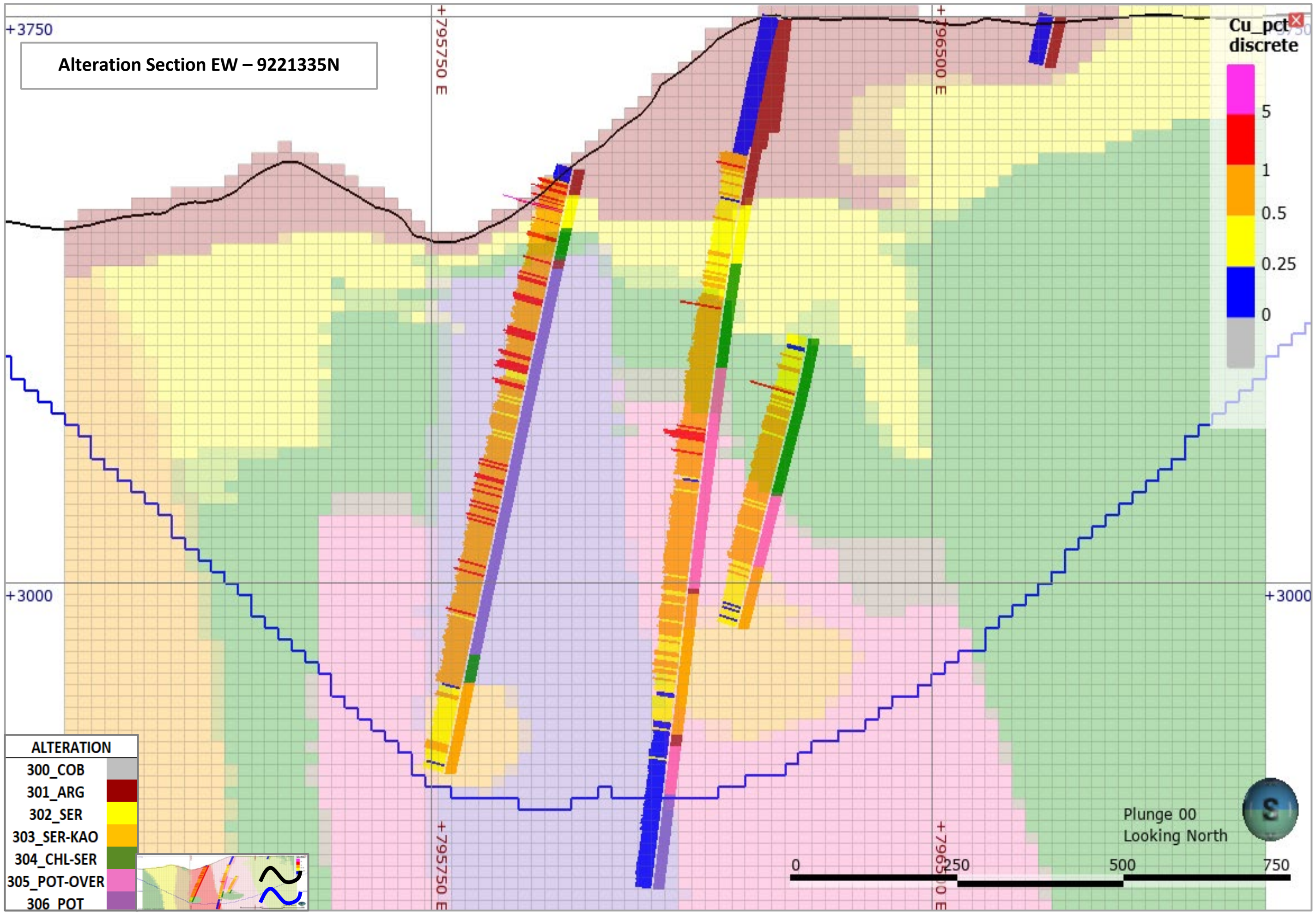
Table 6-3: Major Faults

Fault Name/Type	Comment
Michiquillay Fault	Broad zone of brittle–ductile deformation, striking west–northwest, and locally northwest, and appears to separate the mineralized porphyry and associated hydrothermal system to the north from the non-mineralized sedimentary rock package to the south. Where it is exposed, it appears mainly within the sedimentary package but porphyritic dikes or lenses were noted within the fault zone. The fault dips steeply to the north–northeast at approximately 70°, and is about 50 m wide locally. At least 500 m of down-dip displacement is suggested.
Antenna Fault system	Pair of regional-scale, 4–5 km long, northwest to north–northwest striking brittle faults with a system of north–northeast- and northeast-striking second-order transfer faults linking the southwest and northeast bounding faults. Developed in massive silicified sandstone with minor porphyritic intrusions on the northeast margin. Stratigraphy is right way up
Encañada Fault	Poorly exposed northeast-striking brittle fault zone, extending from the Michiquillay Porphyry in the southwest to the Antenna Fault system in the northeast. Underlies the river valley but exposure is poor due to extensive recent glacial and fluvial fill in the valley. The Encañada fault appears to offset the Antenna fault system dextrally by approximately 300 m.
Bounding faults	Dip steeply to the northeast or are vertical, striking northwest–southeast, have a separation of 350 m and are regionally extensive (may be up to tens of km long if lineaments are included in the fault zone). Form distinct scarps in the sandstone in the vicinity of the radio antenna and polished surfaces on the fault indicate at least two phases of dextral strike-slip on the fault which are both pre and syn-silicification and hematite mineralization. Thick fault breccias are present in the hanging or northeast wall of the southern fault.
Cross-faults	Sinistral strike-slip faults that act as transfer structures linking the southwest and north east bounding faults; strike north–northeast to northeast. Generally, 350–400 m long with a spacing of 80–160 m and form zones of intense fracturing as wide as 10 m. Dip vertically to 85º to the southeast

Table 6-4: Alteration Types

Code	Type	Mineral Assemblage
ARG	Argillic	Clay minerals (kaolinite, smectite) ≥80% + sericite (illite, muscovite) and others ≤20%. This is largely supergene in origin and is as much as 200 m thick, thinning toward the periphery of the deposit.
SER	Sericite	Sericite (illite, muscovite)) ≥80% +clays (kaolinite, smectite) and others≤20%. This alteration is the most far-reaching and penetrative, the same one that is superimposed in a large part of the system. This alteration grades upward to the periphery of supergene argillic alteration, and inwards to the sericite chlorite alteration.
SER–KAO	Sericite-Kaolinite	Clay minerals (kaolinite, smectite) + sericite (illite, muscovite) ≥80% and others≤20% including pyrophyllite and alunite.
CHL–SER	Chlorite with overprint	Chlorite + clay minerals (kaolinite, smectite) + sericite (illite, muscovite) ≥80% and others≤20%
POT Over Print	Potassic with overprint	Potassic (secondary biotite, chlorite, magnetite, K-feldspar) + clay minerals (kaolinite, smectite) + sericite (illite, muscovite) ≥80% and others≤20%
POT	Potassic	Potassic (secondary biotite, magnetite, K-feldspar, chlorite) ≥80% and others≤20%. Potassium alteration is mainly limited to early quartz porphyry intrusion.

Figure 6-5: Cross-Section Showing Alteration



Note: Figure prepared by Wood, 2021.

Sedimentary rock blocks included in the intermineral feldspathic porphyry are sericite–kaolinite altered, whereas sedimentary rock blocks included in the late feldspathic porphyry only display sericite alteration.

6.4.5. Mineralization

Mineralization is related to two porphyry stages as follows:

- Feldspathic porphyry (PF): in general, the PF intrusive bodies are lower grade than the quartz porphyry intrusions
- Quartz porphyry (PQ): displays abundant magnetite, moderate to strong disseminated chalcopyrite and veinlets. Generally higher grade than the feldspathic porphyry.

Mineralization is zoned vertically due to oxidation and remobilization of copper by supergene processes.

Table 6-5 summarizes the four main mineralization types. Table 6-6 summarizes the mineralized zones used for modeling and the identification criteria used. Vein descriptions are included in Table 6-7. A cross-section through the deposit showing the mineralization is provided as Figure 6-6.

The highest concentration of chalcopyrite is found in the early PF1 and PQ1 porphyries, where it occurs as disseminations, micro-veins and in type A> type B veinlets (chalcopyrite>pyrite). The intensity of chalcopyrite in the early quartz porphyry is higher compared to the chalcopyrite content of the early feldspathic porphyry.

The inter-mineral PF2 and PQ intrusions contain disseminated and vein chalcopyrite. Pyrite and chalcopyrite distributions differ. The PF2 intrusion shows chalcopyrite dominant over pyrite in the south–central deposit area, but in the north–central area, pyrite is dominant over chalcopyrite.

The late PF3 and PQ3 porphyries tend to be pyrite dominant over chalcopyrite.

Sedimentary rocks surrounding and included in the intrusive units such as quartz sandstones, quartzites and hornfels, host disseminated pyrite and pyritic “DL” type veins. Chalcopyrite is also disseminated and occasionally occurs in fractures in contact zones with early porphyries.

Table 6-5: General Mineralization Characteristics

Mineral Zone	Code	Description
Sterile	EST	Area where copper minerals or remnants of copper minerals are not recognized; largely moraine and colluvial deposits as thick as 100 m
Leached	LIX	Occurrence of limonitic iron oxides (jarosite, goethite, hematite); copper occurs as oxide copper above the zone of secondary enrichment; variable thickness to 200 m
Secondary Enrichment	ES	Zone characterized by the presence of chalcocite and covellite; averages <50 m thick but as much as 103 m thick locally; best developed in the central part of the deposit
Primary	P	Primary mineralization beneath the zone of secondary enrichment. Characteristic minerals include chalcopyrite, pyrite, molybdenite, magnetite, rutile, bornite, sphalerite, galena, etc.; disseminated mineralization is more common than stockwork mineralization; two subdivisions: pyrite-rich and chalcopyrite-rich; chalcopyrite-rich forms the core of the deposit and is surrounded by pyrite-rich primary mineralization

Table 6-6: Parameters Used to Differentiate Mineral Zones for Geological Model

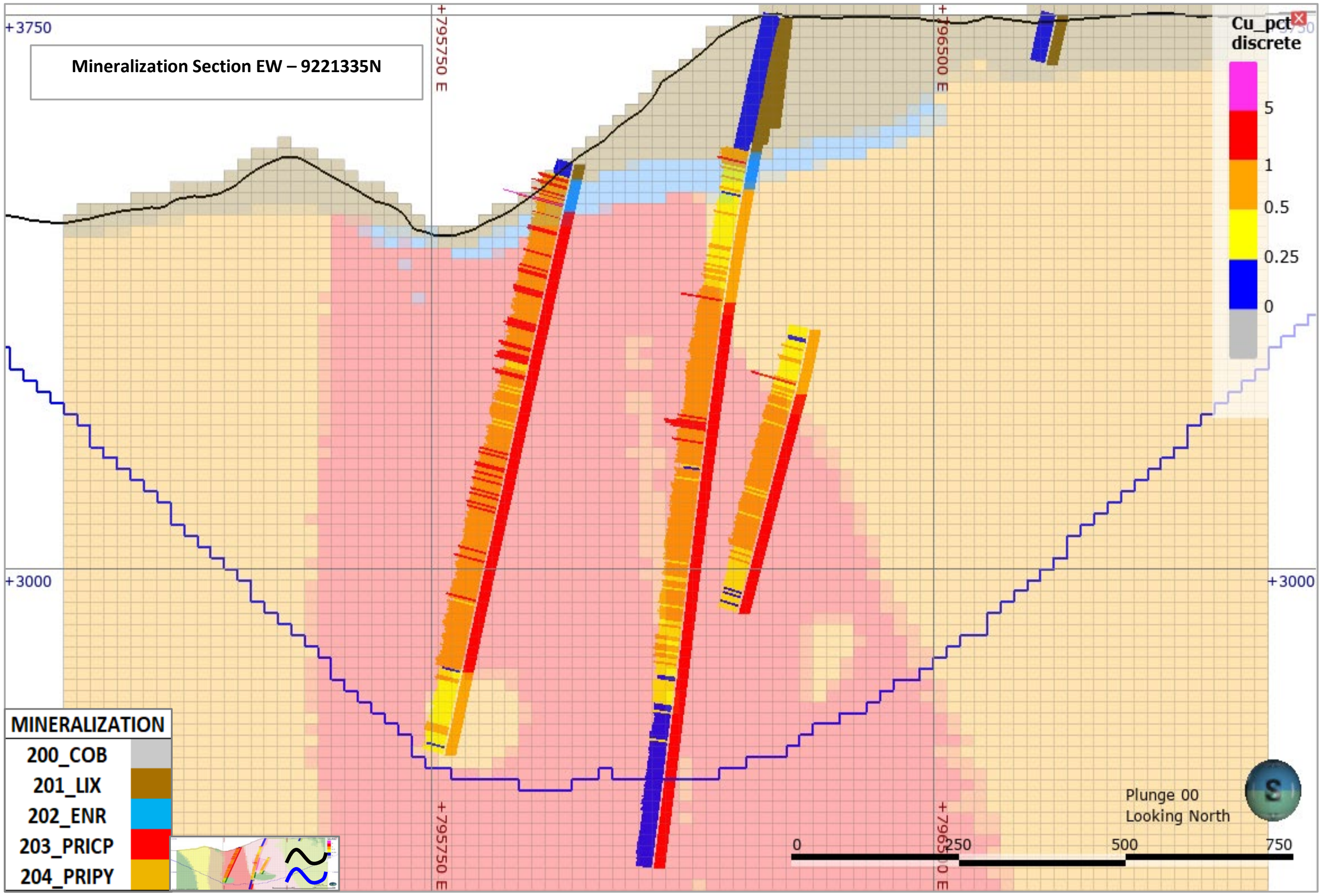
Minzone	Description	Criteria	Relation	Chemical Criteria
LIX	Leached; sulfides absent, limonite present	LIM>90%	LIM+SULCU	
LIXP	Partially leached: limonite + Cu sulfides	SULCU>10%	LIM+SULCU	
OXI	Cu oxides	OXCU>70%	OXCU+SULCU	CUS>50%; CUT<0.2%
MIX	Mixed–sulfide and oxide Cu	OXCU >20%, <70%	OXCU+SULCU	CUS>0.2%, <70%; CUT>0.2%
ENM	Strong enrichment (chalcocite +covellite)	CC+CV>50%	CC+CV+CPY	CUCN>70%; CUT>0.2%
END	Weak enrichment (chalcocite, covellite, some chalcopyrite)	CC+CV>20%, <50%	CC+CV+CPY	CUCN>30%, <70%; CUT>0.2%
ENH	Enriched hypogene (chalcocite, digenite, bornite)	CC+DIG+BO>20%	CC+DIG+BO+CPY	CUCN>30%; CUT>0.2%
PRIPY	Primary pyrite with minor chalcopyrite	PY>75% (CPY/PY+CPY)<0.25	PY+CPY	
PRICP	Primary with strong chalcopyrite, lesser pyrite	CPY>25% (CPY/PY+CPY)>0.25%	PY+CPY	

Notes: LIM = Limonite; SULCU = sulfide copper; OXCU = oxide copper; CC = chalcocite; CV = covellite; CPY = chalcopyrite; PY = pyrite; CUS = acid soluble copper; CUT = total copper; CUCN = cyanide soluble copper

Table 6-7: Vein Types

Vein ID	Type
A	Early, formed at high temperature in a ductile environment; quartz + chalcopyrite or K-feldspar; overprinted with chlorite rosettes, sericite; have potassic alteration halo
B	Early, transitional veins, lower temperature; straight with suture in middle; cut by D and DL veins; quartz ± molybdenite
D	Intermediate stage veins with sericite halo; quartz, continuous sulfides in sutures (mainly pyrite); locally hosts tennantite, sphalerite, galena
DL	Late stage D veins that cut all earlier veins; largely pyrite and quartz, and can have some tennantite, sphalerite, galena
M	Magnetite veins without quartz formed early in the intrusive event
EB	Biotite veins without quartz formed during the inter-mineral intrusive event.

Figure 6-6: Example Mineralization Cross Section



Note: Figure prepared by Wood, 2021.

Molybdenite, on average, is slightly higher grade in the feldspathic porphyry than in the quartz porphyries. It is preferentially found in the early PQ1 and PF1 and inter-mineral PQ2 and PF2 porphyries, where it is associated with type "B" veins.

The sedimentary rocks have the lowest molybdenite concentrations in the deposit.

7. EXPLORATION

7.1. Exploration

7.1.1. Grids and Surveys

The topographic survey used to estimate mineral resources was completed on behalf of Anglo American in 2009 in the UTM coordinate of the WGS84 system. Anglo American used a Trimble dual frequency global positioning system (GPS) unit when conducting this survey. A base point located at the Mayor General FAP Armando Revoredo Iglesias in Cajamarca was the starting point for the survey.

7.1.2. Geological Mapping

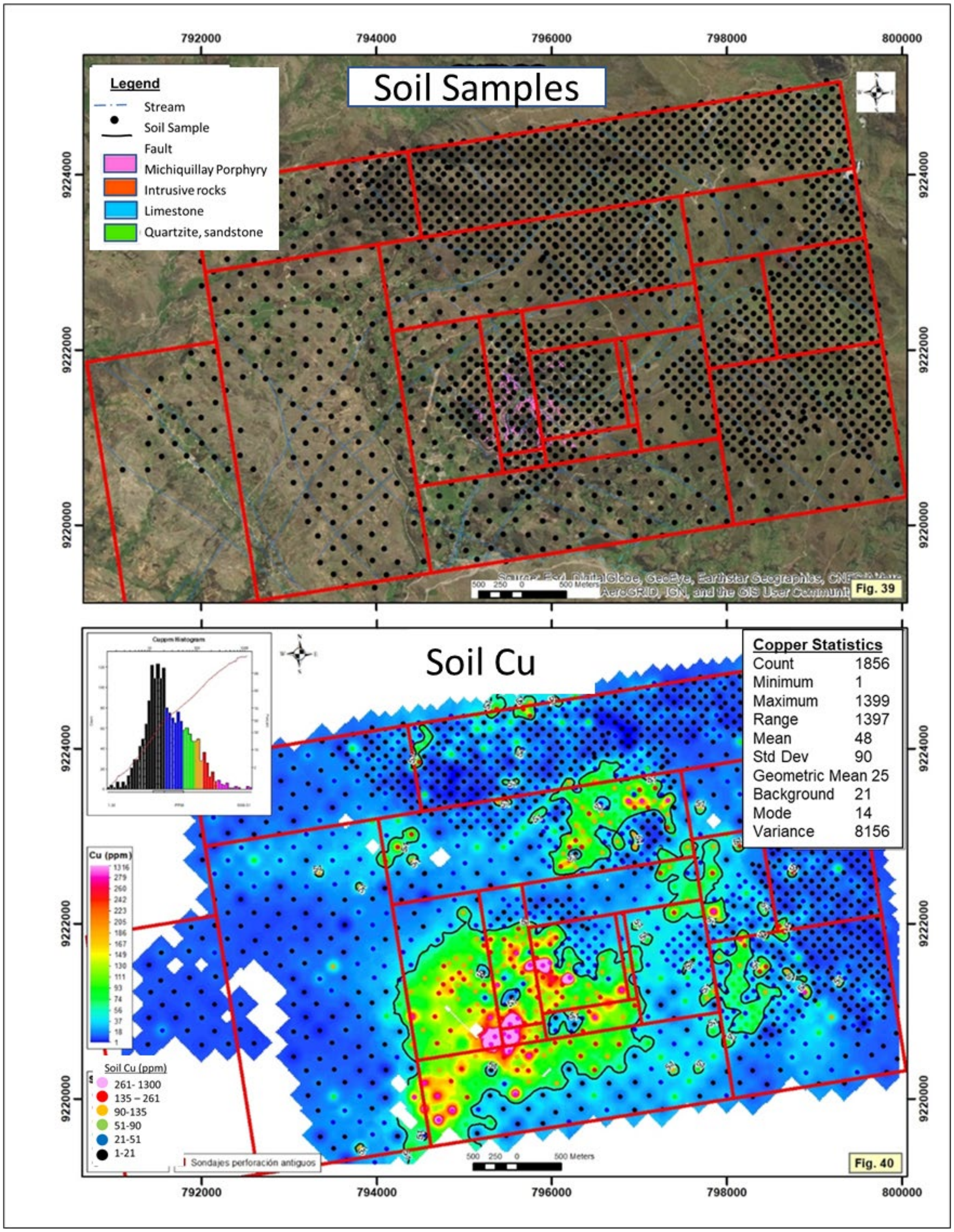
In 1975, Minero Perú mapped the underground workings at a scale of 1:1,000. The mapping program concentrated on collection of information on lithology, structure, alteration, and oxidation state. Geological mapping was used to identify and understand geological variables such as lithology, mineralization and alteration that control mineralization and that were used in the geological model to constrain mineral resource estimation.

Anglo American mapped the area in 2009 at a scale of 1:5,000 largely to support construction of the geological model used for mineral resource estimation.

7.1.3. Geochemistry

In 2009, a soil and rock sampling program was completed by Anglo American in an area of 4 x 5 km mainly to the north and northeast of the deposit (Figure 7-1). In all, 1,855 soil samples and 1,018 rock samples were collected.

Figure 7-1: Soil Sample Locations with Contoured Cu Data



Note: Figure prepared by Southern Copper 2021. Red outlines are concession boundaries.

