CONE

MINE EXPLORATION

Aripuanã Project

Iron Ore

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Aripuanã Project

SUMMARY

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1. Executive Summary

The Aripuanã Project is located in northwest Mato Grosso, one of the largest ore producing regions, known as the Metallic District of Aripuanã.

In the geological context the area is inserted in Rondônia-Juruena Province that comprises a crustal segment of the Amazon Craton that was formed in 1.85 to 1.72 Ga. It consists of granitic and volcano-sedimentary terrains that evolved into a system of magmatic arcs (Scandollara et al., 2000). The northern part of this province or Roosevelt-Juruena Domain (Santos et al., 2000) extends north-northwest of Mato Grosso and was subdivided into two areas: Juruena (1.85 to 1.72 Ga.), And Roosevelt-Aripuanã (1.76 to 1.74 Ga).

Locally the project area is part of the formation listed below: Granite Fontanilhas, Roosevelt Group, Granite Rio Vermelho and Granite Juara. Being the Granite Fontanilhas the geological formation that dominates the area. Below is a brief description of this unit.

The Granite Fontanillas dominates much of the southern portion of the region of Castanheira, occurring in the form of a batolitic body, elongated according to EW and WNWESSE, with greater dimension above 200 km, entering the domain of the municipality of Juara. In the regional context it is a wide variation in the structural/textural of the granitic rocks from weakly foliated types to proto-mylonites and banded mylonites.

This unit includes biotite granite that matches the dominant terms and subordinate bodies of gabbros. The granites exhibit monotonic composition, ranging from biotite syenogranite to biotite monzogranites with pink and reddish tonality.

The area in question was chosen as the subject of exploration by the large number of outcropping points and detrital material with iron ore scattered through the area, which will require further study in order to understand the genesis of the ore and then the volume of the deposit at these points.

The detrital material found in the area is resulted due to the erosive activity of the bodies in situ. They need to be better characterized with exploration work.

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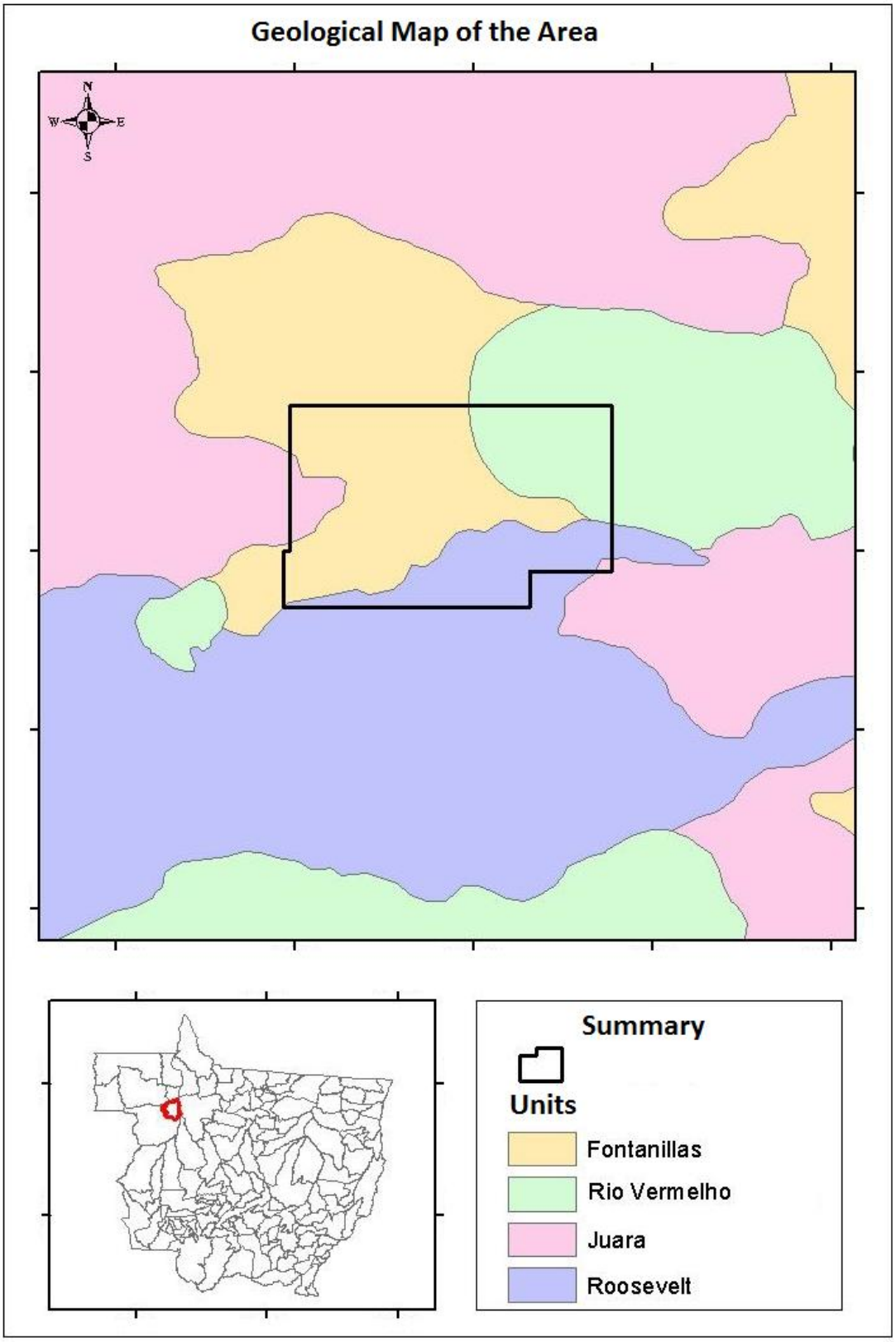

