



## MIDDLE CAUCA METALLOGENIC BELT – COLOMBIA FIELD TRIP

### Overview

This year (2019), the SEG EAFIT Student Chapter held a local field trip in the Antioquia department, Colombia, with the objective of visiting the main projects of the Middle Cauca Metallogenic Belt (MCMB), the most profitable Au-Cu belt in Colombia.

The MCMB is located between the Central and Western cordilleras of the Colombian Andes mountain range, along the Cauca River and within the Cauca-Romeral fault system. This region contains a mixture of continental and oceanic rocks affected by several magmatic events, including the intrusion of Cretaceous Antioquia Batholith and various Neogene small subvolcanic bodies or stocks.

From a regional perspective, transpressive tectonics and calc-alkaline intrusions are responsible of ore formation, with porphyry, epithermal and mesothermal-type deposits; however, some deposits are believed to be a combination between different types, and some have not even been assigned a classification. Our objective was to get hands-on experience on identifying the differences between these types of deposits and recognizing the main characteristics of each one, including structures, mineralization styles and ore mineralogy.

We wanted to visit three gold projects currently operating (Cisneros, Buriticá and Marmato), one gold project in exploration stage (Titiribí), and one copper project in exploration stage (Quebradona). Unfortunately, we could not access some of them due to socio-political issues and highway constructions. All and all, we were able to visit Cisneros and Titiribí projects in July, and we are visiting Buriticá on November 7 together with the National University of Colombia – Medellín Student Chapter.

### Cisneros project – Guaico mine

Date: July 10<sup>th</sup> 2019

Location: Santo Domingo, Antioquia, Colombia

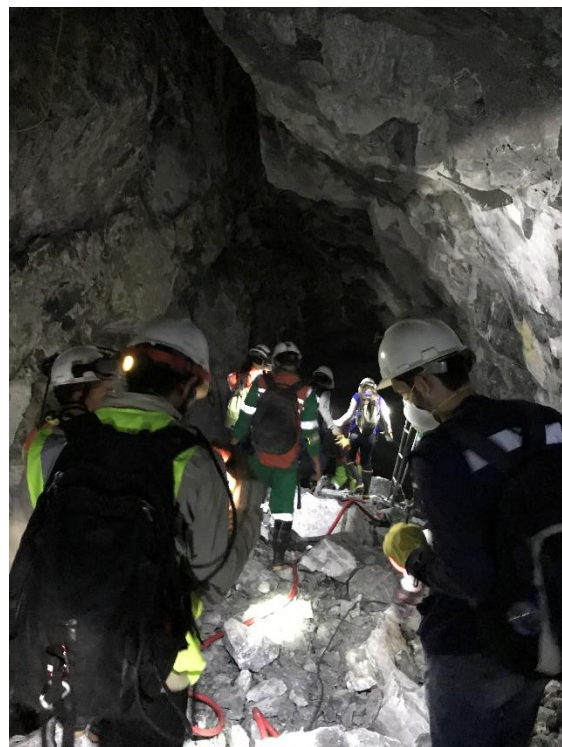
Leaders: Daniel Álvarez, Mauricio Marín

No. Participants: 8

Company: Antioquia Gold

This project is located in the municipality of Santo Domingo, Antioquia, two hours northeast of Medellín. It is a gold mesothermal-type deposit, with a strong structural control by the Nus fault and its associated shear zone.

On this day, we had a complete visit to the company's operation. First, we had an introduction to regional and local geology aspects by the chief exploration geologist Mauricio Marín; he talked about the history of the company in the area, the exploration campaigns they were developing, and the different mining methods they used depending on ore structure –vein or shear zone–. Then, we had a guided visit by the mine geologist Daniel Álvarez to the Guaico mine, where they exploit one of the two principal vein systems; inside the mine, we could directly observe the ore structure geometry and identify some hydrothermal alterations. After this, we visited the core logging facility to understand how they model the vein structure based on core descriptions and field structural data. Finally, we visited the processing plant where we learnt how they transform the rocks to obtain gold concentrate.



## Titiribí project – El Zancudo mine

Date: July 19<sup>th</sup> 2019

Location: Titiribí, Antioquia

Leaders: Maria Isabel Marín, Leonardo Sepúlveda

No. Participants: 7

Company: IAMGOLD – Gran Colombia Gold

This project is located in the traditional mining town of Titiribí, with the wealthiest mine operations of the country in the 1900s. In 2017, the companies IAMGOLD and Gran Colombia Gold returned with this exploration project. It is a Au-Ag epithermal-mesothermal-type deposit.

We had an introduction to local geology by IAMGOLD's exploration geologist Leonardo Sepúlveda, who showed us from a panoramic view the different lithological units and structures on the area. Then, we had a presentation about ore geology, exploration activities, and history of mining in Titiribí area. Next, we visited an artisanal abandoned shaft and learned how they conduct brownfield exploration. Finally, we visited the core logging facility and learned how they build the 3d-model with drill-hole data and how they estimate potential resources.







## Buriticá Project

Date: Upcoming - November 7<sup>th</sup> 2019

Location: Buriticá, Antioquia

Leaders: to confirm

No. Participants: 15

Company: Continental Gold

-Coming soon-

## Costs

Day	Project	No. Participants	Costs (USD)			TOTAL (USD)
			Transportation	Additional	Concept	
1	Cisneros	8	145	45	Mine lamps and gloves	190
2	Titiribí	7	145	0	-	145
3	Buriticá	15	200	0	-	200
<b>TOTAL (USD)</b>			490	45	-	<b>535</b>

Stewart R. Wallace Fund: 500 USD

Student Chapter budget: 35 USD