7.1.4. Geophysics

During 2008–2009, Jose Arce Geofisicos S.R.L. in conjunction with Zonge Ingenieria y Geofisica (Chile) S.A (Zonge) completed the following ground geophysical surveys on behalf of Anglo American:

- 100 m magneto-telluric surveys, collected on 17 survey lines with a total of 60.7 line-km
- 250 m pole-dipole and dipole-dipole induced polarization, eight survey lines with a total of 24.5 line-km, with an additional 2.0 line-km of dipole-dipole induced polarization/resistivity data acquired on a single survey line
- Transient electromagnetic, 100 m or 200 m coincident loop geometry acquired at six sounding locations on two survey lines.

Jose Arce Geofísicos S.R.L. acquired and processed ground magnetic data during this period. The area of the geophysics surveys for the Michiquillay project is limited between the following coordinates: N9220200, E794400 and N9224600, E799800 which is shown in Figure 7-2.

7.1.5. Tunnels

Asarco and Minero Peru excavated an adit, termed "Tunel 3,500" for a distance of more than 1,900 m (Figure 7-3). The tunnel was geologically mapped and sampled. Copper, molybdenum, gold, silver, silica, iron, and sulfur were analyzed and portrayed on maps of the tunnel. Available information suggests that samples from Tunel 3,500 were used for metallurgical testwork.

A total of 16 core holes (1,894 m) were drilled from underground stations. These data are available on maps, but were not used for the most recent mineral resource estimate.

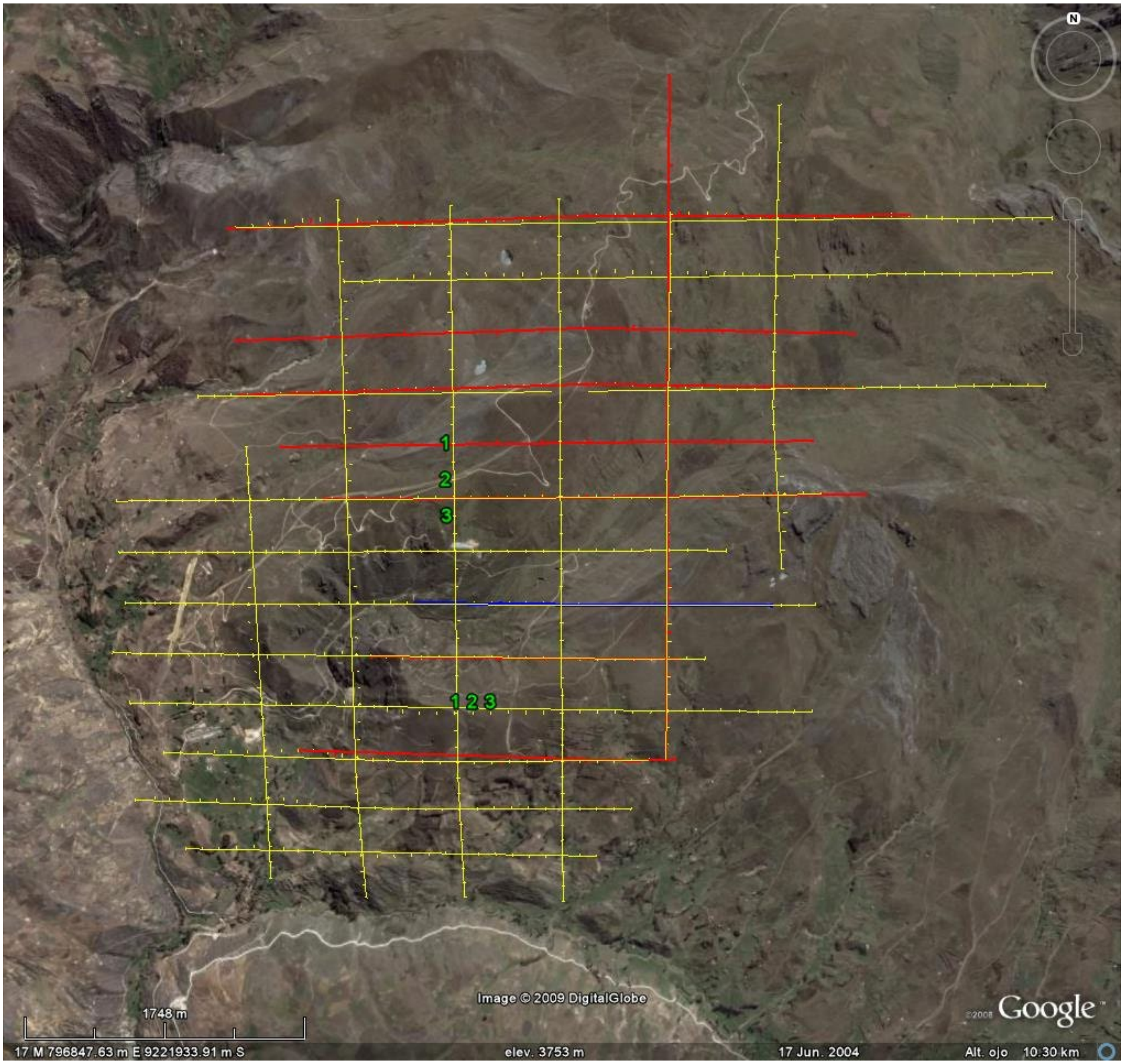
7.1.6. Qualified Person's Interpretation of the Exploration Information

The exploration primarily conducted by Anglo American provided vectors to geochemical surface anomalies that were drill tested. This work identified the Michiquillay deposit.

7.1.7. Exploration Potential

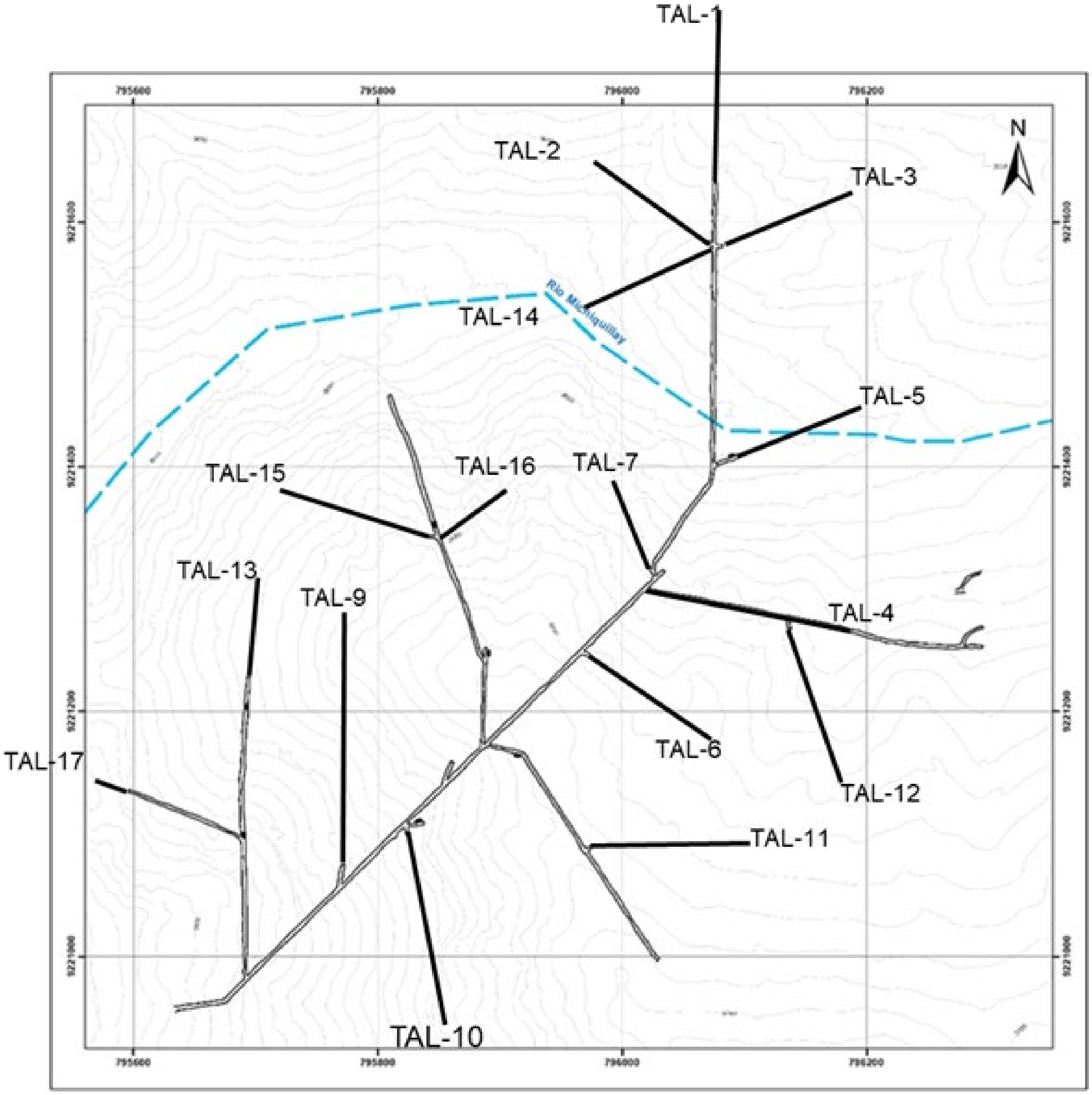
The Michiquillay deposit remains open at depth.

Figure 7-2: Location Map of the Michiquillay Project with Geophysical Survey Lines



Note: Figure prepared by Arce Geofísicos, 2009. Red lines are IP lines, yellow lines are magneto-telluric survey lines.

Figure 7-3: Tunel 3500 Map



Note: Figure prepared by Southern Copper, 2021. Southern Copper has presumed that drill hole TAL-8 is located outside the area shown in the figure.

7.2. Drilling

7.2.1. Overview

Southern Copper has not performed any drilling on the Project.

Drilling completed by previous operators totals 274 drill holes (119,657 m) and is summarized in Table 7-1. Drill collar locations are provided in Figure 7-4.

Drilling was performed 1960–1965 by Asarco and in 1972–1975 by Minero Perú. Both companies worked on Tunel 3500, and historical data indicate 16 underground core holes (1,894 m) were drilled from underground galleries in Tunel 3500. Collar locations for the underground drill holes are uncertain.

A total of 53 core holes (71,968 m) from the 2009–2012 Anglo American drill campaign supports mineral resource estimation (Table 7-2). This total is about half of the available drill data from the Anglo American campaigns.

Drill collar locations used for mineral resource estimation are shown in Figure 7-5.

No explanation was available to Wood as to why certain drill holes were excluded from the estimate. Some drill holes may have been excluded as they were completed after the June 2012 database closeout date; however, other drill holes completed prior to that date are also excluded from estimation support. Any future mineral resource update should include a reassessment of all drilling and suitability of data to support estimation. It is likely that such an update will be based on more drill holes than the current estimate.

Drill data from the Asarco and Minero Perú programs are not used for mineral resource estimation. There is no explanation in the Anglo American reports as to the reasons for these data being excluded.

7.2.2. Drill Methods

Where known, drilling contractors included Ak Drilling and Geotec S.A.C. in 2009 and Boart Longyear in 2011–2012.

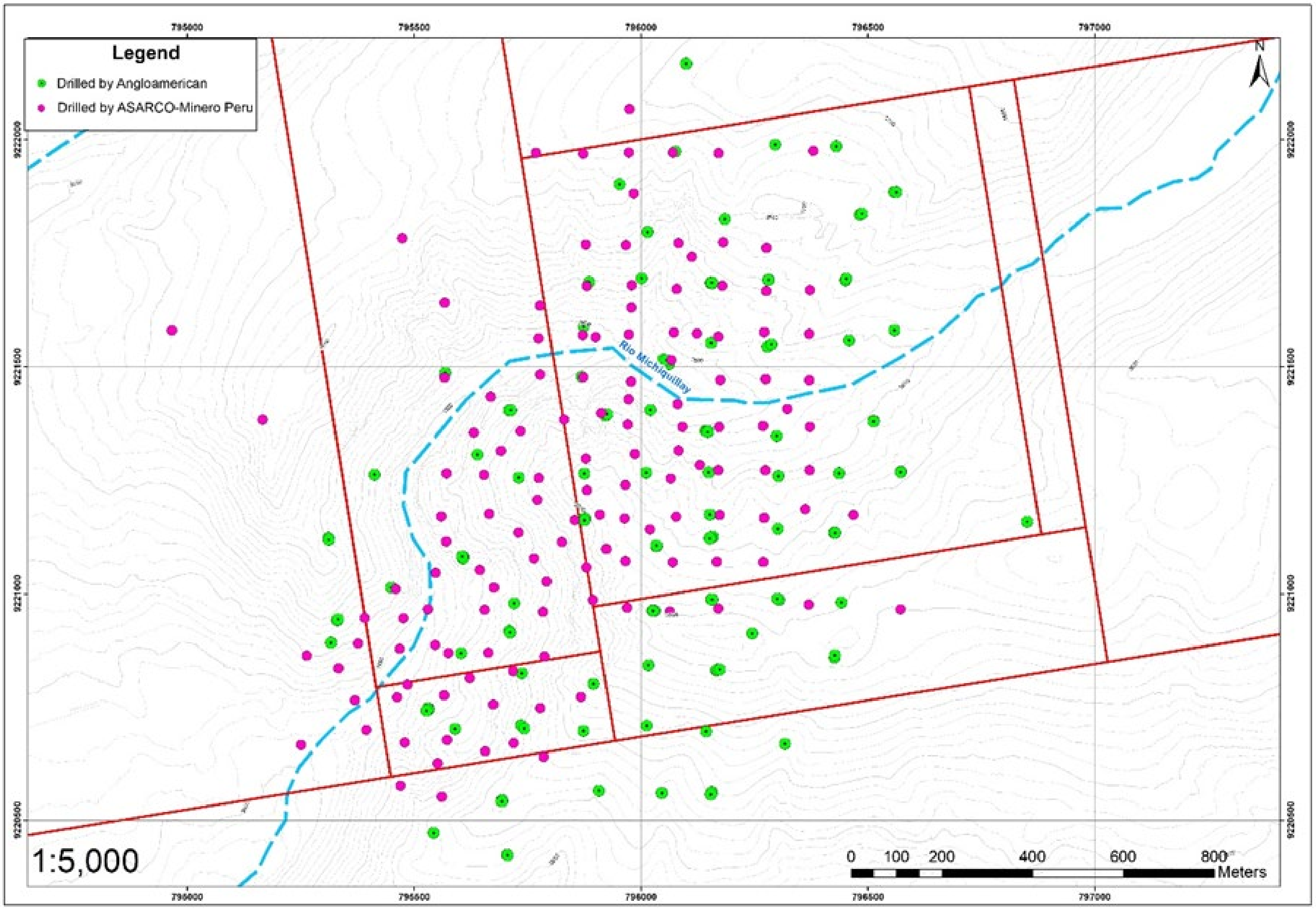
Core drilling used the following core sizes: PQ (85 mm core diameter), HQ 63.5 mm), and NQ (47.6 mm) core and triple tube core barrels. All programs used diamond-tipped tools to drill core.

Most drill holes were inclined at -65° to -75°.

Table 7-1: Property Drill Summary Table

Year(s)	Company	Exploration		Geometallurgy		Geotechnical		Total	
		Number	Meters	Number	Meters	Number	Meters	Number	Meters
1960–1965	Asarco	136	45,796					136	45,796
1972–1975	Minero Perú	17	1,894					17	1,894
2009	Anglo American	30	16,122					30	16,122
2011	Anglo American	3	2,578					3	2,578
2012	Anglo American	68	44,320	13	5,807	7	3,141	88	53,268
Totals		***254***	***110,710***	***13***	***5,807***	***7***	***3,141***	***274***	***119,657***

Figure 7-4: Property Drill Collar Location Map

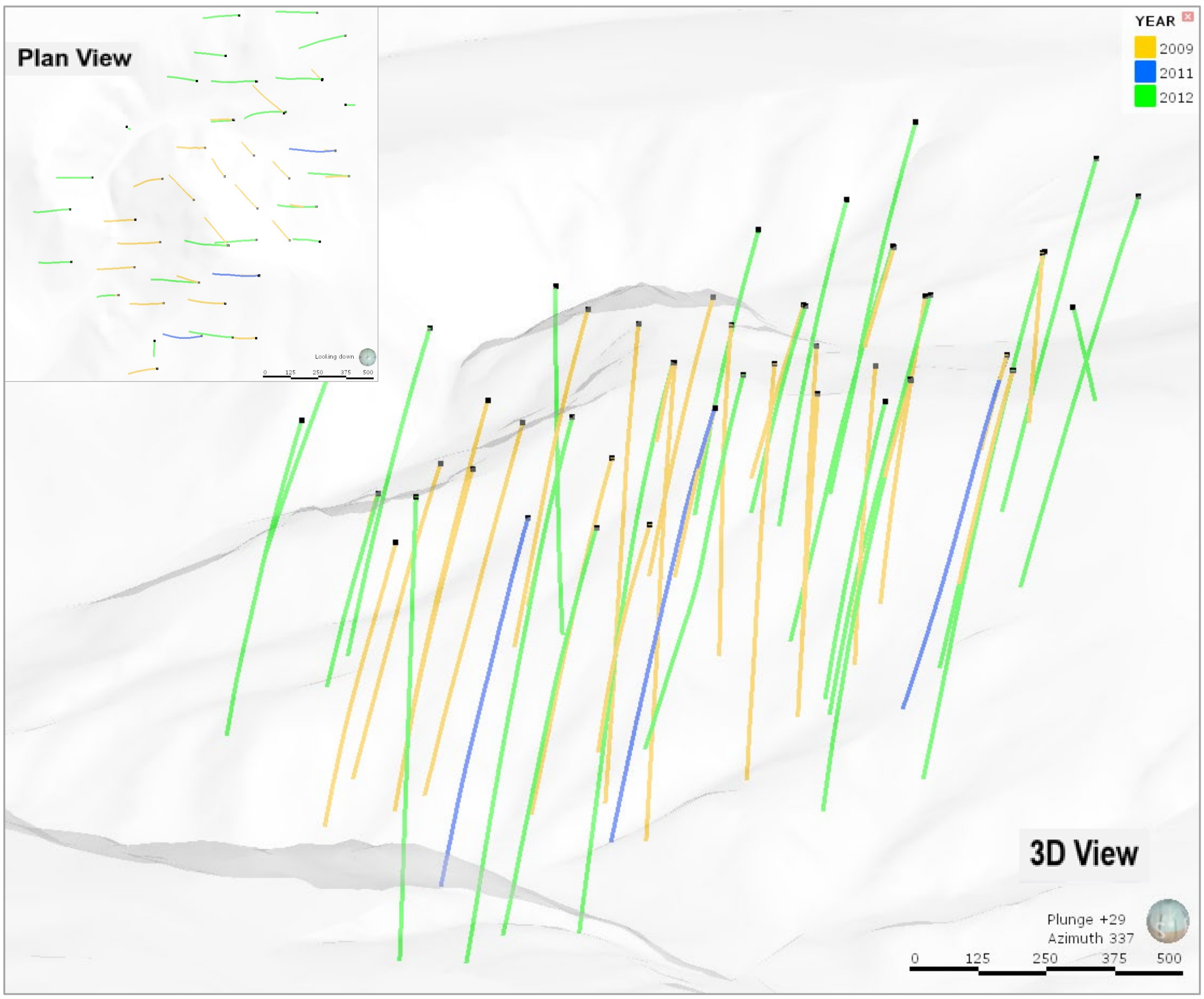


Note: Figure prepared by Southern Copper, 2021.

Table 7-2: Drill Summary Table Supporting Mineral Resource Estimates

Year	Operator	Number of Drill Holes	Total Depth (m)
2009	Anglo American	27	16,050.75
2011	Anglo American	3	2,578
2012	Anglo American	23	17,784.35
Totals		***53***	***36,413.10***

Figure 7-5: Locations of Drill Holes Used for Mineral Resource Estimation, Section View



Note: Figure prepared by Wood, 2021. Plan view inset has north to top of plan view.

7.2.3. Logging

There is physical and digital evidence of quick logs in 2009–2012 where data were entered directly into the database via digital tablets. Once verified, the data were directly uploaded to the acQuire database. Quick logs included depth, the type of lithology, texture, alteration type and style with minerals in the assemblage, and mineralization type. Percentages of copper and the grade of copper, molybdenum and gold were estimated. Different types of veinlets were identified. A short-wave infrared spectrometer, Terraspec, was used to identify the different types of hydrothermal clay minerals. Petrography was used to differentiate the different intrusive events that generate mineralization and alteration.

Core was photographed in its entirety and was photographed wet from what can be evidenced in the historical record delivered to Southern Copper.

In 2011–2012, geotechnical logging included rock type, rock quality designation (RQD), number of discontinuities, depth of discontinuities, discontinuity type, alpha angle, beta angle, estimated uniaxial strength, persistence, aperture, roughness, infilling type, weathering/alteration grade, and presence of water.

Approximately 20% of the core was oriented and oriented structural data were obtained.

7.2.4. Recovery

Recovery data prior to 2009 are not available.

