

**NI 43-101 TECHNICAL REPORT
RESOURCES ASSESSMENT**

**SANTA CRUZ GRAPHITE PROJECT
BAHIA BRAZIL**

Prepared For:



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1.0 SUMMARY

1.1 GENERAL

Dompieri Tecnologia em Mineração Inc. (DTM) was retained by South Star Mining Corp. (South Star) to prepare an independent Technical Report on the Santa Cruz Graphite Project (the Project), located near the town of Itabela, in the state of Bahia, Brazil. The purpose of this report is to support the disclosure of an updated Mineral Resource estimate.

This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects (NI 43-101).

The mineral resource update incorporates the results of the 2018 field investigations and drilling information from Reverse Circulation (RC) and Diamond drilling (DDH) campaign on São Manuel North (B1) and São Rubens West target areas. DTM visited the property from June 17 to 18, 2019,

Brasil Grafite S.A., a wholly owned subsidiary of South Star, holds 100% interest in the Santa Cruz Graphite Project comprised of 13 mineral rights near the town of Itabela, Bahia, Brazil, totaling approximately 13,000 hectares.

1.2 PROPERTY DESCRIPTION, LOCATION AND TENURE

The Project is located near the town of Itabela in the southern part of the state of Bahia, Brazil. Access is via 90 km of paved federal highways from the International Airport of Porto Seguro, Bahia.

Basic services are available in Itabela (population 28,500), where the company field office is located, while medical services, hospitals, banks, commercial centers, schools and other services are available in the regional main population center of Eunápolis (population 100,200), located approximately 28 km to the north. Figure 2 (on page 18) shows the location map.

The Project is comprised of 13 exploration licenses, all duly registered and in good standing with the Agência Nacional de Mineração (“ANM”), the Brazilian mining regulatory body. Figure 3 (on page 24) shows the location of the licenses.

1.3 GEOLOGICAL SETTING AND MINERALIZATION

The Project is located in the Araçuaí Orogen, in the central eastern portion of Brazil, which partially covers the states of Bahia, Minas Gerais and Espírito Santo. This Orogen is located on the southern border of the São Francisco Craton and the belt has a long history with many subductions and several developments. Its history begins around 880 Ma, in the Macaúbas basin.

The Project origin can be classified as sedimentary. During late Precambrian age, pelites and carbon were deposited at the same time. Later in early Cambrian age, orogenic movements transformed these sediments to high grade metamorphic rocks, and these movements transformed the carbon to graphite (Kinzigite Complex).

The project is located in Unit 3 of the Kinzigitic Complex with rock assemblages rich in graphitic gneiss and quartzite intercalations, layers and lenses of graphitic gneiss. These are of economic importance because they host some of the most important producing assets of large flake graphite in the Americas.

Mineralization was shifted by a regional fault and is controlled by the presence of soft materials along the shear zone associated with this fault. These soft zones contain many folds that are rich in high grade, large flake graphite deposits. In general, the deposit has a strike following this regional fault and dips from vertical to 65° northeast.

Structural domain varies throughout the Araçuaí Orogen, with the Project being in the eastern region of the Unit, where higher metamorphism with strong deformation is present and partial melting (anatexis) is observed. It's possible that the eastern region of the Unit with the higher grades of metamorphism and significant foliation have led to larger flake deposits, when compared to other deposits located further west in the Unit.

Mineralization appears in the soft zones with partial anatexis, following a general NW strike regionally although with small variation to EW in localized area such as São Rubens. In the previous campaign the Santa Cruz geologists identified at least three different mineralized targets: Sao Manuel; Sao Ruben West, which extents towards south

and north (proven with the holes 55-SCP-RC-029, 55-SCP-RC-030, 55-SCP-DDH-008; 55-SCP-RC-031 and 55-SCP-SC-032); and Sao Rubens Central. Several other targets have been identified based on preliminary investigations and drilling results. It is usual to observe high dips (sub vertical to vertical) where high metamorphism and highly deformed granites are most likely responsible for the graphite concentration. In general, mineralization is structurally controlled by the shearing zone along the regional fault.