Image 1: Geological map of the area

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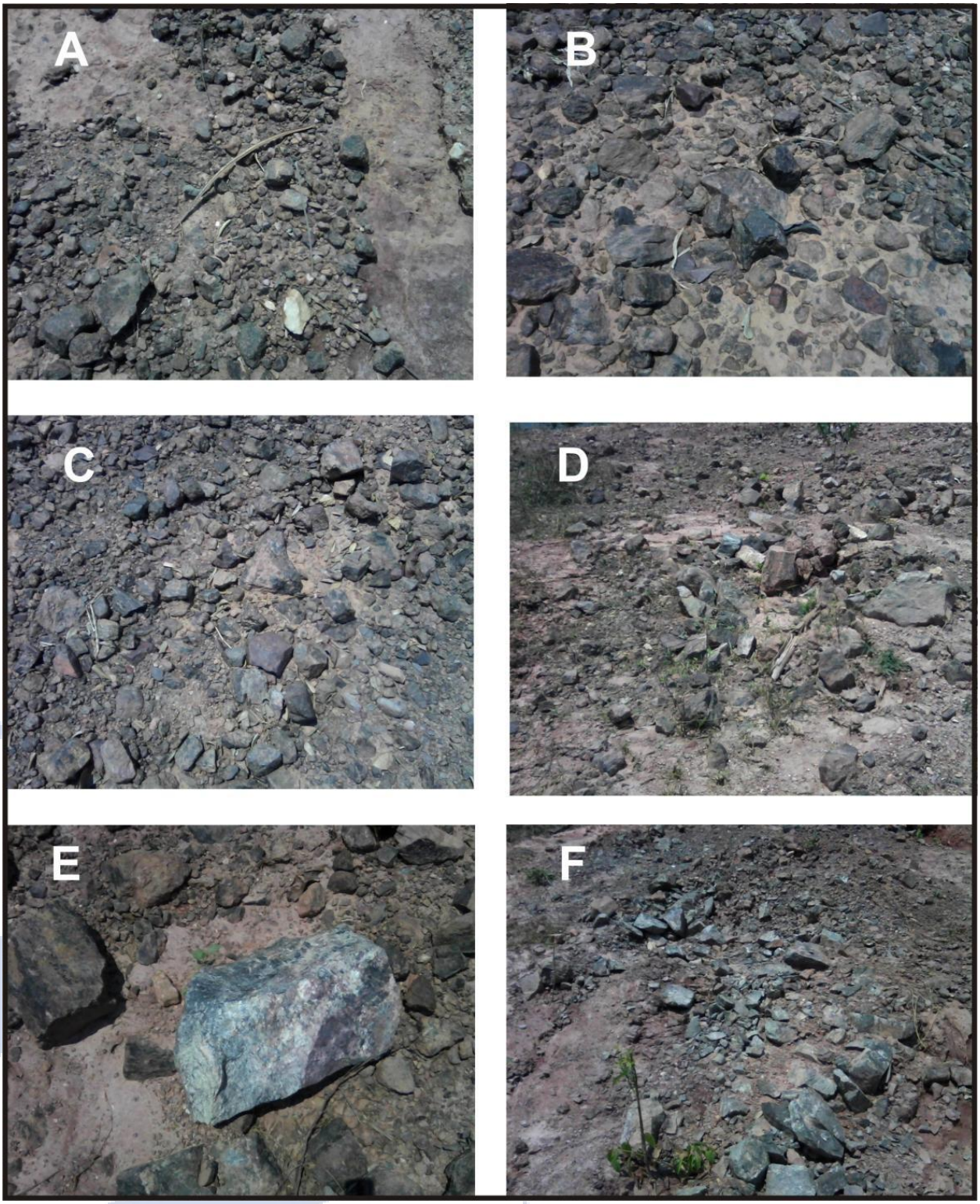