Recovery in the 2009 drilling program was 85% (Ramos, 2010b). Above 100 m, recovery averaged 77%; however, in "zones with cover", recovery averaged 62%. Overall, the porphyry intrusive units averaged about 89% recovery with zones with potassic alteration averaging 91.2% recovery. Recovery in the enriched zone was 89%.

Average recovery in the 2011–2012 drill campaign was 91% (Anglo American, 2013e). Above 100 m, recovery was 87%. Cover material averaged 76% recovery. Intrusive rocks averaged about 94% recovery. The enriched zone averaged 95% recovery.

In areas where core recovery was <50%, no samples were collected because the core obtained was not considered to be representative of the interval.

Wood considers the recoveries from the drill programs to be acceptable.

7.2.5. Collar Surveys

There is no record of the methodology used to survey surface or underground collars or the underground workings prior to 2009.

In 2009, Anglo American used a Trimble R6 differential GPS to determine collar locations.

In 2011–2012, collar locations were determined using Trimble R6 and R8 differential GPS (DGPS) instruments. The primary instrument was the Trimble R6 that was used by AAMSA Topography to do the surveying. A Trimble R8 was used to determine locations as a quality control (QC) measure. Significant deviations were investigated and corrected as necessary.

7.2.6. Downhole Surveys

There is no record of downhole surveying for pre-2009 drill holes in the data made available to Wood.

For a total of 29 of the 30 holes drilled in 2009 and for all drill holes completed in the 2011–2012 campaign, downhole surveys were performed using a gyroscopic instrument from Bornav. Of the 114 downhole surveys in the database, 61 holes were reportedly surveyed twice and the data compared as a QC measure. All of the surveys passed the QC test. Drill holes without QC were primarily vertical. Two very short drill holes were not surveyed. Documentation of the duplicate surveys is not available.

7.2.7. Comment on Material Results and Interpretation

Drill hole spacing varies from approximately 60–100 m in the better drilled deposit areas to about 200 m spacing on the less well drilled portions of the deposit.

The term “true thickness” is not generally applicable to porphyry-style deposits as the entire rock mass is potentially mineralized and there is often no preferred orientation to the mineralization. In areas that display porphyry-style mineralization, in general, most drill holes intersect mineralized zones at an angle, and the drill hole intercept widths reported for those drill holes are typically greater than the true widths of the mineralization at the drill intercept point.

Procedures for 2009–2012 drilling, collar surveying, downhole surveying, and geological and geotechnical logging are consistent with industry-standard practices. Procedures for pre-2009 data collection are not recorded in the information provided to Wood.

Review of recovery data indicated no correlation between grade and zones of lower recovery. In areas where core recovery was <50%, no samples were collected because the core obtained was not considered to be representative of the interval.

No explanation was available to Wood as to why certain drill holes were excluded from the estimate. Some drill holes may have been excluded as they were completed after the June 2012 database closeout date; however, other drill holes completed prior to that date are also excluded from estimation support. Any future mineral resource update should include a reassessment of all drilling and suitability of data to support estimation. It is likely that such an update will be based on more drill holes than the current estimate.

Overall, Wood considers the drill data to be acceptable to support mineral resource estimation.

7.3. Hydrogeology

7.3.1. Sampling Methods and Laboratory Determinations

A baseline of surface water quality was developed in 2020. Sampling and analysis followed guidelines established in the National Monitoring Protocol of the Quality of the Natural Bodies of Surface Water approved by the National Authority of the Water (ANA) through Chief Resolution No. 010-2016-ANA, the monitoring Protocol for water quality of the DGAA-MEM, as well as the protocols established by the Agency for the United States Environmental Protection (EPA, 1992) and the "Standard Methods of Water and Wastewater 23rd Edition 2017".

The water quality sampling information was obtained in two seasons for the baseline surface water quality assessment. The dry season campaign was performed in August 2020 and the wet season campaign was performed in February 2020. Surface expressions of groundwater, in the form of springs, were sampled at multiple locations in addition to the surface water sites. The springs were also part of the wet and dry season 2020 sampling program.

Sampling, conservation, preservation of samples, as well as the analysis of parameters in the dry and wet season campaigns were performed by the AGQ laboratory Peru S.A.C. SGS Perú performed parameter perishable analyses on dry season samples. Both laboratories are accredited by the Institute National Quality (INACAL). Baseline field measurements included pH, electrical conductivity (CE) and flow rate (Q). Baseline laboratory measurements for surface water quality included physicochemical parameters, inorganic parameters (metals), organic parameters, and microbiological and parasitological quality parameters.

The samples collected were preserved and conserved according to the procedures established by the accredited laboratory.

7.3.2. Comment on Results

A baseline of surface water quality was developed for the Project. Data were obtained in two seasons of surface water quality assessment.

Surface water quality results were evaluated using the following Standard as a reference: National Environmental Quality Standards for Water (ECA-Water) approved by the D.S. No. 004-2017-MINAM and the Classification of Surface and Marine-Coastal Water Bodies approved by R.J. No. 056-2018-ANA. The sampling results were compared with the ECA Category 3 subcategory D1 "Vegetable Irrigation".

7.3.3. Groundwater Models

The hydrogeological model of the study area is based on different hydrogeological units controlled by their hydraulic conductivity (K):

- The Quaternary fluvioglacial deposits are unconsolidated and form an aquifer considered to be the main hydrogeological subunit in the area. It is composed of uncemented granular materials with favorable characteristics for storage and circulation of groundwater, but it is limited by its extension and thickness, as well as the recharge and contributions of water from the springs and other hydrogeological units in the study area
- Hydrogeological subunits include the Farrat and Inca Cracked Sedimentary Aquifers, which are quartz sandstones, calcareous sandstones and levels of calcareous shales. The Chúlec and Yumagual Fissured Karst Aquifers are exposed in the area and are composed of sandy limestones, marl and calcareous shales. These hydrogeological units are part of the rock basement and are based largely on fractures and joints, which influence their hydraulic conductivity for the storage and direction of the subsurface and underground flow
- The Pariatambo Sedimentary Aquitard is composed of shales interspersed with thin sequences of bituminous limestone, this hydrogeological unit crops out in the southwest of the study area and is characterized by low to very low permeability
- The Dacite Intrusive Aquitard consists of dacitic porphyry and quartz monzonite. The mineralization is located withing this hydrogeological unit. It is a very impermeable

material, so it will act as a hydraulic barrier for the direction of the underground flows but will be restricted by the local and regional faults present in the study area, which can allow the circulation of the underground flows.

Significant manifestations of groundwater and surface water in the form of seepage, captured and untapped springs, wetlands and lagoons are located around the dacite intrusive aquitard. Within the area of the dacite aquitard, groundwater manifestations are very restricted.

The physicochemical parameters of the underground and surface water stations indicate that the waters are basic. This is possibly related the fact that in the wet season there is greater precipitation and recharge of the rivers and recharge decreases towards the dry season. Some water sources of water were acidic, primarily where waters were in contact with mineralized rocks, and zones of hydrothermal and supergene alteration.

Two hydrochemical facies were recognized:

- Calcium bicarbonate waters were related to water in contact with fluvioglacial deposits and to a lesser extent with sedimentary rocks and igneous bodies. It is probable that this facies is associated with precipitation with low chloride contents. These are considered to be of local flow or of surface systems
- Sodium sulfate waters occurred in contact with the intrusive igneous rocks and mineralization. Sulfate indicates the influence of sulfide. The chemical characteristics of these stations suggest that the waters probably have a longer route from the recharge area, as well as a longer residence time and interaction with the surrounding rocks, so we can relate to intermediate or deep system flows.

The recharge and direction of the underground flow in the study area was defined by the sedimentary Farrat, Inca, Chulec and Yumagual aquifers and by the fluvioglacial aquifer.

The recharge and direction of the underground flow in the Michiquillay study area is controlled by the Farrat, Inca, Chulec and Yumagual Formations, which are sedimentary aquifers and a fluvioglacial, unconsolidated porous aquifer. These aquifers allow infiltration and percolation of meteoric waters through a system of rocky, highly weathered and fractured material that allows for the circulation of subsurface water. In the study area, there is a surface system that drains and circulates meteoric water that form low-flow springs on the concession.

There is a deep aquifer system associated with the different geological formations in the study area with flow that is a secondary contribution to certain springs and surface courses. These are not considered significant. These waters are generally associated with local and regional faults that allow circulation in deep or regional subsurface water.

7.3.4. Water Balance

Walsh Perú S.A produced a conceptual water balance in 2021 defining a dry micro-basin and the Michiquillay micro-basin. The dry micro-basin is a micro-basin in the northwestern sector of the study area with an area of about 194.4 ha. Quaternary fluvioglacial deposits are the primary control on groundwater flow in this micro-basin. The recharge area is given by rainfall in the high areas, having an estimated infiltration of 30%. Discharges occur in the direction of the Chullumayo Creek and are mainly springs. The equipotential lines interpreted in the area vary between 3,860–3,370 masl, with a flow direction from northeast to southwest.

The Michiquillay micro-basin is located in the central sector of the study area. The main lithologies are Quaternary fluvioglacial deposits and dacitic porphyry. The control area for the water balance has been calculated at 329.7 ha. Recharge for this micro-basin is due to rainfall in the high areas, with an estimated infiltration of 70%. Discharges occur in the direction of the Chullumayo Creek and are mainly springs and a mine opening identified in the area. Equipotential lines interpreted in the area vary between 3,720–3,290 masl, with a flow direction from northeast to southwest.

7.4. Geotechnical

Geotechnical assumptions for conceptual pit slopes were provided by Piteau Engineering Latin America S.A.C. (Piteau). Piteau collected geotechnical data from 31 un-oriented core samples in 2009–2010. In 2011–2012, Anglo American drilled seven oriented core holes (3,140.6 m) and prepared geotechnical logs for those holes. No pit slope design studies have been completed.

7.4.1. Sampling Methods and Laboratory Determinations

Logging data collected by Piteau in 2009–2010 included RQD, discontinuity frequency, intact rock strength, weathering/alteration style and intensity, and the presence of water. Uniaxial compressive strength (UCS), triaxial and Brazilian tensile strength, direct shear testing on open joints, grain size determinations, and Atterberg limits of soil-like materials were determined by laboratory testing at Mecanica de Rocas Ltda. in Calama, Chile. The laboratory was ISO 900:2000 certified when the work was completed and testing equipment calibrations were provided as a QC measure. Stiffness properties (modulus) were measured for five of the UCS samples and 19 of the triaxial samples.

Piteau Engineering completed geotechnical logging on 31 drill holes, point load testing of samples from 18 drill holes, and conducted core and discontinuity orientation, and rock mass properties on all 31 drill holes in 2010. The oriented core was used to classify the rock mass based on the Bieniawski RMR89 classification system. All data were used to determine the rock mass rating (RMR) for all 31 holes.

The 2012 oriented core was oriented with Reflex ACT II and ACT III RD instruments. A gyroscopic instrument (brand and type not reported) was used to perform downhole surveys and optical and acoustical televiewers were used to orient structures.

7.4.2. Comment on Results

Logging data and laboratory testing results are generally consistent with the description of the rock mass. Methods and data collected are consistent with generally accepted industry standard of practice as described in Read and Stacey (2010).

8. SAMPLE PREPARATION, ANALYSES, AND SECURITY

8.1. Sampling Methods

8.1.1. Geochemical Samples

Soils were sampled by cleaning a 40 x 40 cm area and excavating a 15 cm diameter hole. The first 10 cm of the sill layer was sieved through a 10-mesh sieve. One to two kilograms of material was recovered.

Rock samples were essentially chip samples collected over a 2 x 2 m area around the sample point. The target sample weight was 2.5 kg.

8.1.2. Core Samples

Core samples were typically sampled on 3 m intervals, ignoring geological boundaries, but about 20% of the intervals were shorter and a very small number were longer. Shorter intervals were identified when a mineralized zone was encountered or exited. The minimum sample length was 1.5 m.

Core was split with hydraulic core splitters.

8.2. Sample Security Methods

Core boxes were shipped to Cajamarca by company personnel. There, samples to be analyzed were packed in plastic bags and shipped by truck to ALS Minerals in Lima.

No other records of sample handling or security were available to Wood.

8.3. Density Determinations

There are 1,274 density data at Michiquillay. Samples were collected on 20 m intervals except for sulfide and enriched areas where 10 m intervals were used. Samples were 10–30 cm in length. ALS Minerals used a wax-coated immersion method to determine density.

A QA/QC report indicates that two standards with nominal values of 2.81 and 4.73 g/cm^3 were used for quality control. Check determinations were performed by SGS Perú in Lima (SGS). The samples were the same as those analyzed by ALS Minerals.

8.4. Analytical and Test Laboratories

Laboratories used prior to 2009 are not well documented. From 1959–1965, Asarco used an unidentified laboratory in El Paso, Texas for total copper assays.

The 2009 and 2011–2012 drill samples were analyzed at ALS Minerals. ALS Minerals is currently ISO 9001 and ISO 17025 accredited and independent of Southern Copper.

SGS acted as the check assay laboratory for the 2009 and 2011–2012 drill samples. SGS is currently ISO 9001 and ISO 17025 accredited and independent of Southern Copper.

8.5. Sample Preparation

Sample preparation for the 2009-2012 work consisted of:

- Drying at 105°C until dry
- Crush all samples to 70% passing 2 mm (10 mesh)
- Split 500 g analytical sample in riffle splitter
- Pulverize 500 g to 85% passing 74 µm (200 mesh)
- Granulometry was tested every 30 samples at the crushing and pulverization stages.

8.6. Analysis

ALS Minerals used the following methods:

- Copper and molybdenum were analyzed using a four-acid digestion with atomic absorption spectrometric (AAS) finish
- Acid soluble copper was digested with citric acid and finished with AAS
- Cyanide soluble copper was digested in an aqueous cyanide solution and finished by AAS
- Gold was analyzed by 30 g fire assay with AAS finish
- A 30 element suite, with aqua regia digestion and inductively-coupled plasma (ICP) atomic emission spectroscopy (AES) finish.

SGS was the check assay laboratory and used the same procedures as ALS Minerals.

8.7. Quality Assurance and Quality Control

No quality assurance or quality control (QA/QC) measures were implemented for collar and downhole surveys.

There is no record of QA/QC checks for geological or geotechnical logging.

Density QC was accomplished by routinely determining the density of two standard samples. Results of the standard determinations were not supplied to Wood.

QA/QC for the 2009 drill program consisted of insertion of field duplicates (2%), preparation (crusher) duplicates (2%), pulp duplicates (2%), standard reference materials (standards) (6%), coarse blanks (2%), and fine blanks (2%) into the sample stream. Check assay samples (4%) were sent to a second laboratory.

Precision for the 2009 program, based on duplicate samples, was reviewed by Wood. Copper was determined to be acceptable. Molybdenum, gold, and silver were uniformly low-grade and precision was somewhat outside the limits. Wood concluded that due to the low grades, precision was not a concern.

In 2009, six standards were routinely analyzed and the results used to evaluate accuracy. Results for copper, molybdenum, and gold were determined to be acceptable.

Blank samples in 2009 indicated that no systematic contamination occurred during sample preparation or analysis of the samples.

Check assays suggest no significant biases between the primary and secondary laboratories.

In 2011–2012, Anglo American inserted coarse blanks (4.2%), core duplicates (2.2%), crusher duplicates (3.9%), pulp duplicates (3.9%), and standards (4.4%) into the samples stream and sent about 5.9% of their samples to a second laboratory for check assays.

Precision was determined to be acceptable for all elements.

Accuracy was determined to be acceptable for all elements.

No contamination was indicated.

Check assays were sent to SGS for analysis. Copper and gold were acceptable. Molybdenum data were somewhat outside the limit, but average grades were 85 ppm which is quite low and will contribute to the poor precision. Wood considered the molybdenum results to be acceptable.

8.8. Database

Data are housed in acQuire, a dedicated geological data management software.

8.9. Qualified Person's Opinion on Sample Preparation, Security, and Analytical Procedures

Based on the data made available, Wood considers that a reasonable level of verification has been completed, and that no material issues would have been left unidentified from the programs undertaken. The data are suitable for use in mineral resource estimation.

Wood observed that the Anglo American sample preparation, analytical, and QA/QC procedures were consistent with industry standards at the time the data were collected and with current standards. Sample security was consistent with common practices at the time the samples were collected.

9. DATA VERIFICATION

9.1. Internal Data Verification

Southern Copper resurveyed collar locations of drill holes completed in 2009 and originally surveyed with a Trimble R6 GPS. Based on a geodesic point on the Michiquillay Project, there is a difference of ±3.8 cm in the horizontal (easting, northing) and ±0.3 cm in the vertical (elevation).

Similar checks of the 2011–2012 data show differences are 21 cm in the horizontal and 33 cm in the elevation as maximum.

9.2. External Data Verification

There is no documentation of any external validation completed by third parties.

9.3. Data Verification by Qualified Person

9.3.1. Site Visit

Representatives from Wood visited the Michiquillay Project, as outlined in Chapter 2.4. Observations from the visit were incorporated into Wood's conclusions as appropriate to the discipline areas in this Report, or incorporated into the recommendations in Chapter 23.

During the site visit, Wood:

- Reviewed and verified data acquisition procedures with Southern Copper personnel
- Logged core from eight holes to verify Anglo American logging
- Inspected drill platforms and visited outcrops to verify that the lithologies and alteration in the database were properly identified
- Reviewed access to the site, general terrain where the deposits are located, and surface exposures.

Wood concluded that the data acquisition procedures were consistent with industry procedures and that they were adequate to support mineral resource estimation.

9.3.2. Data Verification

For the density samples that have supporting documentation, Wood found no differences between the database record and the supporting records. In Wood's opinion the data provided by Southern are acceptable for use in mineral resource estimation.

Wood selected 30% of the total drill holes for a drill hole integrity check. Database data were compared to original data. Results of the integrity checks of the geology and assay data indicate that the Michiquillay database is reasonably free of errors and adequate to support mineral resource estimation. There are no supporting documents available for collar and survey data; therefore, Wood was unable to cross-check these data for accuracy, precision or the presence of errors.

Wood reviewed the geological model by comparing the logged intercepts in core holes against the interpretations of the geologic model in east–west sections and the block model encoded with information on lithology, structures, and zones of mineralization. That comparison indicates that the modeled lithology, alteration and type of mineralization reasonably match the drill data; however, the digital geological model files (wireframes) were not located and the review relied on cross sections of the model presumably prepared from the wireframes, but that presumption is not verified.

9.3.3. Peer Review

Wood requested that information, conclusions, and recommendations presented in the body of this Report be peer reviewed by Wood subject matter experts or experts retained by Wood in each discipline area as a further level of data verification.

Peer reviewers reviewed the information in the areas of their expertise as presented in this Report. This could include checks of numerical data, consistency of presentation of information between the different Report chapters, consistency of interpretation of the data between different discipline areas, checked for data omissions, verified that errors identified during Wood’s gap analyses were appropriately addressed or mitigated, and reviewed the appropriateness of the individual QP’s opinions, interpretations, recommendations, and conclusions as summarized by the QP Firm.

9.4. Qualified Person's Opinion on Data Adequacy

In Wood's opinion, the sample preparation procedures, analytical methods, QA/QC protocols, and sample security for the samples used in mineral resource estimation are adequate to support mineral resource estimation.

10. MINERAL PROCESSING AND METALLURGICAL TESTING

10.1. Test Laboratories

Three metallurgical testing facilities were used during the 2007 metallurgical testwork campaigns. G&T Metallurgical Services of Kamloops, Canada, completed cyanide leach and flotation testwork in 2011, and SGS and CIMM, both located in Santiago, Chile, completed comminution tests in 2007 and 2011 respectively.

There is no international standard of accreditation provided for metallurgical testing laboratories or metallurgical testing techniques. The testwork facilities were independent of Southern Copper.

10.2. Metallurgical Testwork

10.2.1. Comminution Testwork

CIMM managed the testwork and sent the samples to SGS for comminution testing. A total of 99 samples were subjected to SMC a x b breakage parameters and Bond work index tests. Results are provided in Table 10-1. The secondary mineralization sample was the softest of the samples, and had the highest variability.

10.2.2. Grinding Testwork

DJB Consultants, Inc. (DJB) were contracted by Anglo American in 2011 to provide an interpretation of grindability test results and grinding system designs. The scope of work consisted of:

- Loading existing test results for 99 grindability samples into DJB's proprietary "Millpower 2000" grinding model
- Performing circuit modelling for an existing circuit design nominated by Fluor (the VSP 90 kt/d circuit; however, the Fluor report was not made available to Wood)
- Providing a recommendation of a one-line circuit employing one 40-ft diameter semi-autogenous grind (SAG) mill, whilst maximizing both circuit throughput and energy efficiency
- An "opportunity case" circuit design involving a 42-foot diameter SAG mill.