The main mineralized targets of São Manuel and São Rubens show a continuous strike of approximately 8 kilometers in length, and in general, follow the soft material and structural control along the valley floor. Widths vary from 40m to 200m wide in areas where folding is accentuated. Mineralization is easily identified visually with the presence of jumbo, large and medium graphite flakes within the metamorphosed sedimentary rocks.

1.4 EXPLORATION AND DRILLING

From October through December of 2018, 33 reverse circulation (RC) and 8 diamond drill holes (DDH), respectively totaling 1,285m and 530m, were completed in the São Manuel North (B1) and São Rubens West targets. The hole locations were selected to better understand mineralization controls, define limits and expand the overall resource estimate.

1.5 SAMPLING ANALYSES

All samples collected at the project have been delivered to a certified laboratory at SGS Geosol in Belo Horizonte, Brazil or SGS Lakefield in Ontario, Canada. Once sample results are received, the company geologist inserts proper grade into each corresponding database sample, thus providing a complete description for each data point including X, Y and Z coordinates, lithologic description, sample type, target area and grade result.

Laboratory pulps were then returned to the company and have been stored in a secured facility either at the field office or outside storage facility.

The QA/QC program consisted of:

- 1 standard for every 100 (one hundred) samples in order to test laboratory accuracy;
- 2 blanks for every 100 (one hundred) samples in order to test contamination potential;
- 2 duplicates for every 100 (one hundred) samples in order to test for splitting procedures;

In addition, the QP collected 51 twin samples in order to further check splitting, storage and laboratory efficiency, returning positive and similar results.

Reverse circulation holes had samples collected every meter, resulting in higher average sample of 15-30kg. Quartering was performed in the field using a riffle splitter and later the samples were sent to SGS laboratory. For every 100 samples of drilling, 5 duplicated, 3 blanks and 2.5 standards were included.

Other samples including boxes of chip, panel and trench samples have also been collected, following similar sampling and storage procedures.

1.6 MINERAL RESOURCE ESTIMATE UPDATE

DTM performed a mineral resource estimation update on São Manuel North (B1) and São Rubens West targets of Santa Cruz Graphite Project.

The database for the mineral resource estimation update contains 8 diamond drilling, 85 reverse circulation and 494 rotary drill holes. This database totaling 4,976 meters of drilling and 3,565 samples.

For this update the following items were completed: the review of the geological modeling; the grade estimation; and the classification of the mineral resources. Also, during the update, the following sets of factors were taken into consideration: the quantity and spacing of the available data; the interpretation of the mineralization controls; the type of mineralization; and the quality of the data utilized.

The Effective Date of this report was established as at **30th June 2019**, which was when the modeling was completed.

Table 1 – Santa Cruz Graphite Mineral Resources Summary, after São Manuel North (B1) and São Rubens West Update.

Mineral Resource Estimate	Tonnage	C	In-situ Graphite
	(t)	(%)	(t)
Measured	3,947,550	2.4	94,740
Indicated	10,955,570	2.25	246,500
Total M & I	14,903,100	2.29	341,240
Inferred	7,911,450	2.32	183,550

1.7. INTERPRETATIONS, CONCLUSIONS AND RECOMMENDATIONS

1.7.1. INTERPRETATIONS & CONCLUSIONS

The results obtained with the new drilling campaign were significant in regard to resources classification. After modeling São Manoel Norte and Rubens Oeste bodies, the resources were classified, obtaining 14.9 million tons of measured and indicated resources with 341.2 thousand tons of carbon graphite.

This evolution in the quality of resources enables the elaboration of a reserve framework and respective economic viability study.

1.7.2. RECOMMENDATIONS

- To elaborate the reserves table, containing the “life of mine” mining sequencing;
- Consolidate the geometallurgical process and the industrial plant project;
- Prepare the economic feasibility study;

- Prepare study to start operations with a Pilot Plant using high grade ore.

2.0 INTRODUCTION

2.1 GENERAL

This technical report is a resource evaluation update of the Santa Cruz Graphite Project (the “Project”) near the town of Itabela in the state of Bahia, Brazil. Itabela is a town with approximately 28,500 inhabitants and is accessible via 90 km of paved federal highways from the International Airport in Porto Seguro, Bahia.