Image 2: Aspect of the occurrence of iron ore in the project area: (A, B, C, D) Fragments of iron; (E) block of iron ore; (F) Detrital material and outcrop of iron ore

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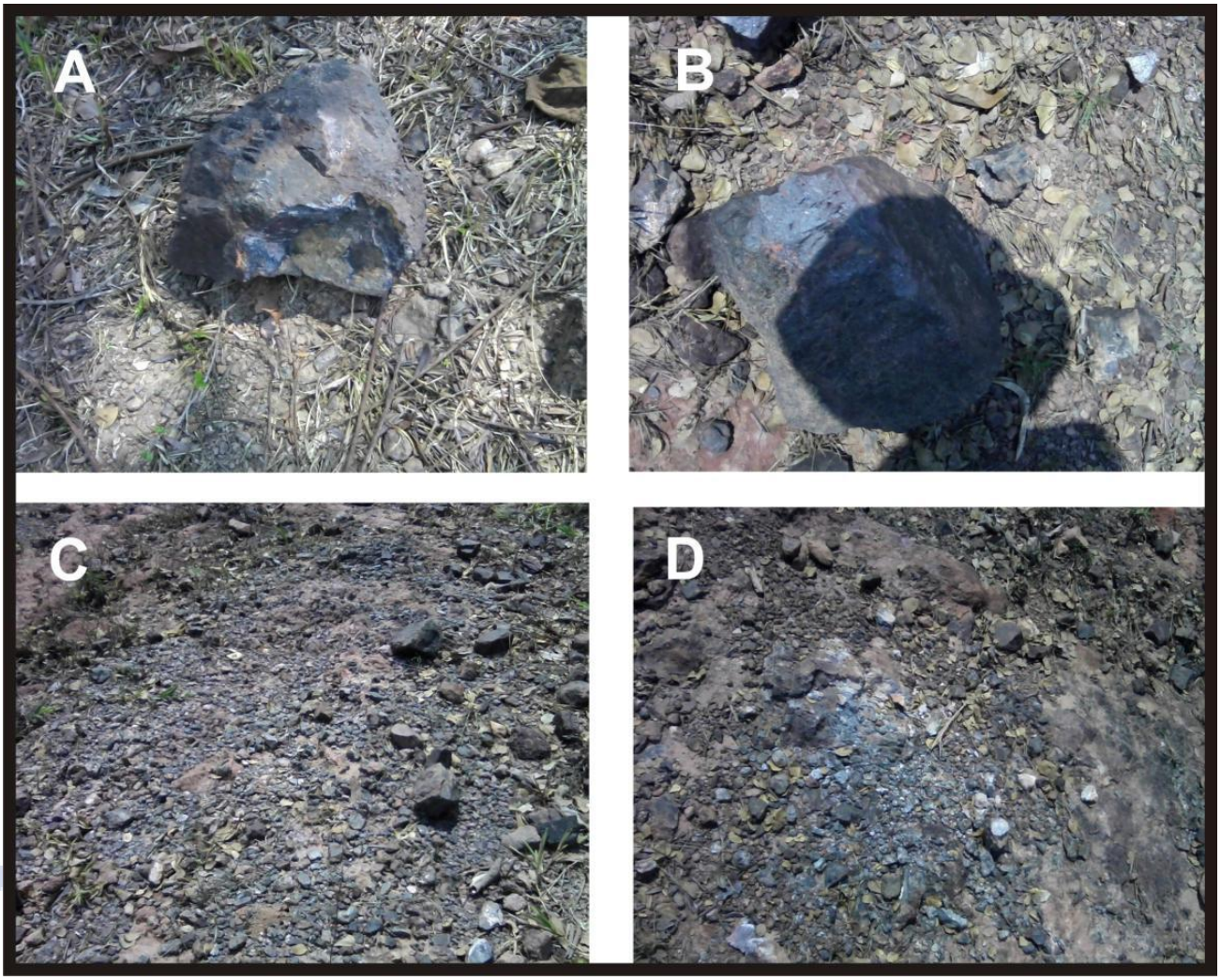