Table 10-1: Comminution Test Results by Alteration Type

Testwork Type	Statistics	Secondary	Potassic	Chloritic–Sericitic	Sericitic
Bond work index (kWh/t)	Minimum	5.10	8.45	9.86	10.80
	Average	10.42	10.93	12.50	12.97
	Maximum	14.39	13.10	14.61	15.40
	Standard deviation	2.19	1.09	1.16	1.10
SMC (Axb)	Minimum	42.85	21.00	22.78	25.73
	Average	147.67	45.70	48.97	45.85
	Maximum	397.76	134.83	153.75	106.21
	Standard deviation	112.45	29.87	25.20	15.99

10.2.2.1. DJB Recommended Circuit

The DJB recommended circuit configuration for a one-line plant using a 40 ft SAG mill resulted in the following configuration that could produce a median throughput of 120.7 kt/d:

- One SAG mill of 40-ft diameter and 24.5-ft effective grinding length with a 29 MW wrap-around motor operating at 78% of critical speed. The mill would normally operate at 18% v/v ball charge and 25% v/v total filling, and the motor would be capable of operating at 20% v/v ball charge and 30% v/v total filling
- Two ball mills of 26-ft diameter and 40-ft effective grinding length with 16.4 MW wrap-around motors operating at 78% of critical speed. The mill would normally operate at 33% v/v total filling and the motor would be capable of operating at 36% v/v total filling (at which point balls will be coming out of the scats chute)
- Two operating 1,000 HP pebble crushers with a third on standby fed by bins. Crushed pebbles would normally be returned to the SAG mill but could optionally be diverted to the ball mill feed chutes (via dual-purpose ball charging and crushed pebble conveyors), in a SABC-A/B configuration.

10.2.2.2. Fluor Model

The Fluor 90 kt/d VSP circuit was modelled using Fluor design criteria:

- "Millpower 2000" predicted that the circuit would produce a throughput of 106.1 kt/d on the sample that represents the median of the 99-sample set. Throughput was expected to be >90 kt/d on over 90% of the 99-sample set

- This circuit had to operate with the crushed pebbles feeding the ball mill feed chutes on most samples in the data set (and all the samples of UGM-2). There were a reasonable number of samples in UGM-1 (50%), UGM-4 (40%) and UGM-5 (40%) that would benefit from returning crushed pebbles to the SAG mill. The setup where crushed pebbles normally feed the ball mills with the option to feed the SAG mill is referred to as a SABC-B/A configuration.

10.2.2.3. Recommendations for Additional Work

DJB recommended that the following work be undertaken:

- Conduct a PQ diameter drilling program to provide whole-diameter core for grindability testing that would include Bond work index series, JK/SMC and Minnovex SP tests. The quantity of drill holes and samples required would be a function of the geology and mine plan
- Position the drill holes to cover the major lithology and alteration types with a particular focus to sampling the “payback pit”. Composite each hole into intervals of approximately 15 m length such that each composite consists of “similar” material (e.g. same lithology, similar alteration, RQD). Composites should be contiguous and back-to-back down the hole. Some composites will necessarily consist of mixtures of lithology and alteration due to geological units being <15 m down-hole interval lengths
- Perform a full geological and geotechnical logging of these holes, including collection of point load index and optionally uniaxial compressive strength tests
- Only the Bond low energy impact crushing (Wi_c) and the full JK drop weight test samples are required to be whole diameter core. Select specimens from each core box for these two tests. These require <20 kg of material from each composite
- Other tests can be conducted on half-diameter core. Cut the core half. The half not being used for grinding may be used for resource assaying, flotation testing, or left in the box as a record
- At the comminution laboratory, coarse crush and thoroughly mix the 15 m composites of half-core. Pull samples from each composite for Bond ball mill work index, Bond rod mill work index, Bond abrasion index, Minnovex SPI and crusher index, and SMC drop weight tests

- Perform duplicate tests on 10% of the Bond and SMC samples at a second laboratory as a quality control step. It is not necessary to perform duplicates of all tests on a single sample; they may be staggered across the program to equalize the composite mass requirements across the whole sample set.

10.2.3. Testwork and Samples Used for Throughput Estimates

10.2.3.1. Throughput Predictions

Two grinding circuit configurations were modelled by DJB:

- Circuit 1: DJB recommended one-line 40-ft circuit
- Circuit 2: Fluor VSP 90 kt/d circuit.

Fluor also produced a 100 kt/d circuit design that was not simulated using "Millpower 2000". The 90 kt/d circuit is capable of more than 100 kt/d on most samples, according to "Millpower 2000", rendering the second Fluor circuit unnecessary.

DJB recommended that, in the absence of throughput predictions based on a mine plan, the 25th percentile sample of the whole data set be used as the "nameplate tonnage" for preliminary economic analyses, and suggested that the plant hydraulic design be capable of accommodating the 75th percentile sample when mass balance rates, froth factors and design factors were considered.

Summary statistics for both circuits are presented in Table 10-2.

Figure 10-1 shows the DJB recommended circuit and Figure 10-2 shows the Fluor VSP 90 kt/d circuit; both circuits use median data.

10.2.3.2. Throughput Sensitivity to Product Size

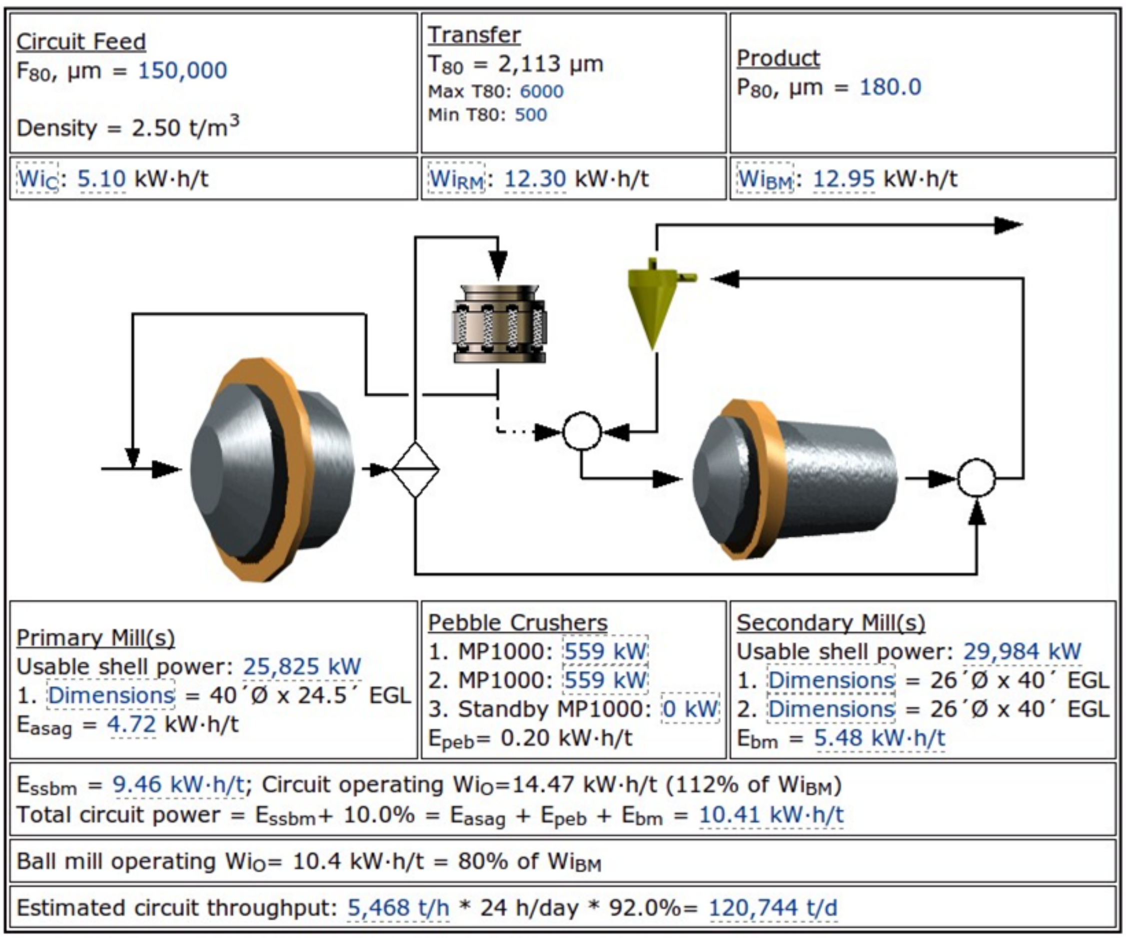
DJB ran the "Millpower 2000" model on the 25th, 50th and 75th percentile samples of the base-case size product size (180 µm) with different P80 targets. Table 10-3 displays the sensitivity to product size for the samples indicated. The percentiles given were only applicable to the 180 µm size and were meant as a rough guide to how a "soft", "medium" and "hard" sample could react to changing the product size target.

SAG mill limited samples could not achieve the target product size because the SAG mills became constrained by the 6,000 µm transfer size target. Because the feed to the ball mills was restricted and the ball mills were modelled at a fixed speed, they will over-grind the mineralization relative to the target P80.

Table 10-2: "Millpower 2000" Throughput Predictions

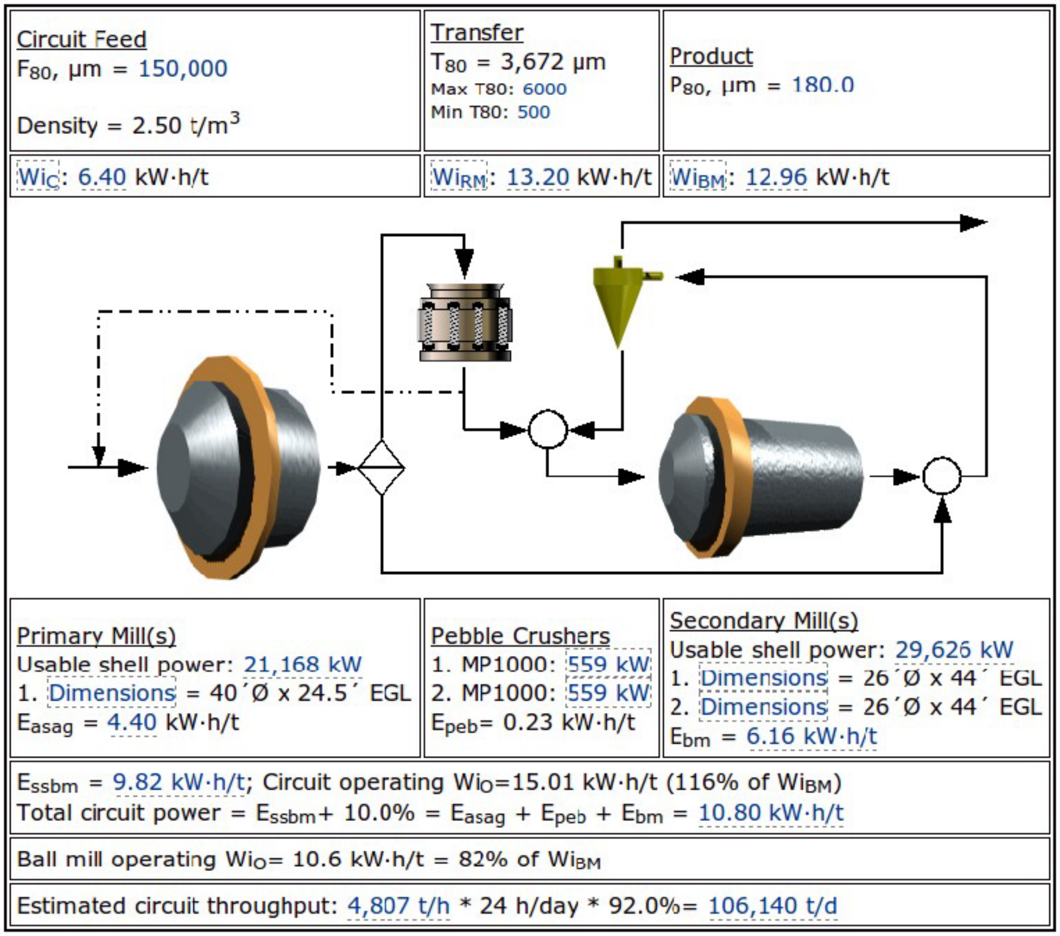
	Unit	DJB Recommended Circuit	Fluor VSP 90 kt/d Circuit
25th percentile (for financial calculations)	t/d	110,335	97,061
50th percentile (life-of-mine throughput)	t/d	120,744	106,140
75th percentile (hydraulic design)	t/d	137,207	122,178

Figure 10-1: DJB Recommended Circuit



Note: Figure prepared by DJB Consultants, 2011.

Figure 10-2: Fluor VSP 90 kt/d Circuit



Note: Figure prepared by DJB Consultants, 2011.

Table 10-3: Millpower 2000 Throughput Predictions At Different Target P_{80} Sizes

Circuit	Percentile	P_{80}=150 µm	P_{80}=180 µm	P_{80}=220 µm
DJB Recommended Circuit	Sample UG5_010 (25th percentile of 180 µm)	102,198 t/d	110,335 t/d	119,690 t/d
	Sample UG4_012 (50th percentile of 180 µm)	110,717 t/d	120,744 t/d	132,612 t/d
	Sample UG4_006 (75th percentile of 180 µm)	126,076 t/d	137,207 t/d	147,603 t/d (SAG limited, 211 µm)
Fluor VSP 90 kt/d circuit	Sample UG4_008 (25th percentile of 180 µm)	89,712 t/d	97,061 t/d	105,552 t/d
	Sample UG5_012 (50th percentile of 180 µm)	97,681 t/d	106,140 t/d	116,048 t/d
	Sample UG4_018 (75th percentile of 180 µm)	112,000 t/d	122,178 t/d	130,087 t/d (SAG limited, 205 µm)

Alternatively, the ball mills could be operated at a lower speed to maintain the target P80 size, provided that the plant operators had an on-stream particle size monitoring system.

10.2.4. Flotation

A total of 98 samples were subjected to primary flotation testwork to understand the potential of base metals and gold recoveries; however, the metallurgical report was not made available for Wood to review.

GeoInnova, a consultant for Anglo American at that time, reviewed the testwork results and carried out an initial assessment of potential recovery of valuable metals.

The results of the testing by alteration for total copper (CuT), molybdenum and gold are summarized in Table 10-4.

GeoInnova also attempted to make a projection of the quality of the concentrate to be produced at Michiquillay; the projection indicates that the copper content in the concentrate could vary between 17.5–22.5% Cu.

Table 10-4: CuT, Mo, and Au Recovery (%)

Alteration	Geometallurgical Unit	# of Samples	CuT		Mo		Au	
			Min.	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**
Secondary	UGM-1	13	87.6	96.5	52.0	98.7	54.4	91.7
Potassic	UGM-2	21	85.3	95.5	34.6	96.4	58.9	87.1
Chlorite–sericitic	UGM-3	28	50.9	93.1	20.3	95.2	47.1	87.6
Sericitic	UGM-4	33	75.1	96.3	42.0	98.0	51.9	99.0
Total	**—**	***95***	***50.9***	***96.5***	***20.3***	***98.7***	***47.1***	***99.0***

10.2.5. Whole Ore Cyanidation

The program was conducted on half drill core sample from several drill holes. Samples were prepared into two composites, identified as UG 7.1 and UG 7.2 (UG = geometallurgical unit, though no specific definition of the metallurgical unit was provided).

The mass of the sample prepared was 103 kg and 92 kg of UG 7.1 and UG 7.2, respectively.

The measured feed grades of the composites were 0.10 g/t Au and 0.30 g/t for UG 7.1 UG 7.2, respectively.

Standard cyanide leach bottle roll tests were conducted on the samples. The tests were 48 hours in duration with a cyanide solution strength of 1.0 kg/t NaCN. Each test was modulated with lime to pH 11, and used a 2 kg test charge. The results of the tests are shown in Table 10-5.

The cyanide leach tests on the unground sample were performed to indicate if a coarse or heap leach process should be investigated further. The results of these tests were poor, indicating the process would likely be uneconomic. The leach performance of the sample ground to 117 µm P_{80} was marginally better.

10.3. Recovery Estimates

Overall copper recovery in the resource estimate for the Project is estimated to be 85.4% based on the resource distribution by alteration. Details of these recoveries are summarized in Table 10-6.

Table 10-5: Cyanide Leach Results

Test	Composite	Particle Size (µm)	Dissolved Oxygen (mL/L)	pH	Reagent Consumption		Au Extraction (%)
					Lime	NaCN	
1	UG 7.1	1,700	8.3–9.2	11	1.3	0.5	41
2	UG 7.1	1,065	7.6–8.6	11	1.5	0.6	67
3	UG 7.2	1,065	7.7–11.0	11	1.6	0.7	67
4	UG 7.2	117	8.6–9.3	11	NA	NA	74

Note: NA = not applicable.

Table 10-6: Estimated Copper Recovery by Alteration Type

Alteration	CuT (%)
Secondary	90.2
Potassic	90.3
Chlorite–sericitic	82.2
Sericitic	84.3
Total	***85.4***

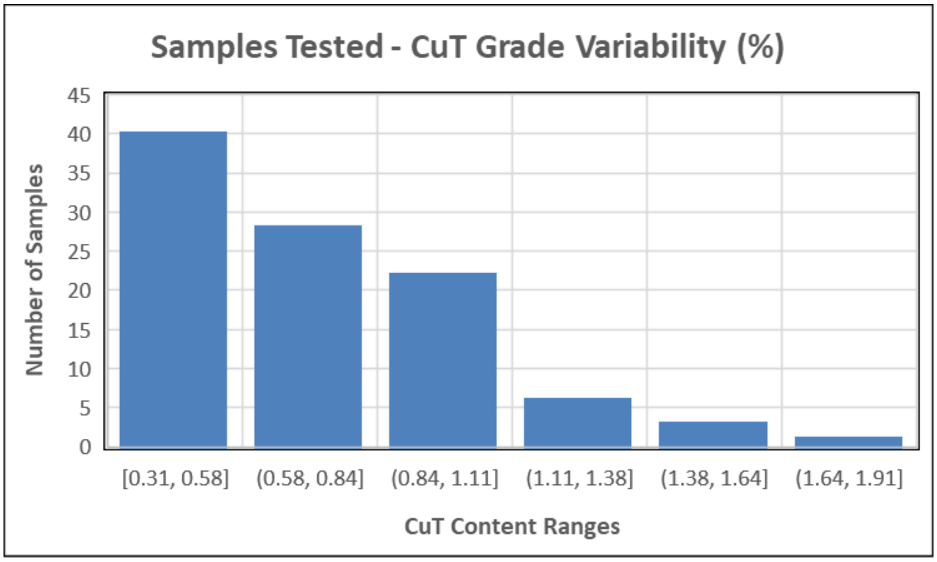
10.4. Metallurgical Variability

Variability test results for total copper, molybdenum, gold, silver, and arsenic are summarized in Figure 10-3 to Figure 10-12. The figures show that the material selected for testwork is reasonably representative of the mineralization variability.

10.5. Deleterious Elements

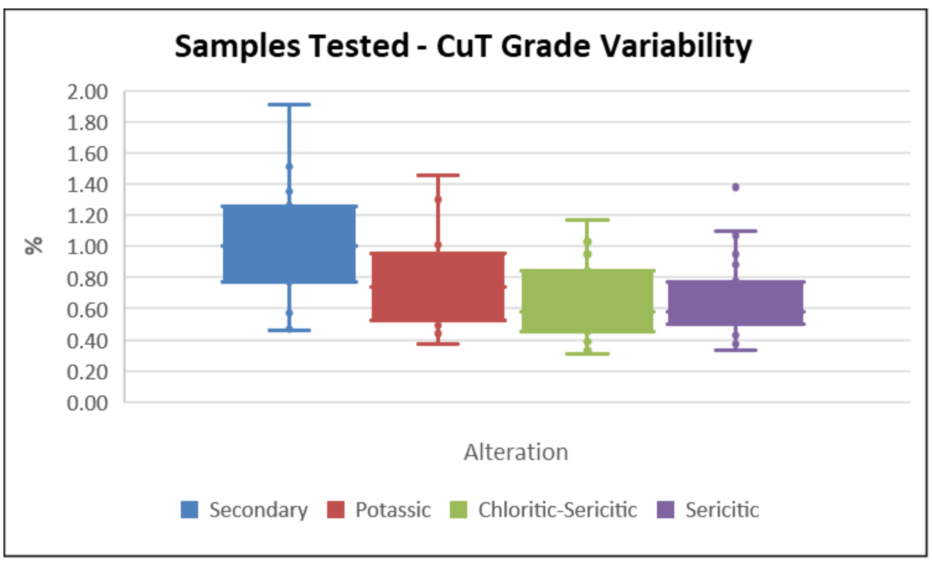
A total of 14,290 samples were analyzed for arsenic, and >90% of the samples (12,861) contained <200 ppm As (Figure 10-13). The remaining 10% or higher values or with the potential of being contaminants were primarily associated with veining. Based on these data, arsenic is not considered to be an element of concern in any future concentrate.