Brazil is the third largest producer of graphite in the world and is home to the largest high-quality flake graphite producer outside of China. Brazil has two producing companies that combined have an approximate annual output of approximately 100,000 tonnes of graphite out of 4 operating mines, which is close to 10% the total world supply. The Project is located in one of the most established and prospective areas in Brazil for graphite with 3 active open pit mines (over 70 years of continuous production) and several development projects and exploration targets located in the region. The Project has excellent infrastructure and logistics and is located in a proven area with historic mining activities and within a state that promotes, supports, and invests in mineral resource development.

2.2 SOURCES OF INFORMATION

Information used in this report has been provided by South Star Mining and its consultants, with revision, preparation, consolidation and approval by Luiz Eduardo Pignatari, independent Qualified Person.

2.3 QUALIFIED PERSONS

The following staff worked under Eng. Luiz Pignatari (QP):

- Prof. Dr. Maurício Dompieri - Mining Engineer;
- Maurício Prado - Senior Geologist;
- Felipe Baffi - Mining Engineer;
- José Geremias dos Reis - Project Technician

2.4 PREVIOUS REPORTS & INFORMATION SOURCES

In 2017, BGSA completed a preliminary economic report, prepared by independent consultants, which has served as the basis for this report.

2.5 TERMS OF REFERENCE & ABBREVIATIONS

The technical report is a review of previous information and resource estimates performed by South Star Mining on the Santa Cruz Graphite Project and incorporates new field investigations and drilling results into an updated resource estimate.

All measurements used in this report are presented in metric units and monetary units are presented in United States dollars (USD). Geographic units are presented in UTM coordinate system based on SAD 69 Datum with units of meters, except where noted in latitude and longitude. A table of abbreviations is presented in Table 2.

Table 2 – List of Abbreviations

Tonnes or mt	Metric Tonnes
Tpa	Tonnes per Year
Tpd	Tonnes per Day
Kg	Kilograms
Ha	Hectares
M	Meters
Km	Kilometers
m ³	Cubic Meters
°C	Degrees Celsius
G	Grams
C	Carbon graphite
g/t	Grams per Tonne

2.6 EFFECTIVE DATE AND DECLARATION

The effective date of this Technical Report is June 30th, 2019. The Authors believe that the basic assumptions contained in the information above are factual and accurate, and that the interpretations are reasonable. The Authors have relied on this data and have no reason to believe that any material facts have been withheld. The Authors also have no reason to doubt the reliability of the information presented herein.

2.7 SITE VISIT

Site visit occurred on June 17 and 18, 2019 by the team listed below:

- Luiz Eduardo Pignatari (QP Resources/Reserves) - Mining Engineer;
- Maurício Prado - Senior Geologist;
- Nestor Alvarez - South Star Senior Geologist

3.0 RELIANCE ON OTHER EXPERTS

The following professionals have been consulted in the making of this report, regarding specific project information:

- Aldo Moreno – (2017 PEA QP Resources) - Senior Geologist
- Nestor Alvarez - South Star Senior Geologist
- Juan Manuel Alvarez - South Star Senior Geologist

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 PROJECT OWNERSHIP

Brasil Grafite S.A., a wholly owned subsidiary of South Star, holds 100% interest in the Santa Cruz Graphite Project. The current ownership structure of Santa Cruz Project is presented in Figure 1.

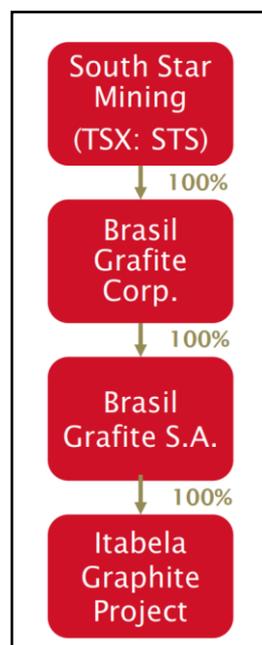


Figure 1 - Santa Cruz Graphite Project Ownership

4.2 PROJECT LOCATION

The Project is located near the town of Itabela in the southern part of the state of Bahia, Brazil. According to the 2010 census, Itabela is a town with approximately 28,500 inhabitants and is accessible via 90 km of paved federal highways from the International Airport in Porto Seguro, Bahia. The airport is served with daily national and international flights. The main mineral target is centered on coordinates UTM: E:435,640m and N: 8,169,520 m. A location map is presented in Figure 2.