Image 3: Aspect of the occurrence of the ore: (A and B) blocks rolled iron ore; (C and D) Outcrop and fragments of iron ore;

The exploration work has already started with walks over part of the area and collecting samples for analysis. The first analyzes were made on (METAMAT) Matogrossense Mining Company and the SGS GEOSOL Laboratory. The results of the first chemical analysis showed a qualitatively high-grade ore around 91.3% Geosol and 87.69% METAMAT, corresponding to an average high quantitative content of around 65.7 %, and low P (phosphorus), important factor for iron ore for steel industry. Soil and rock geochemical are scheduled over the entire project area to delimitation of the most promising targets and subsequent targeting for rotary drilling.

For better understanding of iron occurrences and confirmation of the deposit in the region it is necessary studies such as: detailed geological mapping, geochemical sampling of soils and rocks, rotary drilling, pilot beneficiation plant of the ore (trial mining), and others.

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According to the first analysis done on the collected materials, the ore that occurs in the region is hematite (Fe2O3), ore black to red color, depending on the particle size; not magnetic, containing up to 70% iron, similar features revealed by chemical analyzes.

The deposits of iron is widely distributed in the earth and can be concentrated in all geological epochs, the deposits of the Precambrian are the most important, and can be classified into four main categories:

1. Layered sedimentary deposits
2. Deposits related to igneous activities
3. Deposits formed by hydrothermal solutions
4. Deposits resulted from change and accumulation in surface

Within this context can be said that the project area is included in the most important Meso-Proterozoic geological environment (Pre Cambrian), and that the exploration work to be performed will observe their mode of occurrence.