Figure 10-3: Total Copper Grade Variability



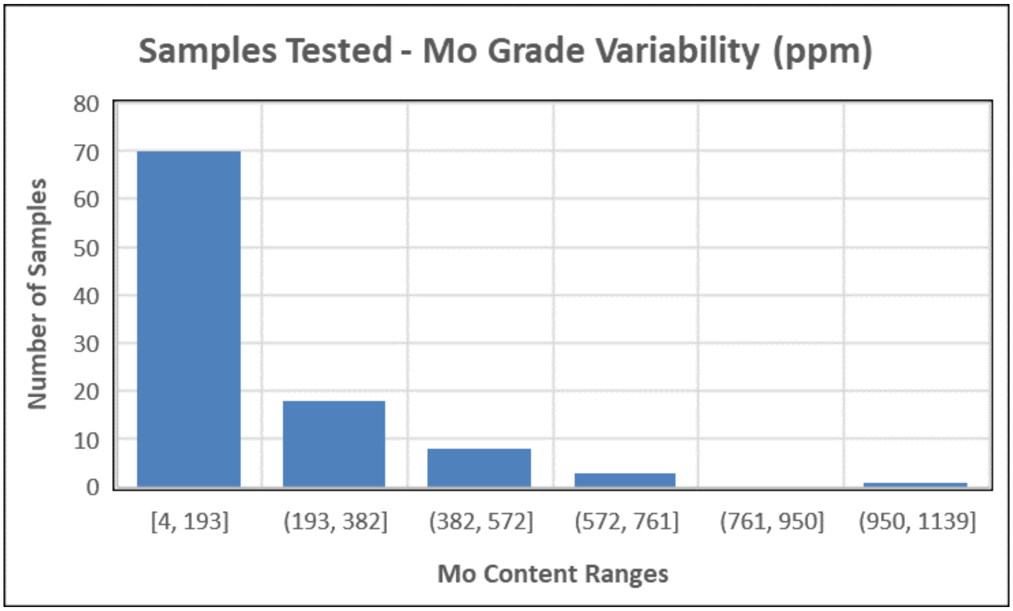
Note: Figure prepared by Wood, 2021.

Figure 10-4: Total Copper Grade by Alteration Type



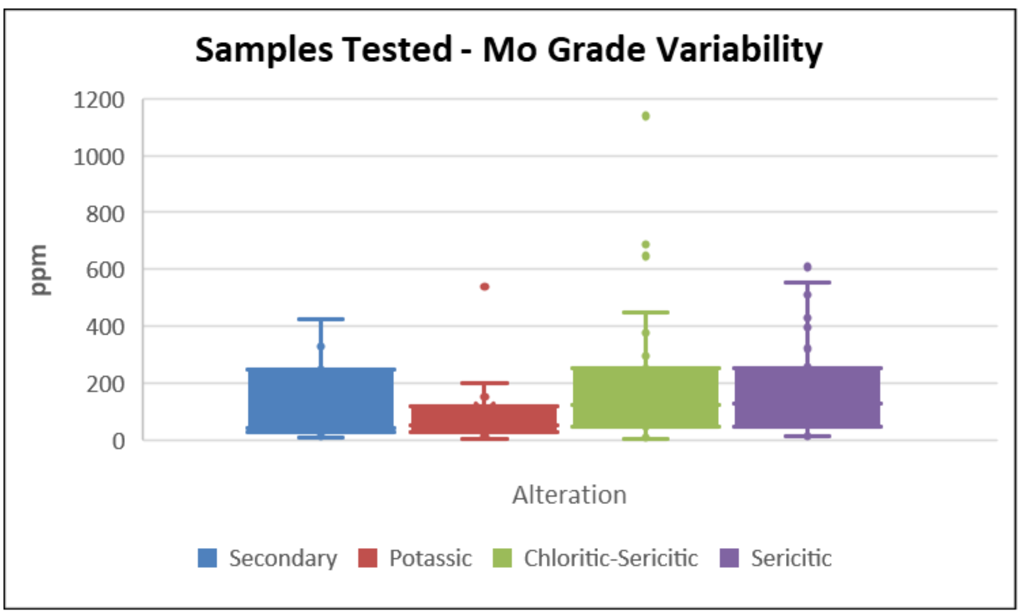
Note: Figure prepared by Wood, 2021.

Figure 10-5: Molybdenum Grade Variability



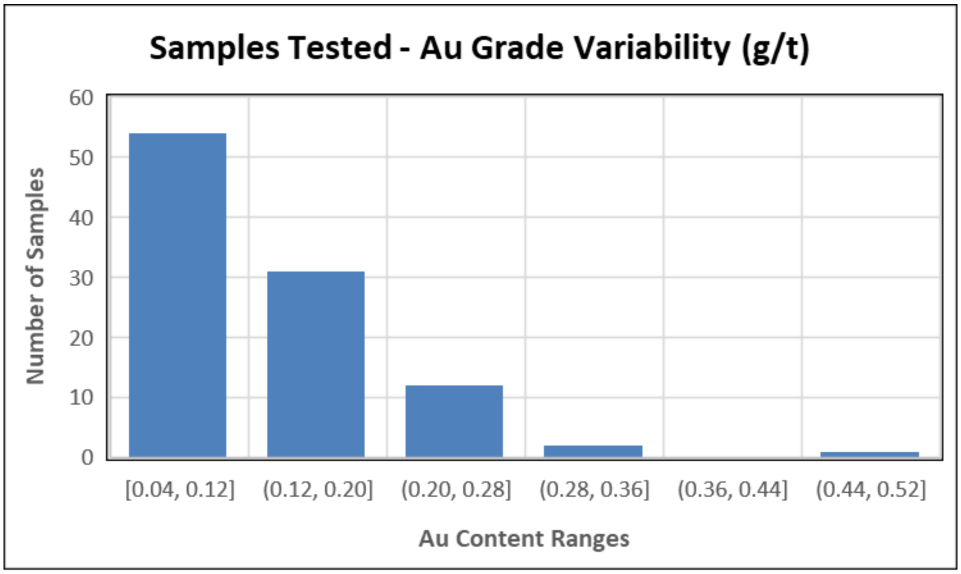
Note: Figure prepared by Wood, 2021.

Figure 10-6: Molybdenum Grade by Alteration Type



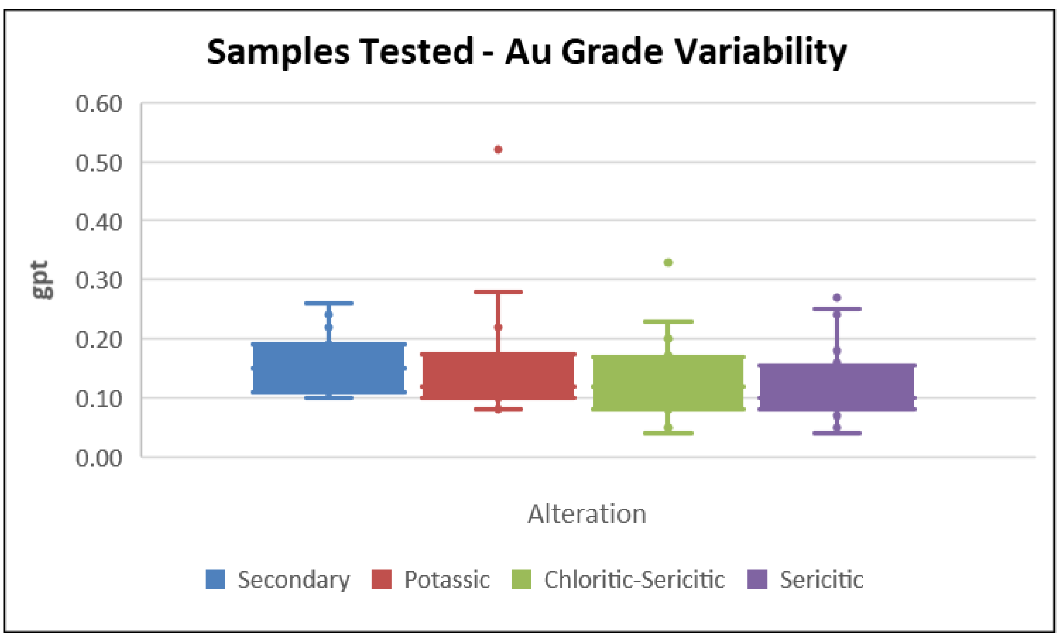
Note: Figure prepared by Wood, 2021._.

Figure 10-7: Gold Grade Variability



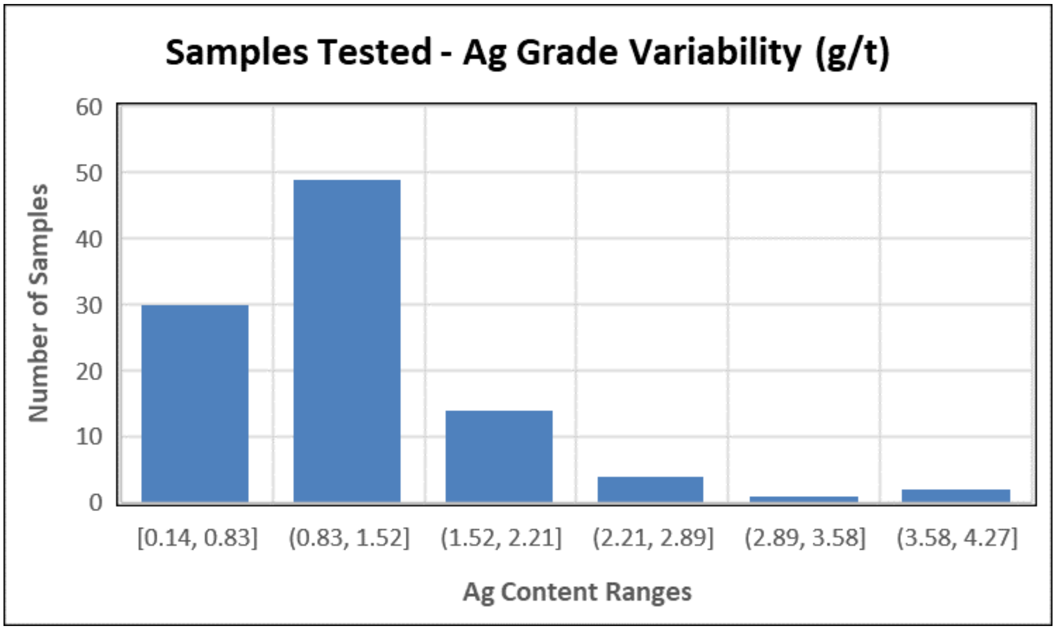
Note: Figure prepared by Wood, 2021.

Figure 10-8: Gold Grade by Alteration Type



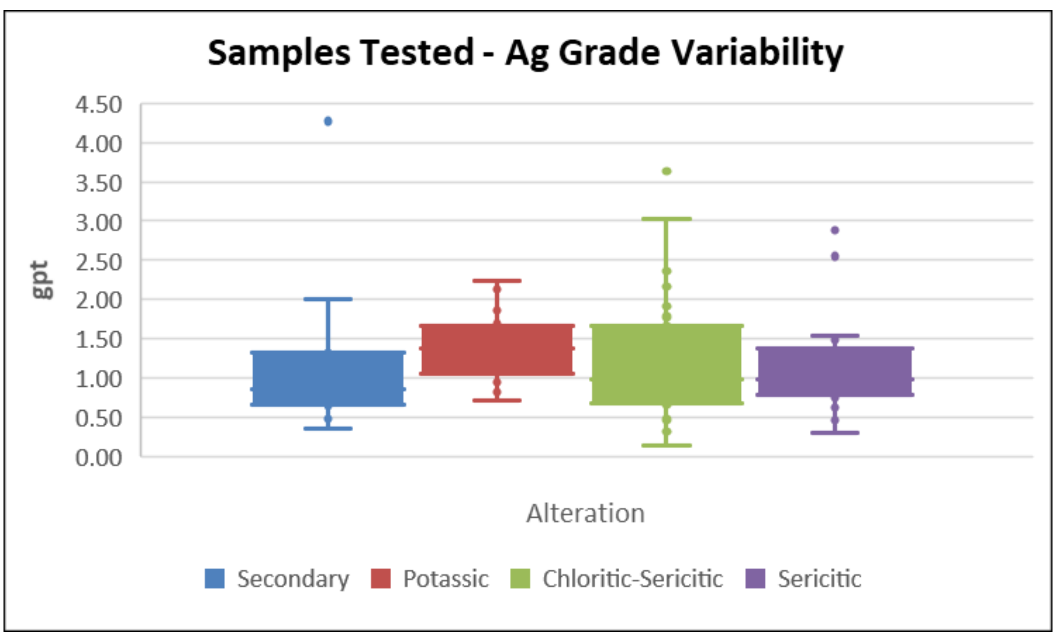
Note: Figure prepared by Wood, 2021.

Figure 10-9: Silver Grade Variability



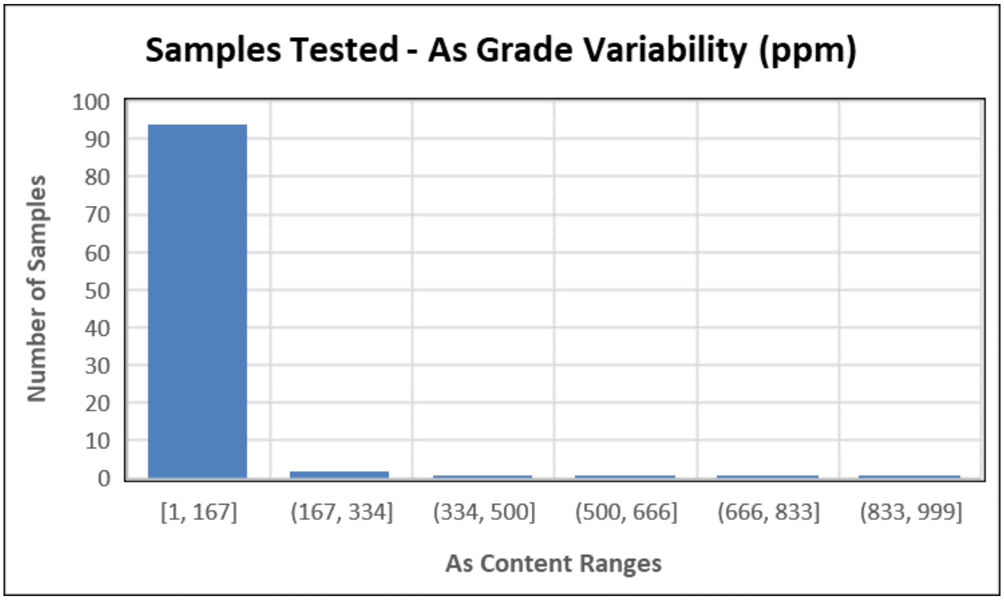
Note: Figure prepared by Wood, 2021.

Figure 10-10:Silver Grade by Alteration Type



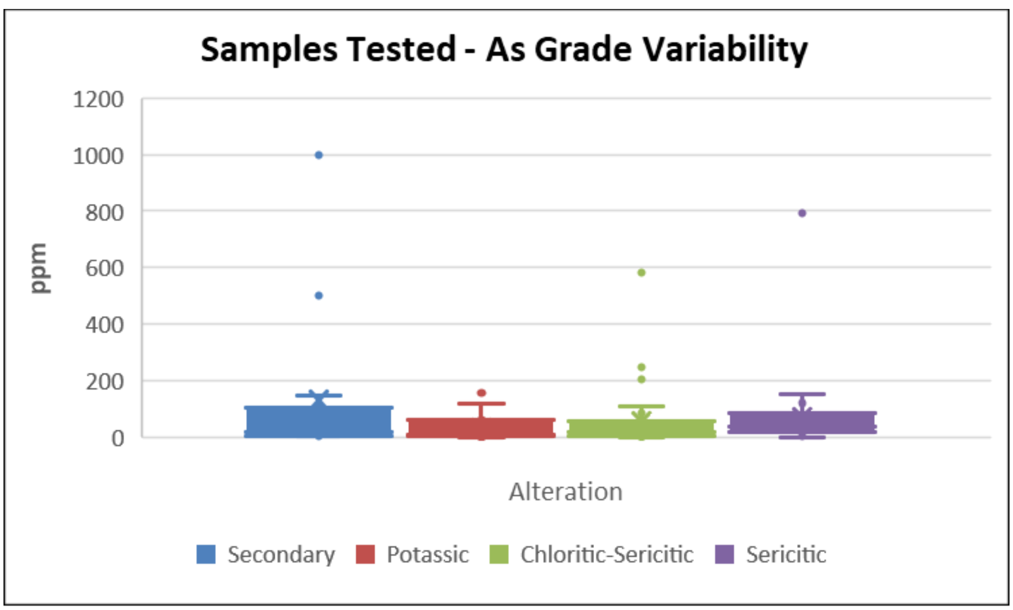
Note: Figure prepared by Wood, 2021.

Figure 10-11:Arsenic Grade Variability



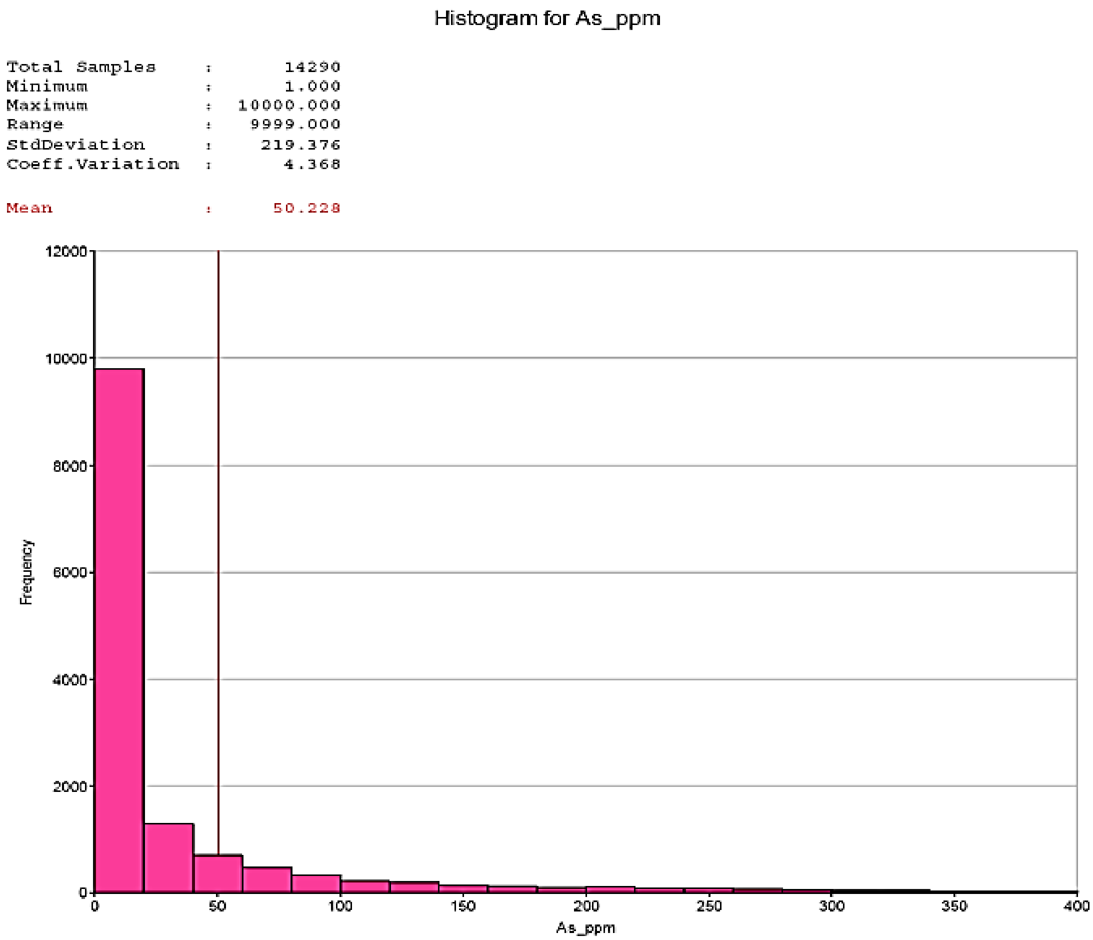
Note: Figure prepared by Wood, 2021.

Figure 10-12:Arsenic Grade by Alteration Type



Note: Figure prepared by Wood, 2021.

Figure 10-13: Arsenic Assay Histogram



Note: Figure prepared by Wood, 2021.

Testing was performed on composite samples representing the main alteration types found in the deposit.

Based on the available information, Wood is unable to assess how representative of the overall deposit the samples used for the testwork are.

The lack of detailed information on the testwork and the unverified quality of the available testwork combine to preclude assigning confidence categories beyond inferred mineral resources.

10.6. Qualified Person's Opinion on Data Adequacy

Testwork was performed on Michiquillay mineralization to support an initial assessment on the potential processing route and metallurgical performance of the mineralization. The testwork data provide an initial indication that mineralization is amenable to flotation to produce a copper concentrate and can be processed in a conventional circuit. The testwork data, however, do not provide a clear understanding of the product quality in respect of the copper content.

Deleterious elements are present in low concentration in the mineralization, and there is no indication that they would adversely affect quality of the concentrate.

Additional testwork is necessary to improve the understanding of the metallurgical performance that would support more meaningful metallurgical projections and support higher mineral resource confidence classifications.

11. MINERAL RESOURCE ESTIMATES

11.1. Introduction

The current mineral resource estimate was prepared by GeoInnova Consultores Ltda Chile (GeoInnova) for Anglo American in 2013. Southern Copper acquired the property in 2018, but has not updated that estimate as no additional drilling has been completed. Wood reviewed the available information on the model in detail.

11.2. Exploratory Data Analysis

Wood completed EDA on assay data and composite data validate the domain definition strategies used by GeoInnova. Wood used histograms, probability plots, box plots, to evaluate assay and composite data for copper, molybdenum, and gold by lithology and mineralized zone.

11.2.1. Assays

Wood examined the histograms of the early quartz porphyry and early feldspathic porphyry, the lithological domains with the higher copper values at Michiquillay and observed that the distributions show a slight inflection around 0.4% Cu for the quartz porphyry, and at 0.7% Cu in feldspathic porphyry. Wood recommended that these domains be separated into more homogeneous areas for better definition of estimation domains.