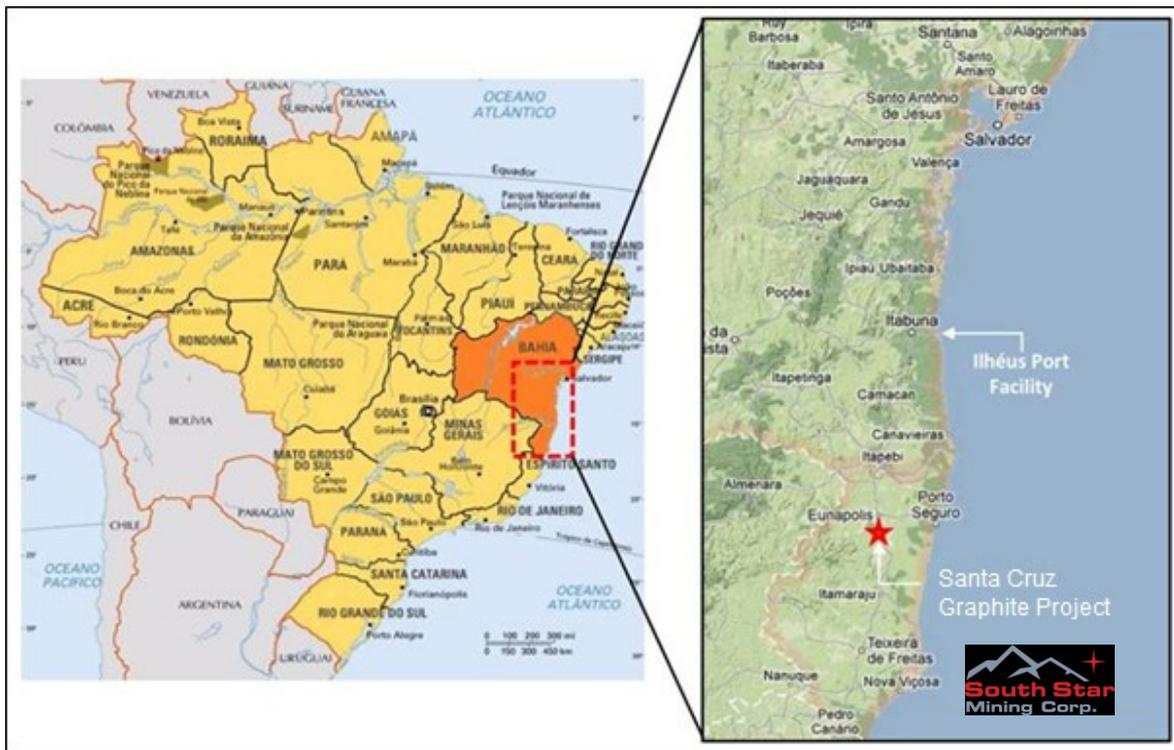


Figure 2 - Project Location Map

4.3 MINING TENURE AND PROPERTY DESCRIPTION

4.3.1 MINING TENURE

Within the 1988 Brazilian Federal Constitution, mineral resources are defined as assets of the Federal Government. The legal right to mine is assigned to the mining company by the Federal Government of Brazil in the form of a Mining Decree in accordance with the Mining Code that was originally established under Decree Law No. 227, dated February 28, 1967. Under Brazilian law there is a separation of the surface rights from the mineral rights. A company or individual may hold valid mining rights from the Federal Government but must still negotiate legal access with the surface rights holder.

The Mining Code, which has been amended several times since passage, addresses both issuance of exploration permits as well as a Mining Concession permit (Mining Decree), which is issued after the project proponent has demonstrated the technical and economic viability of the project. The Mining Decree, along with the appropriate environmental permitting forms the basis of the right to mine a mineral

deposit. The mining decree is granted for a specific area and for the exploitation of a specific mineral.

EXPLORATION LICENSE

The Federal Department responsible for issuing the mining rights is the National Mining Agency (Agência Nacional de Mineração, ANM). Exploration licenses are typically granted for 3 years and can be extended for an additional 3 years maximum, subject to ANM approval. An exploration license allows the holder to explore for minerals in the granted concession, but not to conduct commercial mining.