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2. Location and Access

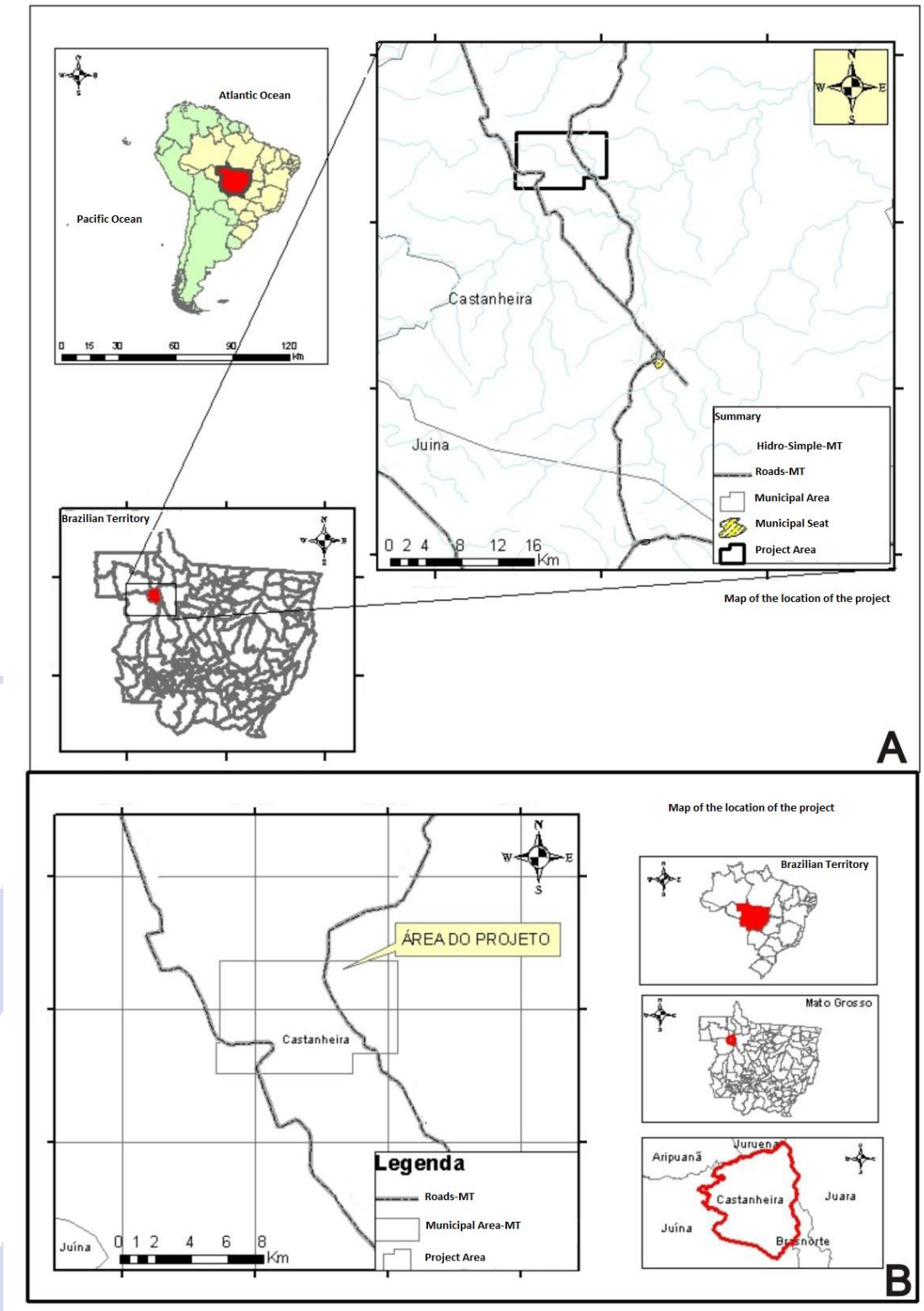

Image 4: (A) Location map of the Aripuanã Project; (B) Detailed map

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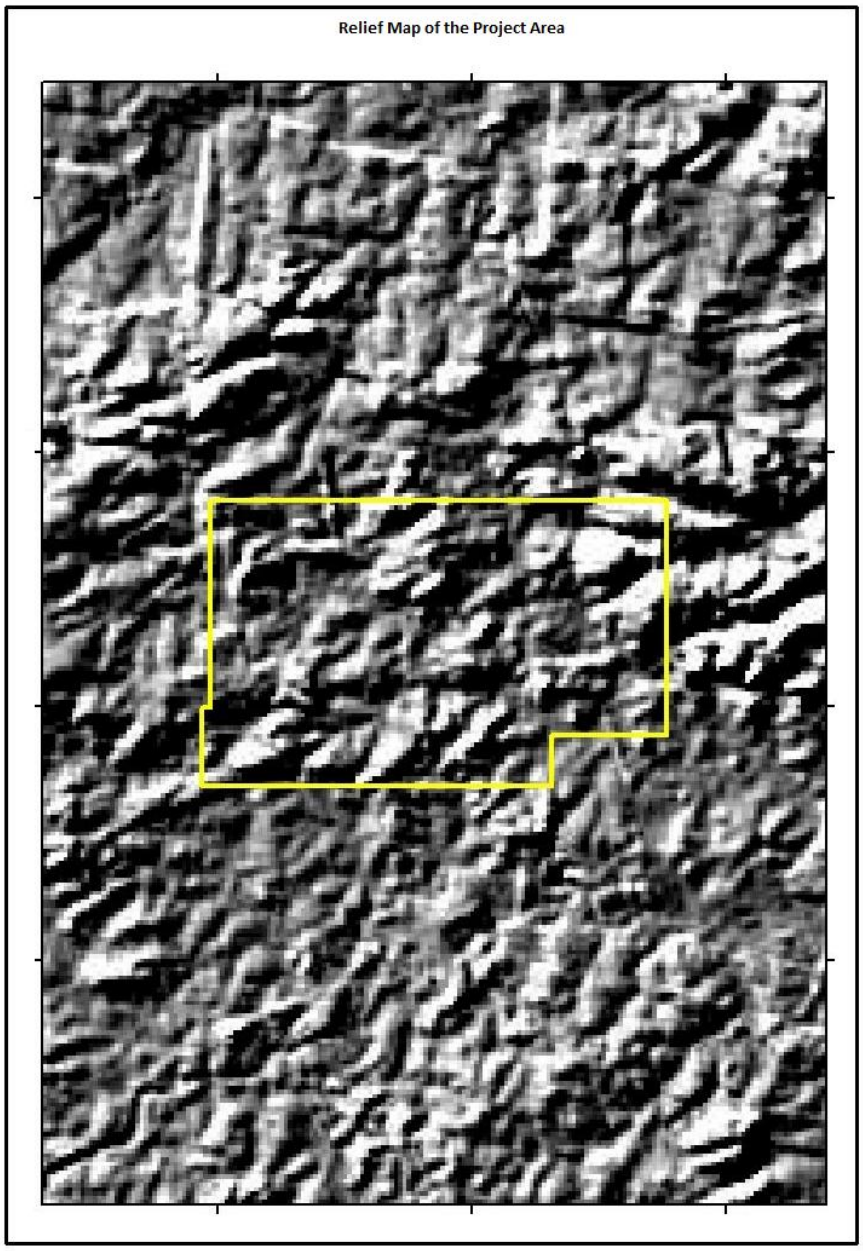