Wood examined the histograms by zones of mineralization for primary sulfides and observed an almost symmetric distribution in the chalcopyrite-dominant zone and a multimodal distribution in the zone where pyrite is dominant.

Boxplots for lithologies demonstrate that feldspathic porphyries (PF1 and PF2) and early and intermineral quartz porphyries (PQ1 and PQ2) represent around 50% of the deposit and their average copper grade is higher than 0.4%.

11.2.2. Composites

Boxplots of total copper grade by lithology and mineralization zone shows that the copper distribution respects the relationships between lithologies and mineralization zones observed in the grade data. In Wood's opinion the composite methodology is reasonable; however, Wood composited at 15 m which better reflects assumed mining conditions and found that the differences, using swath plots, to be small and not material. Wood does recommend using 7.5 m composites in future models, which are closer to a bench height (15 m) and reduces the risk of creating local biases by using 3 m composites.

Boxplots show much the same as boxplots for assays as composites and samples are the same length.

11.3. Geological Models

The geological model is poorly documented.

Lithology, mineralization, and alteration were modeled as wireframes. The lithology model is based on eight lithologies (Table 11-1). Mineralization was modeled in four zones and cover (glacial deposits). Alteration was modeled using six alteration types and cover (glacial deposits). Lithology and mineralization were used to control the estimation. Alteration was not used to identify estimation domains.

Wood was not provided with any digital wireframes. Instead, Wood was given 10 paper copy cross-sections printed from a digital model. The only data verification that could be performed was to review the geological model by comparing the core intercepts against the interpretations of the geological model in east–west sections and the block model coded with information on lithology, alteration, and zones of mineralization. The comparison demonstrated that the interpretation of lithology, alteration and mineralization was reasonable and adequately reflected the supporting data. Wood noted the occurrence of minor bodies in some sectors of the deposit that are isolated, but these are not considered to be an issue because their impact would be minimal. The sedimentary rocks (CUA) are grouped by various lithological types such as sandstones, limestones, Quaternary deposits, hornfels and skarns, which represent about 30% of the deposit but the average copper grade is <0.2% Cu. The enriched zone has an average grade of 0.94% Cu, but represents only 4% of the deposit.

While the comparison of paper cross-sections to the original data indicates that the geological model is adequate, the fact that the digital wireframes were not provided to Wood is cause for concern because there is no support that the geological model used in the resource estimate is the same geological model from which the paper cross-sections were derived.

Table 11-1: Geological Model Codes

Lithology Code	Lithology Abbreviation	Lithology
101	PQ1	Early quartz porphyry
102	PQ2	Intermineral quartz porphyry
103	PQ3	Late quartz porphyry
104	PF1	Early feldspathic porphyry
105	PF2	Intermineral feldspathic porphyry
106	PF3	Late feldspathic porphyry
107	CUA	Sedimentary rocks
108	COB	Coverage, glacial deposits
Mineralization Code	**Lithology Abbreviation**	**Mineralization**
200	COB	Coverage, glacial deposits
201	LIX	Leached zone
202	ENR	Enriched zone
203	PRICP	Primary zone with chalcopyrite
204	PRIPY	Primary zone with pyrite
Alteration Code	**Lithology Abbreviation**	**Alteration**
300	—	Coverage, glacial deposits
301	—	Argillic
302	—	Sericite
303	—	Sericite–kaolinite
304	—	Sericite–chlorite
305	—	Potassic with over print
306	—	Potassic

Table 11-2: Density Estimation Plan

Element		**Density**					
Estimation domain		2	3	4	5	6	7
Interpolation method		OK	OK	OK	OK	OK	OK
1st rotation in Z		40	40	25	-40	40	40
2nd rotation in Y		6	6	0	0	0	0
3rd rotation in X		0	0	0	0	0	15
First pass	*Ellipsoid Search*	Yes	Yes	Yes	Yes	Yes	Yes
	Range in X	80	120	90	120	110	90
	Range in Y	120	240	120	90	100	110
	Range in Z	100	100	140	140	140	140
	N° Min of composites	4	4	4	4	4	4
	N° Max of Composites	9	9	9	9	9	9
	N° Max composites per hole	3	3	3	3	3	3
	Cut-Off	No	No	No	No	No	No
	High Yield	—	—	—	—	—	—
	Major (X)	—	—	—	—	—	—
	Minor (Y)	—	—	—	—	—	—
	Vert (Z)	—	—	—	—	—	—
Second pass	*Ellipsoid Search*	Yes	Yes	Yes	Yes	Yes	Yes
	Range in X	240	360	250	300	300	270
	Range in Y	360	480	300	270	300	300
	Range in Z	100	200	420	420	420	420
	N° Min of composites	4	4	4	4	4	4
	N° Max of Composites	9	9	9	9	9	9
	N° Max composites per hole	3	3	3	3	3	3
	Cut-Off	No	No	No	No	No	No
	High Yield	—	—	—	—	—	—
	Major (X)	—	—	—	—	—	—
	Minor (Y)	—	—	—	—	—	—
	Vert (Z)	—	—	—	—	—	—

11.4. Density Assignment

Density was generally estimated by ordinary kriging (OK) in two passes in Vulcan (Table 11-2). The estimate honored the estimation domains defined by GeoInnova by combining the zones of mineralization and the types of alterations only in the primary zone. In the supergene zones, the domains are defined only by mineralization zones. For each estimation domain, GeoInnova calculated an omnidirectional variogram with a single structure.

Where blocks were not estimated by OK in two passes, those blocks were assigned the average value of density in the estimation domain.

11.5. Grade Capping/Outlier Restrictions

GeoInnova controlled outliers in composites and estimation domains using high-yield restrictions. This is an outlier restriction applied by Vulcan software, where the use of certain samples that exceed a threshold is limited to a radius smaller than the radius indicated by the estimation pass. The choice of thresholds was made by analyzing the copper distributions in the different domains and considering as extreme values those percentiles 99%, 98% and 95% of the data.

11.6. Estimation Domains

GeoInnova defined estimation domains for total copper by combining the mineralized zones with lithological types (Table 11-3). Similarities in the statistics and the distribution of copper in the deposit were used to control the combinations. Quaternary deposits, the leached and enriched zone were interpolated only considering the mineralization, while the primary zone, mainly with pyrite, was subdivided by the feldspathic and quartz porphyry. Primary sulfide zone material with the highest content of chalcopyrite was split by quartz, feldspathic porphyry and sedimentary rocks including hornfels and skarn for a total of eleven domains to control estimation of copper mineral resource estimation. Wood constructed histograms and boxplots to verify that these domains were valid and concluded that the domains are appropriate to control mineral resource estimation. Contact profiles prepared by Wood indicated that contacts between domains should be hard.

GeoInnova defined similar estimation domains for gold and molybdenum by combining mineralized zones and lithology.

Wood considers the current domains to be reasonable.

Table 11-3: Estimation Domain Codes

Domain Code	Mineralization Code	Mineralization Code	Lithology	Lithology Code
1	Coverage, glacial deposits	200		
2	Leached zone	201		
3	Enriched zone	202		
4	Primary zone with cpy	203	Early feldspathic porphyry	104
5	Primary zone with cpy	203	Intermineral feldspathic porphyry	105
8	Primary zone with cpy	203	Sedimentary rocks	107
9	Primary zone with py	204	Late feldspathic porphyry	106
10	Primary zone with py	204	Late quartz porphyry	103
	Primary zone with cpy	203		
11	Primary zone with py	204	Intermineral feldspathic porphyry	105
			Early feldspathic porphyry	104
13	Primary zone with py	204	Sedimentary rocks	107
6712	Primary zone with cpy	203	Early quartz porphyry	101
	Primary zone with py	204	Intermineral quartz porphyry	102

Note: cpy = chalcopyrite, py = pyrite.

GeoInnova used different domains for density estimation using mineralization and alteration. Those are summarized in Table 11-4.

11.7. Composites

GeoInnova generated 3 m fixed-length composites that ignored geological boundaries.

Approximately 94% of the sample intervals are 3 m long. Intervals that are 1.5 m long comprise 6% of the deposit.

Table 11-4: Density Estimation Domains

Domain Code	Mineralization	Mineralization Code	Alteration	Alteration Code
1	Coverage, glacial deposits	200	—	—
2	Leached zone	201	—	—
3	Enriched zone	202	—	—
4	Primary zone with py	204	Argillic	301
			Potassic	306
			Potassic with overprint	305
	Primary zone with cpy	203	Potassic with overprint	305
5	Primary zone with py	204	Sericite	302
	Primary zone with cpy	203	Sericite	302
			Sericite–chlorite	304
			Sericite–kaolinite	303
			Potassic	306
6	Primary zone with py	204	Sericite–chlorite	304
	Primary zone with cpy	203	Argillic	301
7	Primary zone with py	204	Sericite–kaolinite	303

Note: cpy = chalcopyrite, py = pyrite.

Consequently, the compositing process was done in three stages:

- Drill holes with intervals less than 3 m were composited to 3 m without considering the geological contacts
- Drill holes with 3 m intervals were not composited in order to avoid the smoothing grades
- Drill holes that had lengths greater than 3 m were composited at 3 m without considering geological contacts.

11.8. Variography

GeoInnova used Isatis software to prepared variograms for total copper, molybdenum, and gold in each estimation domain using two structures. The nugget effect was estimated using down-hole variograms. Results for total copper are summarized in Table 11-5.

Wood prepared total copper variograms for Domains 4 and 11. The Wood variograms differ in their rotations, ranges, and nugget effect. Wood was not able to reproduce the GeoInnova variograms and recommended that all variograms be re-evaluated before the next mineral resource estimate.

GeoInnova prepared similar variograms for density.

11.9. Estimation/interpolation Methods

The block model uses 20 x 20 x 15 m blocks. GeoInnova used OK to estimate total copper in all 10 domains using Vulcan. GeoInnova used four passes with anisotropic ellipsoidal search ranges summarized in Table 11-6. High-yield restrictions on high-grade samples were applied in passes two or three.

GeoInnova estimated gold and molybdenum using OK with anisotropic ellipsoidal searches. Gold and molybdenum estimates were performed using ordinary kriging, where the search radii are ellipsoidal anisotropic in all passes, in general with expansion factors between one pass. and another. Estimation strategies were similar to that for total copper (Table 11-6). Total copper required four passes but gold and molybdenum required three passes for the estimates. Outliers were restricted using Vulcan software. Restriction thresholds were selected by analyzing the gold and molybdenum distributions in the different domains.

11.10. Validation

Wood validated the mineral resource estimate using visual methods and by evaluating global and local bias.

Visual validation compares block grades to composite grades on sections and levels. Wood concluded that all estimation domains compare reasonably with composite data.

Table 11-5: Variograms for CuT by Domain

Domain		1	2	3	4	5	6712	8	9	10	11	13	4	11
Mineral code		200	201	202	203	203	203–204	203	204	204–203	204	204	203	204
Lithology code		—	—	—	104	105	101–102	107	106	103	104–105	107	104	104–105
1st rotation in Z		0	0	-15	25	0	70	0	0	0	25	30	0	10
2nd rotation in Y		0	0	0	0	0	0	0	0	0	0	0	90	-40
3rd rotation in X		0	0	0	0	0	0	0	0	0	0	0	-60	0
Nugget		0.85	0	0.13	0.03	0.1	0.01	0.38	0.005	0.11	0.01	0.02	0.25	0.15
1st Structure	Model type	Spherical	Spherical	Spherical	Spherical	Spherical	Exponential	Spherical	Spherical	Exponential	Exponential	Spherical	Spherical	Spherical
	Major (X)	60	60	440	290	40	40	110	350	55	240	700	25	580
	Minor (Y)	60	60	150	600	40	40	110	350	55	1,000	450	77	500
	Vert (Z)	60	60	140	90	40	40	110	350	55	65	800	21	420
	Sill	0.11	0	0.15	0.02	0.55	0.02	0.47	0.02	0.45	0	0.05	0.01	0.85
2nd Structure	Model type	—	Spherical	Spherical	Spherical	Spherical	Spherical	Spherical	—	Spherical	Spherical	Spherical	Spherical	—
	Major (X)	—	290	5,000	290	320	1,200	30	—	550	280	2,000	96	—
	Minor (Y)	—	290	370	670	320	250	30	—	550	800	400	202	—

Domain		1	2	3	4	5	6712	8	9	10	11	13	4	11
	Vert (Z)	—	290	140	90	320	500	30	—	550	350	600	129	—
	Sill	—	0	0.22	0.04	0.35	0.04	0.15	—	0.44	0.02	0.03	0.74	—
3rd Structure	Model type	—	—	—	Spherical	—	Spherical	—	—	—	Spherical	—	—	—
	Major (X)	—	—	—	2,000	—	120	—	—	—	280	—	—	—
	Minor (Y)	—	—	—	700	—	280	—	—	—	3,000	—	—	—
	Vert (Z)	—	—	—	10,000	—	350	—	—	—	10,000	—	—	—
	Sill	—	—	—	0.05	—	0.02	—	—	—	0.03	—	—	—

Table 11-6: CuT Estimation Strategy

Element/Estimation Domain		CuT										
		1	**2**	**3**	**4**	**5**	**6712**	**8**	**9**	**10**	**11**	**13**
Interpolation method		OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
1st rotation in Z		40	-25	-15	25	-40	-20	40	20	20	40	40
2nd rotation in Y		8	6	6	0	0	0	0	0	0	0	0
3rd rotation in X		0	0	0	0	0	0	0	0	0	0	0
1st pass	Ellipsoid search	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Range in X	110	130	120	80	100	100	110	120	80	80	80
	Range in Y	70	90	80	110	90	90	90	100	100	100	120
	Range in Z	50	50	40	130	60	120	130	120	130	120	60
	N° min of composites	7	7	7	7	7	7	7	7	7	7	7
	N° max of composites	12	12	12	12	12	12	12	12	12	12	12
	N° max composites per hole	5	5	5	5	5	5	5	5	5	5	5
	Cut-off	No	No	Yes	No	No	No	No	No	No	No	No
	High yield	—	—	3	—	—	—	—	—	—	—	—
	Major (X)	—	—	50	—	—	—	—	—	—	—	—
	Minor (Y)	—	—	50	—	—	—	—	—	—	—	—
	Vert (Z)	—	—	20	—	—	—	—	—	—	—	—

Element/Estimation Domain		CuT										
		1	2	3	4	5	6712	8	9	10	11	13
2nd pass	Ellipsoid search	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Range in X	220	260	180	160	200	200	220	240	160	160	160
	Range in Y	140	180	120	220	180	200	180	200	200	200	160
	Range in Z	100	100	60	220	120	200	260	200	200	200	200
	N° min of composites	7	7	7	7	7	7	7	7	7	7	7
	N° max of composites	12	12	12	12	12	12	12	12	12	12	12
	N° max composites per hole	5	5	5	5	5	5	5	5	5	5	5
	Cut-off	No	No	Yes	No	No	No	No	Yes	No	No	Yes
	High yield	—	—	3	—	—	—	—	0.5	—	—	1
	Major (X)	—	—	50	—	—	—	—	60	—	—	50
	Minor (Y)	—	—	50	—	—	—	—	60	—	—	50
	Vert (Z)	—	—	20	—	—	—	—	40	—	—	50
3rd pass	Ellipsoid search	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Range in X	440	520	360	320	440	480	480	480	320	320	320
	Range in Y	280	360	240	440	440	400	360	400	480	480	480
	Range in Z	200	200	120	200	280	280	270	300	240	240	300
	N° min of composites	4	5	5	5	5	5	5	5	5	5	5

Element/Estimation Domain		CuT										
		1	2	3	4	5	6712	8	9	10	11	13
	N° max of composites	12	12	12	12	12	12	12	12	12	12	12
	N° max composites per hole	4	4	4	4	4	4	4	4	4	4	4
	Cut-off	No	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes
	High yield	—	0.1	3	—	1	—	1.36	0.25	—	0.6	0.3
	Major (X)	—	120	50	—	60	—	50	50	—	50	40
	Minor (Y)	—	80	50	—	80	—	50	50	—	60	50
	Vert (Z)	—	50	20	—	50	—	30	30	—	40	30
4th pass	Ellipsoid search	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Range in X	880	1,040	720	640	880	960	960	960	640	640	640
	Range in Y	560	720	480	880	880	800	720	800	960	960	960
	Range in Z	400	400	240	400	560	560	480	480	480	480	480
	N° min of composites	3	3	3	3	3	3	3	3	3	3	3
	N° max of composites	12	12	12	12	12	12	12	12	12	12	12
	N° max composites per hole	2	2	2	2	2	2	2	2	2	2	2
	Cut-off	No	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes
	High yield	—	0.09	3	—	0.5	—	0.6	0.2	—	0.5	0.25
	Major (X)	—	120	50	—	60	—	50	50	—	50	40

Element/Estimation Domain	CuT										
	1	**2**	**3**	**4**	**5**	**6712**	**8**	**9**	**10**	**11**	**13**
Minor (Y)	—	80	50	—	80	—	50	50	—	60	50
Vert (Z)	—	50	20	—	50	—	30	30	—	40	30

Global bias was evaluated by comparing the OK estimate to a nearest neighbor estimate. A global bias >5% is considered to be high in the context of a porphyry deposit. Two domains that comprise about 40% of the deposit show biases >10%; however, total copper grades in those two domains are typically <0.2% CuT. Wood concluded that the global bias could be improved, especially in the domains of greatest economic interest. Four of 11 domains show biases of between >5% and<10% and two domains have biases of >10%. The domain that includes glacial deposits shows a bias of 62%; however, that result is not considered relevant because glacial rocks are not mineralized. Wood recommends that the estimate be reviewed and the reasons for the biases in specific domains are identified and mitigated so as to improve the estimate.

Local bias was evaluated using swath plots prepared in the north–south and east–west directions, and horizontally. Wood concluded that, in general, local bias was reasonable. Domain 11 exhibited a local bias that is potentially a concern; however, Wood accepted the result for the purposes of this Report, but recommends that the bias be reviewed in the next mineral resource estimate update.

11.11. Confidence Classification of Mineral Resource Estimate

11.11.1. Mineral Resource Confidence Classification

GeoInnova used a form of drill spacing evaluation to classify the mineral resources. The total copper variograms were reviewed, and showed copper grade continuities over distances of >200 m. Grade data is provided by sub-vertical drill holes, and similar grade trends were evident in the variograms. GeoInnova selected a drill spacing of 150 m as the separator between whether a block was classified as inferred or indicated. The 150 m distance equated to 70% of the variogram variance.

Blocks with a drill spacing <150 m were assigned an indicated classification, and blocks with a drill spacing of >150 m were classified as inferred.

The resource classification used by GeoInnova in 2013 resulted in 10% of the blocks being classified as indicated mineral resources.

11.11.2. Uncertainties Considered During Confidence Classification

Following GeoInnova's initial resource classification in Chapter 11.11.1 that classified the mineral resource estimates into the indicated and inferred confidence categories, uncertainties regarding sampling and drilling methods, data processing and handling, geological modelling, and estimation were incorporated into the classifications assigned.

Wood reclassified all of the mineral resources as inferred because of global and local biases within some estimation domains, weaknesses in the estimation plan and the patchy nature of areas with sufficient drill density to classify indicated mineral resources.

Wood also noted that of the 101 drill holes in the database, only 53 were used in the mineral resource estimate.

In addition, when considering technical and economic factors, the downgrade of the indicated classification was supported by the uncertainty surrounding the metallurgical testwork (see discussion in Chapter 10.6).

11.12. Reasonable Prospects of Economic Extraction

11.12.1. Initial Assessment Assumptions

To meet the content requirements of an Initial Assessment to support Mineral Resource estimates, Wood evaluated the content requirements set out in Table 1 of §229.1302 (Item 1302) "Qualified person, technical report summary, and technical studies". The assumptions used by Wood in support of the Initial Assessment are summarized in Table 11-7.

11.12.2. Input Assumptions Used to Constrain the Mineral Resource Estimates

The resource pit optimization analysis was performed using the Lerchs-Grossmann algorithm using the GEOVIA Whittle (Whittle) software. The algorithm uses commodity prices, metal grades, resource classification, process recoveries, sales costs, refining costs, royalties, and smelter terms, along with slope configurations. Only copper was used for the optimization.

Benchmarks, information from a recently-completed study for Southern Copper's Los Chancas project (M3, 2020) and commercial terms provided by Southern Copper (2021) support the economic parameters used in the pit optimization for the Michiquillay deposit. Metallurgical recoveries were compiled from past studies and reports. An average copper recovery of 85.4% was used. Table 11-8 summarizes the primary inputs applied in the pit optimization.

The optimization run was completed using the inferred copper mineral resources to define the optimal mining limits. The mineral resource block model does not have any blocks with measured or indicated material.