Image 5: Relief Map of the Project Area (SW/NE)

The project area is located in the municipality of Castanheira in northwestern Mato Grosso. The area is approximately 800 km from Cuiabá. The area under exploration is located about 25 km from the town of Castanheira and the access is made using the state-owned road MT 170 for 10 km towards north and then southwest picks through the MT 420 for around 20 km.

The process area is about 40 km from the city of Juina that has daily regular commercial flights and 25 km from the city of Castanheira which has unpaved airstrip near the project area. These locations have a good infrastructure, especially the city of Juina, which could serve as a basis for the development of the project.

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3. Logistics

Due to the recent discoveries of iron ore in the region, such as the deposit of iron of the Company IMS MINERAL ENGINEERING LTD, which was proven through geological studies a reserve with about 3 billion tons in the town of Juina, proving that the geological environment of the region is compatible with the occurrences in the area of the Aripuanã Project.

Currently, the region lacks logistics which facilitates the mining projects in this region, however, with the arrival of the railroad to the region will enable the transportation of the production of the region.

The construction of 1,638 Km of railroad between Campinorte/GO and Vilhena/RO is one of the goals of the Federal Government for the next four years. This is the Integration Railway Midwest, whose project will be executed with funds from PAC - Growth Acceleration Program, by VALEC Engineering, Construction and Railroads, public company under the Ministry of Transport.

The stretch to be built in the first stage will leave Campinorte/GO, cross the state of Mato Grosso in the east/west direction until Lucas do Rio Verde. From Campinorte/GO to Lucas do Rio Verde/MT the railroad will have the extension of 1040 km. By the year of its completion (2014), it is expected to invest U.S. $ 4.1 billion. As for the stretch between Lucas do Rio Verde/MT and Vilhena/RO (with 598 km), to be built in the second stage, to be invested a total of R $ 2.3 billion.

Preliminary studies, the EIA/RIMA and the basic project of the Midwest Integration Railroad were initiated in 2009. Connecting with the north-south railroad, the Midwest Integration Railroad will give new impetus to the development of the states of Mato Grosso, Rondônia and southern of Pará and Amazonas.

Municipalities which will pass the FICO (Midwest Integration Railroad) in Mato Grosso: Cocalinho, Nova Nazaré, Água Boa, Canarana, Gaúcha do Norte, Paranatinga, Nova Ubiratã, Sorriso, Lucas do Rio Verde, Nova Mutum , Nova Maringá, Brasnorte, Sapezal, Campos de Julio and Commodoro.

Originally the railroad does not reach Juína/Castanheira. The ideal will be the construction of a branch railway line to the location, as both Commodore and Sinop are within 300 to 350 km away respectively, where the railway will pass.

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4. Conclusion

By belonging to a highly promising region, as shown in the illustrations and the references cited above, the Aripuanã Project reveals to be a very interesting prospective target to be explored but still requiring further information that may be raised with exploration works.

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