Table 11-7: Initial Assessment Assumptions

Factors	Initial Assessment Requirement	Michiquillay
Site infrastructure	Establish whether or not access to power and site is possible. Assume infrastructure location, plant area required, type of power supply, site access roads, and camp/town site, if required.	All-season access road in place. Power can be sourced from Peruvian grid. Site location reviewed to ensure that key infrastructure can be located within the mining tenure held. Assumed on-site operations/construction camp.
Mine design & planning.	Mining method defined broadly as surface or underground. Production rates assumed.	Assumed open pit mining method
Processing plant	Establish that all products used in assessing prospects of economic extraction can be processed with methods consistent with each other. Processing method and plant throughput assumed.	The only commodity in the mineral resource estimate is copper; therefore, the requirement that "products reported in the mineral resource statement can be processed with methods consistent with each other" is met. Assumed 100,000 t/d throughput. Assumed conventional flotation technology for sulfide mineralization.
Environmental compliance & permitting.	List of required permits & agencies drawn. Determine if significant obstacles exist to obtaining permits. Identify pre-mining land uses. Assess requirements for baseline studies. Assume post-mining land uses. Assume tailings disposal, reclamation, and mitigation plans.	Preliminary list of permits and agencies compiled by Southern Copper. Risk matrix compiled by Southern Copper. Pre-existing land use is restricted to small areas of cultivation or grazing. Aspects requiring baseline studies determined by Southern Copper. Post-mining land use is assumed to be grazing. Assumed dry stack or co-disposal of tailings and waste rock. Reclamation and mitigation plans assumed based on prior Southern Copper experience in Peru.
Other relevant factors.	Appropriate assessments of other reasonably assumed technical and economic factors necessary to demonstrate reasonable prospects for economic extraction.	Mineral resource estimates confined within conceptual pit shell.
Capital costs	Optional. If included: Accuracy: ±50%. Contingency: ±25%.	Not relevant to this Report.
Operating costs	Optional. If included: Accuracy: ±50%. Contingency: ±25%.	Not relevant to this Report.
Economic	Optional. If included: Taxes and revenues are	Not relevant to this Report.

Factors	Initial Assessment Requirement	Michiquillay
analysis	assumed. Discounted cash flow analysis based on assumed production rates and revenues from available measured and indicated mineral resources	

Table 11-8: Pit Optimization Parameters

Parameter	Units	Value
Metal Price		
Copper	US$/lb.	3.80
Discount rate	%	10
Mining Parameters		
Base mining cost	US$/t mined	1.7
Incremental haulage cost	US$/t mined	0.018
Processing Parameters		
Processing rate	t/day	100,000
Process Cost		
Process	US$/t	5.82
Metallurgical Recoveries		
Copper	%	85.4
G&A cost	US$/t processed	1.12
Geotechnical Parameters		
All material types: default	degrees	38
Moraine/glacial till (to 50 m)	degrees	34
Concentrates		
Moisture	%	8
Grade copper concentrate	%	28
Concentrate losses	%	0.5
Treatment & Refining Cost		
Treatment	US$/t con dry	90.00
Refining Cost		
Copper	US$/lb. payable Cu.	0.09
Payable Metal		

Parameter	Units	Value
Copper	%	96.5
Concentrate Sales Cost		
Trucking	US$/wmt con	32.00
Port	US$/wmt con	23.21
Ocean freight	US$/wmt con	91.50
Total	US$/wmt con	146.71
Royalty		
Government/communities royalty (payable to Activos Mineros)	%NSR	3
Government royalty (minimum Modified Mining Royalty payable)	%NSR	1

The break-even pit shell used a copper price of US$3.45/lb, which equates to a copper price at US$3.80/lb and a revenue factor 0.908 pit.

Material considered to meet reasonable prospects for economic extraction had an NSR value higher than the operating costs, including process and mining costs, giving a block value higher than 0. Marginal material had an NSR value that covered the process costs only (including process, G&A, closure, and sustaining capital cost), but excluded the mining cost. Where the marginal costs are lower than the revenues that may be received by processing the block, it may be more economical to send a marginal block to process than to the waste rock storage facility.

Additional studies are needed to evaluate the opportunity cost to be considered when deciding to send marginal material to process (low-grade blocks may be displacing or delaying the processing of higher grade, more profitable blocks).

The geotechnical sectors used for pit slopes were sourced from a study completed by Anglo American in 2013. A default overall pit slope angle of 38º was used for all material types in the model except for isolated areas of moraine/glacial till materials where the slope angle was reduced to 34º.

Wood considers those blocks with a revenue factor ≥1 to demonstrate reasonable prospects for economic extraction

11.12.3. Commodity Price

Commodity prices used in resource estimation were based on long-term mining analysts and investment bank forecasts, supplemented by Wood's assessment of mining industry consensus of long term metal prices. The estimated timeframe used for the price forecasts is 20 years, which is considered reasonable time frame over which the Michiquillay deposit could be developed and mined.

11.12.3.1. Market Overview

Southern Copper provided Wood with an overview of the copper market as sourced from third-party experts, Wood Mackenzie, which was dated June, 2021. The report provided information on the copper market out to 2040, and covered information such as copper price forecasts, scenario modelling, demand in detail, and supply in detail.

These data support that there is a reasonable basis to assume that the key products will be saleable at the assumed commodity pricing.

11.12.3.2. Market Strategy

Southern Copper employs a corporate strategy that is in line with the company's marketing experience, and experience with obtaining long-term contracts with strategic business partners in the Asian and European markets, as well as annual contracts with other active market participants. This approach would be used to market any concentrate or cathode production from the Project.

Depending on concentrate quality, Southern Copper's concentrates are currently primarily sold onto Asian or European market. Cathode copper produced by Southern Copper's existing operations is sold onto the Asian, European, Brazilian and/or North American markets. These markets would be the primary destination of any concentrate and cathode production from the Michiquillay Project.

11.12.3.3. Commodity Pricing

To establish the copper price forecasts Wood used a combination of information derived from 22 financial institutions, from pricing used in technical reports filed with Canadian regulatory authorities over the previous 12-month period, from pricing reported by major mining companies in public filings such as annual reports in the previous 12-month period, spot pricing, and three-year trailing average pricing.

Wood considers that a long-term price forecast of US$3.30/lb Cu is reasonable.

It is in accordance with industry-accepted practice to use higher metal prices for the mineral resource estimates than the pricing used for mineral reserves. The copper price forecast of US$3.30/lb was increased by 15% to provide the mineral resource estimate copper price estimate of US$3.80/lb.

The assumed exchange rate was US$1.00 = PENS/3.60. This exchange rate was provided by Southern Copper.

11.12.4. Cut-off

Wood calculated NSR values for each block based on the smelter terms shown in Table 11-8 The marginal cut-off is determined at the pit rim. Mined material is considered for processing if the mineralization contains a value that is greater than the costs to process it, i.e., is above the marginal cut-off. Mined material with less value than the marginal cut-off at the pit rim would be sent to the WRSF. The resulting marginal NSR value was $6.94/t (process and G&A only). Wood elected to use a cut-off grade of 0.1% Cu when reporting mineral resource estimates.

Wood considers those blocks within the constraining resource pit shell and above the cut-off applied to have reasonable prospects for economic extraction.

11.12.5. QP Statement

Wood is of the opinion that any issues that arise in relation to relevant technical and economic factors likely to influence the prospect of economic extraction can be resolved with additional work. Porphyry-copper style deposits are a well-known and studied deposit type, and Southern Copper has experience with mining operations that exploit these types of deposit.

There is sufficient time before a final decision is made to develop the Project for Southern Copper to address any issues that may arise, or perform appropriate additional drilling, testwork and engineering studies to mitigate identified issues with the estimates.

11.13. Mineral Resource Estimate

11.13.1. Mineral Resource Statement

Mineral resources are reported using the mineral resource definitions set out in SK1300. The reference point for the estimate is in situ. The inferred mineral resource estimates for the Michiquillay Project are provided in Table 11-9. Wood is the QP Firm responsible for the estimate.

11.13.2. Uncertainties (Factors) That May Affect the Mineral Resource Estimate

Areas of uncertainty that may materially impact all of the mineral resource estimates include:

- Changes to long-term metal price and exchange rate assumptions
- Changes in local interpretations of mineralization geometry such as presence of unrecognized mineralization off-shoots; faults, dikes and other structures; and continuity of mineralized zones
- Changes to geological and grade shape, and geological and grade continuity assumptions
- Changes to metallurgical recovery assumptions
- Changes to the input assumptions used to derive the conceptual open pit shell that is used to constrain the estimates
- Changes to the cut-off values applied to the estimates
- Variations in geotechnical (including seismicity), hydrogeological and mining assumptions
- Changes to environmental, permitting and social license assumptions.

Table 11-9: Inferred Mineral Resource Statement

Resources	Tonnage (Mt)	Copper Grade (%)	Contained Copper (M lb)
Inferred	2,288	0.43	21,554.82

Notes to Accompany Mineral Resource Tables

1. Mineral resources are reported as in situ, and are current as at December 31, 2021. Mineral resources are not mineral reserves and do not have demonstrated economic viability. Wood is the QP Firm responsible for the estimate.
2. Mineral resources are reported within a conceptual pit shell that uses the following input parameters: metal prices of US$3.80/lb Cu; copper metallurgical recovery assumptions of 85.4%; base mining costs of US$1.70/t; mill process operating costs of US$5.82/t, general and administrative costs of US$1.12/t; variable pit slope angles that vary from 34–38º. Mineral resources are reported above a cut-off grade of 0.1% Cu.
3. Numbers in the table have been rounded. Totals may not sum due to rounding.

Specific factors that may affect the estimates include:

- The lack of density data in the host rock is a potential risk to the optimization results and Wood recommends that Southern Copper complete density investigations to support future studies
- Lack of supporting documentation for surveying of collar locations and downhole surveys add uncertainty to the quality of these data
- The absence of assay certificates for the 2009 drill program is a risk because the integrity of the data of this program, which represents a considerable percentage of the database, cannot be verified
- Use of paper copies of the geological model rather than digital 3D solids and/or polygons is not adequate verification for a large, complex model
- Interpolation with a minimum of seven composites, a maximum of 12 and a maximum per borehole of five composites (in effect using 2–3 drill holes on average to estimate a block) has a risk of a local inaccuracy of the estimate, which in turn was reflected in a global bias outside the tolerance range of 5% that the industry considers the maximum.

12. MINERAL RESERVE ESTIMATES

This chapter is not relevant to this Report.

13. MINING METHODS

This chapter is not relevant to this Report.

14. PROCESSING AND RECOVERY METHODS

This chapter is not relevant to this Report.

15. INFRASTRUCTURE

This chapter is not relevant to this Report.

16. MARKET STUDIES

This chapter is not relevant to this Report.

17. ENVIRONMENTAL STUDIES, PERMITTING, AND PLANS, NEGOTIATIONS, OR AGREEMENTS WITH LOCAL INDIVIDUALS OR GROUPS

This chapter is not relevant to this Report.

18. CAPITAL AND OPERATING COSTS

This chapter is not relevant to this Report.

19. ECONOMIC ANALYSIS

This chapter is not relevant to this Report.

20. ADJACENT PROPERTIES

This chapter is not relevant to this Report.

21. OTHER RELEVANT DATA AND INFORMATION

This chapter is not relevant to this Report.

22. INTERPRETATION AND CONCLUSIONS

22.1. Introduction

Wood notes the following interpretations and conclusions, based on the review of data available for this Report.

22.2. Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

On June 12, 2018, Southern Copper and Activos Mineros entered into the Agreement whereby the following assets were transferred from Activos Mineros to Southern Copper: 18 mining concessions; eight surface land parcels; Project data; and drill core.

The transfer was effective upon signing of the Agreement, such that Southern Copper is the current legal owner of the transferred assets.

Southern Copper has paid US$25 million of the amount required under the Agreement. The US$375 million balance is secured by a legal mortgage.

In addition to the payments under the Agreement, Activos Mineros is entitled to a 3% contractual royalty over the net annual income accruing from the sale of the metals produced from the minerals extracted from the concessions.

The Michiquillay Project consists of 18 mining concessions with a total area of 4,051.4 ha.

The Michiquillay deposit is located on lands of the Michiquillay Rural Community and the Encañada Rural Community. Southern Copper has signed surface land use agreements with both communities. These agreements allow Southern Copper to conduct exploration activities.

Permits for the use of water for exploration purposes are currently being processed by the National Water Authority and the Marañon Local Authority.

A mining royalty is payable to the Government of Peru, based on operating income margins with graduated rates ranging from 1–12% of operating profits. There is also a mining tax payable, based on operating income, with rates that range from 2–8.4%.

The mining concessions are also subject the 3% NSR contractual royalty.

A number of baseline studies were completed in support of the EIAsd process including: geomorphology; air quality; noise; soil quality; surface water quality; river sediments; the effects of vibration on structures; flora surveys; terrestrial fauna surveys; and aquatic fauna surveys.

An EIAsd and subsequent amendment were completed by Anglo American in 2009 and 2013, respectively. Southern Copper obtained the approval of its EIAsd in October, 2021.

Four archaeological sites are within the conceptual open pit boundary. In late 2021, one of the sites was reclassified as having no significant archaeological importance. Southern Copper will be required to obtain a CIRA before starting activities that could disturb any of the sites. If it is absolutely necessary to locate infrastructure over an archaeological site, Southern Copper must obtain authorization from the Ministry of Culture to clear the area of archaeological remains before starting proposed activities.

An Environmental Management Plan was developed as part of the 2021 EIAsd. Southern Copper committed to regular sampling and monitoring at selected points as part of the EIAsd. The closure plan developed for the EIAsd that covers exploration activities is conceptual, and covers temporary, progressive and final closure.

Southern Copper is preparing the documents required to file for a Mining Exploration Initiation Authorization before the Mining Affairs Bureau of the Ministry of Energy and Mines.

Southern Copper has identified the key permits that would be required for any future exploration activities.

22.3. Geology and Mineralization

The Michiquillay deposit is considered to be an example of a porphyry copper–molybdenum–gold deposit.

The geological understanding of the settings, lithologies, and structural and alteration controls on mineralization is sufficient to support estimation of mineral resources.

22.4. Exploration, Drilling, and Sampling

The exploration programs completed to date are appropriate for the deposit style.

Drilling totals 260 core holes (18,700 m). A total of 53 core holes (71,968 m) from the 2009–2012 drill campaign supports mineral resource estimation.

No explanation was available to Wood as to why certain drill holes from the 2009–2012 campaigns were excluded from the mineral resource estimate. Some holes may have been excluded as they were completed after the June 2012 database closeout date; however, other drill holes completed prior to that date are also excluded from estimation support. Any future mineral resource update should include a reassessment of all drilling and suitability of data to support estimation. It is likely that such an update will be based on more drill holes than the current estimate.

Drill hole spacing varies from approximately 60–100 m in the better drilled deposit areas to about 200 m spacing on the less well drilled portions of the deposit.

The term “true thickness” is not generally applicable to porphyry-style deposits as the entire rock mass is potentially mineralized and there is often no preferred orientation to the mineralization. In areas that display porphyry-style mineralization, in general, most drill holes intersect mineralized zones at an angle, and the drill hole intercept widths reported for those drill holes are typically greater than the true widths of the mineralization at the drill intercept point.

Core samples were typically sampled on 3 m intervals, ignoring geological boundaries, but there are a number of intervals that were sampled on 1.5 m intervals.

There are 1,274 density data at Michiquillay, determined by ALS Minerals using a wax-coated water immersion method.

The sample preparation, analysis, quality control, and security procedures are acceptable for mineral resource estimation. The sample preparation, analysis, quality control, and security procedures are sufficient to provide reasonably reliable data to support estimation of mineral resources.

22.5. Data Verification

Data verification performed by Wood included site visits, a review of 30% of the data in the Project data, and checks by subject matter experts.

Based on the data made available, Wood considers that a reasonable level of verification has been completed, and that no material issues would have been left unidentified from the programs undertaken. The data are suitable for use in mineral resource estimation.

22.6. Metallurgical Testwork

Metallurgical testwork was conducted by a number of independent testwork facilities.

Testwork completed included comminution (SMC a x b breakage parameters and Bond work index tests); evaluations of grindability test results and grinding system designs; primary flotation testwork; and whole ore cyanidation.

The testwork data provide an initial indication that mineralization is amenable to flotation to produce a copper concentrate and can be processed in a conventional circuit. The testwork data, however, do not provide a clear understanding of the product quality in respect of the copper content.

Recovery forecasts were projected by alteration type. The average copper recovery across all types was predicted to be 85.4%.

Testing was performed on composite samples representing the main alteration types found in the deposit. Based on the available information, Wood is unable to assess how representative of the deposit the samples used for the testwork are.

Deleterious elements are present in low concentration in the mineralization, and there is no indication that they would adversely affect quality of the concentrate

22.7. Mineral Resource Estimates

The mineral resource estimate is reported using the definitions set out in SK1300. The reference point for the estimate is in situ. The estimate is based on core drilling.

GeoInnova classified blocks with a drill spacing <150 m as indicated, and blocks with a drill spacing of >150 m were classified as inferred.

Wood reclassified all of the mineral resources as inferred because of global and local biases within some estimation domains, weaknesses in the estimation plan and the patchy nature of areas with sufficient drill density to classify indicated mineral resources.

Wood also noted that of the 101 drill holes in the database, only 53 were used in the mineral resource estimate.

In addition, when considering technical and economic factors, the downgrade of the indicated classification was supported by the uncertainty surrounding the metallurgical testwork

Areas of uncertainty that may materially impact all of the mineral resource estimates include: changes to long-term metal price and exchange rate assumptions; changes in local interpretations of mineralization geometry such as presence of unrecognized mineralization off-shoots; faults, dikes and other structures; and continuity of mineralized zones; changes to geological and grade shape, and geological and grade continuity assumptions; changes to metallurgical recovery assumptions; changes to the input assumptions used to derive the conceptual open pit shell that is used to constrain the estimates; changes to the cut-off values applied to the estimates; variations in geotechnical (including seismicity), hydrogeological and mining assumptions; and changes to environmental, permitting and social license assumptions.

Specific factors that may affect the estimates include:

- The lack of density data in the host rock is a potential risk to the optimization results and Wood recommends that Southern Copper complete density investigations to support future studies
- Lack of supporting documentation for surveying of collar locations and downhole surveys add uncertainty to the quality of these data
- The absence of assay certificates for the 2009 drill program is a risk because the integrity of the data of this program, which represents a considerable percentage of the database, cannot be verified
- Use of paper copies of the geological model rather than digital 3D solids and/or polygons is not adequate verification for a large, complex model
- The 3 m composites represent a risk that local precision of the estimate may suffer because of the lack of proportionality with respect to the height of the blocks and bench heights
- Interpolation with a minimum of seven composites, a maximum of 12 and a maximum per borehole of five composites (in effect using 2–3 drill holes on average to estimate a block) has a risk of a local inaccuracy of the estimate, which in turn was reflected in a global bias outside the tolerance range of 5% that the industry considers the maximum

22.8. Risks and Opportunities

Risks to the mineral resource estimate were summarized in Chapter 22.7.

22.8.1. Risks

Other risks that could affect proposed Project development and the resource estimate include the following.

As part of the application for the EIAsd, completed archaeological surveys identified a number of archaeological sites within the Project area. Southern Copper will be required to obtain a Certificate of Non-Existence of Archaeological Remains (CIRA) as part of any more detailed activities. Alternatively, Southern Copper will need to obtain authorization from the Ministry of Culture to clear the area of archaeological remains (*rescate arqueológico)* before starting proposed activities that may disturb the archaeological sites. If the sites are found to be of significance, there is a risk that the conceptual open pit as envisaged in this Report would require modification. There is also a risk that the conceptual project infrastructure locations that were assumed in the Initial Assessment would not be able to be constructed where provisionally envisaged, and additional studies would be required.

As with any large mining project in Peru, the Michiquillay Project is subject to certain risks, including:

- Potential social conflicts based on negative community or regulatory perceptions. These could include unfulfilled expectations, new leadership with new ideas as to how agreements should be concluded, differing ideas of appropriate compensation, or changes in the community boundaries
- Agreements with communities are not respected and local communities make major additional demands for social investment or other considerations not covered by the agreements
- Governmental changes to mining policies and mining regulations
- Non-governmental organizations that promote an anti-mining culture.

22.8.2. Opportunities

Opportunities for the Michiquillay Project include:

- Higher metal prices than forecast could present upside opportunities
- Slightly more tonnage may be able to be estimated due to the possible underestimation of specific gravity values
- An increase of the insertion rate of standards in the analysis batches to 6% (Wood's recommended practice) will improve confidence in the accuracy of the assays which translates to improved confidence in estimated grades
- It may be possible to reconstruct the geological model using the existing geological sections which will save significant time and money over starting from first principles
- Use of 7.5 m composites (½ bench height) will improve precision of the estimation by maintaining proportionality and will reduce the local bases noted in the current model

- There are 44 drill holes from the 2009–2012 drill campaigns that were not used for mineral resource estimation. Use of those drill holes will likely improve confidence in the estimate.

22.9. Conclusions

Under the assumptions presented in this Report, the Michiquillay Project represents a substantial mineral resource that warrants technical evaluation and mining studies.

Additional work is warranted on the Project to upgrade the mineral resource confidence categories.

23. RECOMMENDATIONS

23.1. Introduction

The recommended work programs total US$11.8–US$14.4 M.

23.2. Geology

The database does not contain data from any programs that were completed prior to Anglo American's Project interest. Wood is aware of at least another 200 drill holes from surface and underground drill stations, as well as nearly 2 km of underground development that has been sampled on at least one rib. None of this information is in the database and should be compiled.

A 14,000 m twin-hole drill program should be conducted to verify pre-Anglo American data to confirm the location and grade of mineralization. The drill holes should be drilled as closely as possible to the original drill hole location dips and azimuths. All drill holes should be oriented to provide structural data, using modern core orientation tools. The drill holes should be surveyed using borehole televiewer surveys. The program should include appropriate QA/QC protocols.

A re-survey program to locate all drill collars still visible in the field should be completed.

A downhole survey program should be conducted on all drill holes that are still open, and can be surveyed.

The lack of density data in the host rock is a potential risk to the pit optimization results and density determinations should be completed on available drill core, and on the core generated during the twin hole program.

A budget estimate for this work, assuming an all-in drilling cost of US$250/m for oriented core, is about US$5–US$6 M.

23.3. Geotechnical

The oriented core from the proposed twin-hole drill program should be logged for geotechnical parameters to provide quantitative geotechnical data to support analyses and pit slope designs. Samples should be collected for geomechanical tests such as point load tests.

Costs for this program are included in the cost estimate in Chapter 23.2.

23.4. Mineral Resource Estimates

Once the geology program outlined in Chapter 23.2 is complete, the geological interpretations and geological model should be updated, as should alteration, structural and mineralization interpretations and models.

Mineral resource estimates should be updated, and the update should be based on all available drill holes, including the results of the twin hole program. Updates should include full data reviews including EDA, compositing, grade and outlier capping/restriction, variography, determination of appropriate interpolation methods, review of confidence classifications, model validation, and updated input parameters to the conceptual pit shell constraining the estimates.

A budget estimate for this work is approximately US$0.2–US$0.25 M.

23.5. Metallurgy

A comprehensive metallurgical testwork program is required and should be based on core collected from a dedicated 10,500 m metallurgical drill program.

Metallurgical tests should include mineralogy, comminution, flotation, and variability tests. Additional testwork may include rheology, and acid base accounting.

A geometallurgical model should be constructed.

The product from the testwork should be evaluated for marketing potential and to confirm that the earlier testwork that showed low concentrations of deleterious elements is supported.

A budget estimate for this work, assuming the metallurgical program will use PQ core at an all-in cost of US$250/m, is approximately US$3.5–US$4 M.

23.6. Infrastructure

Trade-off studies should be performed to determine sites for key infrastructure. These will need to be carefully sited to avoid significant disturbance to the lagoons and wetlands (bofedales) in the vicinity of the planned open pit.

Alternatives for tailings and waste disposal should be evaluated, and the use of dry-stack facilities should be considered.

A budget estimate for this work is US$0.1–US$0.15 M.

23.7. Environmental

The environmental baseline studies require update, and should include at a minimum:

- Bofedales
- Streams, ponds, and lagoons
- Water quality
- Noise
- Flora
- Fauna
- Soils
- Social environment
- Local resources and current land use.

The Michiquillay deposit is bisected by the fish-bearing Michiquillay stream that drains south to the settlement of Michiquillay and the La Encañada River. Development of any open pit will require diversion of the stream, and mitigation measures for affected fish species. A plan should be developed to address these two items.

Four archaeological sites are within the boundary of the conceptual open pit. Southern Copper will be required to obtain a CIRA before starting activities that would disturb the sites. If it is absolutely necessary to locate infrastructure over an archaeological site, Southern Copper must obtain authorization from the Ministry of Culture to clear the area of archaeological remains before starting proposed activities.

Southern Copper should continue with its community relations efforts and plans. Southern Copper should set up a Community Care Service that is accessible by local communities to obtain Project information and to provide feedback to Southern Copper, whether positive or negative.

A budget estimate for this work is US$3–US$4 M.

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24.2. Abbreviations and Symbols

Abbreviation/Symbol	Term
3D	three-dimensional
AAS	atomic absorption spectrometry
DGPS	digital global positioning system
EIAsd	Environmental Impact Assessment
G&A	general and administrative
GPS	global positioning system
HQ	63.5 mm core diameter
Lb	pound
ICP-AES	inductively-coupled plasma atomic emission spectroscopy
%NSR	percent net smelter return
Mlb	Million pounds
Mt	Million tonnes
NSR	net smelter return
NQ	47.6 mm core diameter
OK	ordinary kriging
QA/QC	quality assurance and quality control
QP	Qualified Person
PQ	85 mm core diameter
RQD	rock quality description
SAG	semi-autogenous grind
UCS	uniaxial compressive strength
US	United States
US$	United States dollar
WRSF	waste rock storage facility

24.3. Glossary of Terms

Term	Definition
adit	A passageway or opening driven horizontally into the side of a hill generally for the purpose of exploring or otherwise opening a mineral deposit. An adit is open to the atmosphere at one end, a tunnel at both ends.
aquifer	A geologic formation capable of transmitting significant quantities of groundwater under normal hydraulic gradients.
argillic alteration	Introduces any one of a wide variety of clay minerals, including kaolinite, smectite and illite. Argillic alteration is generally a low temperature event, and some instances may occur under atmospheric conditions
Atterberg limit	A measure of the critical water contents of a fine-grained material
ball mill	A piece of milling equipment used to grind ore into small particles. It is a cylindrical shaped steel container filled with steel balls into which crushed ore is fed. The ball mill is rotated causing the balls themselves to cascade, which in turn grinds the ore.
beneficiation	Physical treatment of crude ore to improve its quality for some specific purpose. Also called mineral processing.
Bond work index (BWi)	A measure of the energy required to break an ore to a nominal product size, determined in laboratory testing, and used to calculate the required power in a grinding circuit design.
Brazilian tensile test	Indirectly determines the tensile strength of a rock
comminution/crushing/grinding	Crushing and/or grinding of ore by impact and abrasion. Usually, the word "crushing" is used for dry methods and "grinding" for wet methods. Also, "crushing" usually denotes reducing the size of coarse rock while "grinding" usually refers to the reduction of the fine sizes.
concentrate	The concentrate is the valuable product from mineral processing, as opposed to the tailing, which contains the waste minerals. The concentrate represents a smaller volume than the original ore
cut-off grade	A grade level below which the material is not “ore” and considered to be uneconomical to mine and process. The minimum grade of ore used to establish reserves.
cyanidation	A method of extracting gold or silver by dissolving it in a weak solution of sodium cyanide.
data verification	The process of confirming that data has been generated with proper procedures, has been accurately transcribed from the original source and is suitable to be used for mineral resource and mineral reserve estimation

Term	Definition
density	The mass per unit volume of a substance, commonly expressed in grams/ cubic centimeter.
development	Often refers to the construction of a new mine or; Is the underground work carried out for the purpose of reaching and opening up a mineral deposit. It includes shaft sinking, cross-cutting, drifting and raising.
direct shear test	Method used to determine the shear strength of a material. Shear strength is defined as the maximum resistance that a material can withstand when subjected to shearing
discounted cash flow (DCF)	Concept of relating future cash inflows and outflows over the life of a project or operation to a common base value thereby allowing more validity to comparison of projects with different durations and rates of cash flow.
easement	Areas of land owned by the property owner, but in which other parties, such as utility companies, may have limited rights granted for a specific purpose.
encumbrance	An interest or partial right in real property which diminished the value of ownership, but does not prevent the transfer of ownership. Mortgages, taxes and judgements are encumbrances known as liens. Restrictions, easements, and reservations are also encumbrances, although not liens.
feasibility study	A feasibility study is a comprehensive technical and economic study of the selected development option for a mineral project, which includes detailed assessments of all applicable modifying factors, as defined by this section, together with any other relevant operational factors, and detailed financial analysis that are necessary to demonstrate, at the time of reporting, that extraction is economically viable. The results of the study may serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. A feasibility study is more comprehensive, and with a higher degree of accuracy, than a pre-feasibility study. It must contain mining, infrastructure, and process designs completed with sufficient rigor to serve as the basis for an investment decision or to support project financing.
flotation	Separation of minerals based on the interfacial chemistry of the mineral particles in solution. Reagents are added to the ore slurry to render the surface of selected minerals hydrophobic. Air bubbles are introduced to which the hydrophobic minerals attach. The selected minerals are levitated to the top of the flotation machine by their attachment to the bubbles and into a froth product, called the "flotation concentrate." If this froth carries more than one mineral as a designated main constituent, it is called a "bulk float". If it is selective to one constituent of the ore, where more than one will be floated, it is a "differential" float.

Term	Definition
heap leaching	A process whereby valuable metals, usually gold and silver, are leached from a heap or pad of crushed ore by leaching solutions percolating down through the heap and collected from a sloping, impermeable liner below the pad.
indicated mineral resource	An indicated mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. The term adequate geological evidence means evidence that is sufficient to establish geological and grade or quality continuity with reasonable certainty. The level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.
induced polarization (IP)	Geophysical method used to directly detect scattered primary sulfide mineralization. Most metal sulfides produce IP effects, e.g. chalcopyrite, bornite, chalcocite, pyrite, pyrrhotite
inferred mineral resource	An inferred mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. The term limited geological evidence means evidence that is only sufficient to establish that geological and grade or quality continuity is more likely than not. The level of geological uncertainty associated with an inferred mineral resource is too high to apply relevant technical and economic factors likely to influence the prospects of economic extraction in a manner useful for evaluation of economic viability. A qualified person must have a reasonable expectation that the majority of inferred mineral resources could be upgraded to indicated or measured mineral resources with continued exploration; and should be able to defend the basis of this expectation before his or her peers.
initial assessment	An initial assessment is a preliminary technical and economic study of the economic potential of all or parts of mineralization to support the disclosure of mineral resources. The initial assessment must be prepared by a qualified person and must include appropriate assessments of reasonably assumed technical and economic factors, together with any other relevant operational factors, that are necessary to demonstrate at the time of reporting that there are reasonable prospects for economic extraction. An initial assessment is required for disclosure of mineral resources but cannot be used as the basis for disclosure of mineral reserves
intact rock strength	The strength of a rock excluding weaknesses due to fractures and joints
Lerchs–Grossmann	An algorithm used to design the contour of an open pit so as to maximize the difference between the total mine value of ore extracted and the total extraction cost of ore and waste

Term	Definition
life of mine (LOM)	Number of years that the operation is planning to mine and treat ore, and is taken from the current mine plan based on the current evaluation of ore reserves.
measured mineral resource	A measured mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. The term conclusive geological evidence means evidence that is sufficient to test and confirm geological and grade or quality continuity. The level of geological certainty associated with a measured mineral resource is sufficient to allow a qualified person to apply modifying factors, as defined in this section, in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit.
mill	Includes any ore mill, sampling works, concentration, and any crushing, grinding, or screening plant used at, and in connection with, an excavation or mine.
mineral reserve	A mineral reserve is an estimate of tonnage and grade or quality of indicated and measured mineral resources that, in the opinion of the qualified person, can be the basis of an economically viable project. More specifically, it is the economically mineable part of a measured or indicated mineral resource, which includes diluting materials and allowances for losses that may occur when the material is mined or extracted. The determination that part of a measured or indicated mineral resource is economically mineable must be based on a preliminary feasibility (pre-feasibility) or feasibility study, as defined by this section, conducted by a qualified person applying the modifying factors to indicated or measured mineral resources. Such study must demonstrate that, at the time of reporting, extraction of the mineral reserve is economically viable under reasonable investment and market assumptions. The study must establish a life of mine plan that is technically achievable and economically viable, which will be the basis of determining the mineral reserve. The term economically viable means that the qualified person has determined, using a discounted cash flow analysis, or has otherwise analytically determined, that extraction of the mineral reserve is economically viable under reasonable investment and market assumptions. The term investment and market assumptions includes all assumptions made about the prices, exchange rates, interest and discount rates, sales volumes, and costs that are necessary to determine the economic viability of the mineral reserves. The qualified person must use a price for each commodity that provides a reasonable basis for establishing that the project is economically viable.

Term	Definition
mineral resource	A mineral resource is a concentration or occurrence of material of economic interest in or on the Earth's crust in such form, grade or quality, and quantity that there are reasonable prospects for economic extraction. The term material of economic interest includes mineralization, including dumps and tailings, mineral brines, and other resources extracted on or within the earth's crust. It does not include oil and gas resources, gases (e.g., helium and carbon dioxide), geothermal fields, and water. When determining the existence of a mineral resource, a qualified person, as defined by this section, must be able to estimate or interpret the location, quantity, grade or quality continuity, and other geological characteristics of the mineral resource from specific geological evidence and knowledge, including sampling; and conclude that there are reasonable prospects for economic extraction of the mineral resource based on an initial assessment, as defined in this section, that he or she conducts by qualitatively applying relevant technical and economic factors likely to influence the prospect of economic extraction.
net smelter return (NSR)	A defined percentage of the gross revenue from a resource extraction operation, less a proportionate share of transportation, insurance, and processing costs.
open pit	A mine that is entirely on the surface. Also referred to as open-cut or open-cast mine.
overburden	Material of any nature, consolidated or unconsolidated, that overlies a deposit of ore that is to be mined.
pebble crushing	A crushing process on screened larger particles that exit through the grates of a SAG mill. Such particles (typically approx. 50 mm diameter) are not efficiently broken in the SAG mill and are therefore removed and broken, typically using a cone crusher. The crushed prebbles are then fed to a grinding mill for further breakage.
petrography	Branch of geology that deals with the description and classification of rocks.
plant	A group of buildings, and especially to their contained equipment, in which a process or function is carried out; on a mine it will include warehouses, hoisting equipment, compressors, repair shops, offices, mill or concentrator.
Pole-dipole	
potassic alteration	A relatively high temperature type of alteration which results from potassium enrichment. Characterized by biotite, K-feldspar, adularia.
preliminary feasibility study, pre-feasibility study	A preliminary feasibility study (prefeasibility study) is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a qualified person has determined (in the case of underground mining) a preferred mining method,

Term	Definition
	or (in the case of surface mining) a pit configuration, and in all cases has determined an effective method of mineral processing and an effective plan to sell the product. A pre-feasibility study includes a financial analysis based on reasonable assumptions, based on appropriate testing, about the modifying factors and the evaluation of any other relevant factors that are sufficient for a qualified person to determine if all or part of the indicated and measured mineral resources may be converted to mineral reserves at the time of reporting. The financial analysis must have the level of detail necessary to demonstrate, at the time of reporting, that extraction is economically viable,
probable mineral reserve	A probable mineral reserve is the economically mineable part of an indicated and, in some cases, a measured mineral resource. For a probable mineral reserve, the qualified person's confidence in the results obtained from the application of the modifying factors and in the estimates of tonnage and grade or quality is lower than what is sufficient for a classification as a proven mineral reserve, but is still sufficient to demonstrate that, at the time of reporting, extraction of the mineral reserve is economically viable under reasonable investment and market assumptions. The lower level of confidence is due to higher geologic uncertainty when the qualified person converts an indicated mineral resource to a probable reserve or higher risk in the results of the application of modifying factors at the time when the qualified person converts a measured mineral resource to a probable mineral reserve. A qualified person must classify a measured mineral resource as a probable mineral reserve when his or her confidence in the results obtained from the application of the modifying factors to the measured mineral resource is lower than what is sufficient for a proven mineral reserve.
propylitic	Characteristic greenish colour. Minerals include chlorite, actinolite and epidote. Typically contains the assemblage quartz-chlorite-carbonate
probable mineral reserve	A probable mineral reserve is the economically mineable part of an indicated and, in some cases, a measured mineral resource. For a probable mineral reserve, the qualified person's confidence in the results obtained from the application of the modifying factors and in the estimates of tonnage and grade or quality is lower than what is sufficient for a classification as a proven mineral reserve, but is still sufficient to demonstrate that, at the time of reporting, extraction of the mineral reserve is economically viable under reasonable investment and market assumptions. The lower level of confidence is due to higher geologic uncertainty when the qualified person converts an indicated mineral resource to a probable reserve or higher risk in the results of the application of modifying factors at the time when the qualified person converts a measured mineral resource to a probable mineral reserve. A qualified person must classify a measured mineral resource as a

Term	Definition
	probable mineral reserve when his or her confidence in the results obtained from the application of the modifying factors to the measured mineral resource is lower than what is sufficient for a proven mineral reserve.
qualified person	A qualified person is an individual who is a mineral industry professional with at least five years of relevant experience in the type of mineralization and type of deposit under consideration and in the specific type of activity that person is undertaking on behalf of the registrant; and an eligible member or licensee in good standing of a recognized professional organization at the time the technical report is prepared. For an organization to be a recognized professional organization, it must: (A) Be either: (1) An organization recognized within the mining industry as a reputable professional association, or (2) A board authorized by U.S. federal, state or foreign statute to regulate professionals in the mining, geoscience or related field; (B) Admit eligible members primarily on the basis of their academic qualifications and experience; (C) Establish and require compliance with professional standards of competence and ethics; (D) Require or encourage continuing professional development; (E) Have and apply disciplinary powers, including the power to suspend or expel a member regardless of where the member practices or resides; and; (F) Provide a public list of members in good standing.
quebrada	Gorge or ravine
reclamation	The restoration of a site after mining or exploration activity is completed.
refining	A high temperature process in which impure metal is reacted with flux to reduce the impurities. The metal is collected in a molten layer and the impurities in a slag layer. Refining results in the production of a marketable material.
resistivity	Observation of electric fields caused by current introduced into the ground as a means of studying earth resistivity in geophysical exploration. Resistivity is the property of a material that resists the flow of electrical current
rock quality designation (RQD)	A measure of the competency of a rock, determined by the number of fractures in a given length of drill core. For example, a friable ore will have many fractures and a low RQD.
royalty	An amount of money paid at regular intervals by the lessee or operator of an exploration or mining property to the owner of the ground. Generally based

Term	Definition
	on a specific amount per tonne or a percentage of the total production or profits. Also, the fee paid for the right to use a patented process.
semi-autogenous grinding (SAG)	A method of grinding rock into fine powder whereby the grinding media consists of larger chunks of rocks and steel balls.
specific gravity	The weight of a substance compared with the weight of an equal volume of pure water at 4°C.
supergene	Mineral enrichment produced by the chemical remobilisation of metals in an oxidised or transitional environment.
tailings	Material rejected from a mill after the recoverable valuable minerals have been extracted.
triaxial compressive strength	A test for the compressive strength in all directions of a rock or soil sample
tunnel	A horizontal underground passage that is open at both ends; the term is loosely applied in many cases to an adit, which is open at only one end
uniaxial compressive strength	A measure of the strength of a rock, which can be determined through laboratory testing, and used both for predicting ground stability underground, and the relative difficulty of crushing.

25. RELIANCE ON INFORMATION PROVIDED BY THE REGISTRANT

25.1 Introduction

Wood fully relied on the registrant for the guidance in the areas noted in the following sub-sections.

Wood considers it is reasonable to rely on Southern Copper because the company has considerable experience in developing and operating mines in Peru.

25.2 Macroeconomic Trends

- Information relating to inflation, interest rates, discount rates, foreign exchange rates, taxes.

This information is used in the economic analysis in Chapter 19. It supports the mineral resource estimate in Chapter 11, and the mineral reserve estimate in Chapter 12.

25.3 Markets

- Information relating to market studies/markets for product, market entry strategies, marketing and sales contracts, product valuation, product specifications, refining and treatment charges, transportation costs, agency relationships, material contracts (e.g. mining, concentrating, smelting, refining, transportation, handling, hedging arrangements, and forward sales contracts), and contract status (in place, renewals).

This information is used when discussing the market, commodity price and contract information in Chapter 16, and in the economic analysis in Chapter 19. It supports the mineral resource estimate in Chapter 11, and the mineral reserve estimate in Chapter 12.

25.4 Legal Matters

- Information relating to the corporate ownership interest, the mineral tenure (concessions, payments to retain, obligation to meet expenditure/reporting of work conducted), surface rights, water rights (water take allowances), royalties, encumbrances, easements and rights-of-way, violations and fines, permitting requirements, ability to maintain and renew permits, monitoring requirements and monitoring frequency, and bonding requirements.

This information is used in support of the property ownership information in Chapter 3, the permitting and closure discussions in Chapter 17, and the economic analysis in Chapter 19. It supports the mineral resource estimate in Chapter 11, and the mineral reserve estimate in Chapter 12.

25.5 Environmental Matters

- Information relating to baseline and supporting studies for environmental permitting, environmental permitting and monitoring requirements, ability to maintain and renew permits, emissions controls, closure planning, closure and reclamation bonding and bonding requirements, sustainability accommodations, and monitoring for and compliance with requirements relating to protected areas and protected species.

This information is used when discussing property ownership information in Chapter 3, the permitting and closure discussions in Chapter 17, and the economic analysis in Chapter 19. It supports the mineral resource estimate in Chapter 11, and the mineral reserve estimate in Chapter 12.

25.6 Stakeholder Accommodations

- Information relating to social and stakeholder baseline and supporting studies, hiring and training policies for workforce from local communities, partnerships with stakeholders (including national, regional, and state mining associations; trade organizations; fishing organizations; state and local chambers of commerce; economic development organizations; non-government organizations; and, state and federal governments), and the community relations plan

This information is used in the social and community discussions in Chapter 17, and the economic analysis in Chapter 19. It supports the mineral resource estimate in Chapter 11, and the mineral reserve estimate in Chapter 12.

25.7 Governmental Factors

- Information relating to taxation and government royalty considerations at the Project level.

This information is used in the economic analysis in Chapter 19. It supports the mineral resource estimate in Chapter 11, and the mineral reserve estimate in Chapter 12.