License applications must include applicant details, the elements or metals to be explored for, the application license area, and be accompanied by stipulated technical documents that have been prepared under the responsibility of a qualified geologist or mining engineer. Such documents typically include budget forecasts for the planned exploration program, maps of the intended area, payment of governmental fees and taxes, and proof of sufficient funds or financing for the investment forecast set forth in the proposed exploration plan. Licenses are deemed granted when published in the National Official Gazette.

In order to renew the exploration license, ANM shall take into consideration the development of the work performed. The request for renewal of the exploration license must be presented 60 days prior to the expiration date of the original license. As to the renewal request, a report must be presented of the work already carried out, indicating the results achieved, as well as reasons justifying continued work. The renewal of the exploration license does not depend on the publication of a new license, but only on the publication of the decision to renew.

A final exploration report summarizing the economic viability and technical feasibility of the claim must be supplied to ANM prior to the expiration of the granted time period.

Such report must be prepared under technical responsibility of a legally qualified professional and must also contain:

- (i) Information on the area means of access and communication;
- (ii) Plan of the geological survey;
- (iii) Description of the main aspects of the deposit;
- (iv) Quality of the mineral substance and definition of the deposit;

- (v) Genesis of the deposit, as well as its qualification and comparison to similar deposits;
- (vi) Report of the industrialization assays;
- (vii) Demonstration of the economic feasibility of the deposit; and
- (viii) Necessary information for the calculation of the reserve, such as the density, area, volume and content.

The final exploration report must be presented independent from the results of the work and shall conclude the existence or non-existence of a mineral deposit that can be further developed and exploited. Approval of the report is not discretionary and as long as a drilled mineral deposit can be confirmed, ANM shall grant authorization for the company to move forward towards a mining license; typical process period is from 6-12 months. The holder of an exploration license who does not present a final exploration report within the date established by the regulations will be fined. Nevertheless, the exemption from presentation of the report is permitted in certain cases of license relinquishment by the titleholder. ANM must confirm the relinquishment, provided it happened in one of the two following instances:

- (i) At any time, if the titleholder has not been successful at entering the area, despite all the efforts made, including judicial means; or
- (ii) Before one-third (1/3) of the term of duration of the exploration license has passed.

A concession holder has approximately one year from approval of the report to apply for a mining concession or to transfer its right to apply for it to a third party. The application period may be extended for longer than a year at the discretion of ANM, if requested by the holder prior to the expiration date, with necessary motivations and justifications (for example more time for obtain environmental approvals or conduct better studies on economic viability and technical feasibility).

TRIAL MINING LICENSE

It is possible to extract mineral substances before the mining concession is granted, by means of a Trial Mining License (“Guia de Utilização”). Extraction may only

occur if the interested party has obtained a proper environmental license, and has entered into an agreement with the surface owner as to the extraction work.

The Trial Mining License may be granted by ANM for the extraction of up to 5,000 tons of product per year of graphite, for each exploration license.

The holder of an exploration license in which the Trial Mining License has been granted shall be responsible for the payment of the Financial Compensation for the Exploitation of Mineral Resources (CFEM).

MINING LICENSE

In cases where the exploration potential of concessions is proven to be economically viable, the exploration license may be converted into a mining concession by completing an exploration study to quantify the existence of mineral resources, a feasibility study to show technical feasibility and economic viability of the project, and the granting of the environmental license to mine the concession.

ANM is obliged to grant a mining concession if the required studies have been completed and indicate a commercially viable mining operation. Mining rights can be denied in some circumstances, as for example where a public authority considers that a subsequent public interest exceeds that of the utility of mineral exploration. Where the concession is not granted, the Brazilian Federal Government must compensate the mining concession holder.

Once the legal and regulatory requirements are met, including the proper environmental licensing (which varies according to the State), and the Economic Feasibility Plan is approved by ANM, the mining concession is granted through a “Portaria de Lavra”. Concessions are deemed granted when published in the National Official Gazette.

Brazilian mineral legislation does not establish the duration of mining concessions. The concessions remain in force until the complete exhaustion of the deposit.

The holder of a mining concession:

- (i) Has the exclusive right to execute the mining work for the mineral substances specified and indicated in the concession title and within the authorized area. However, if another substance is found in the authorized area, the titleholder may request an addendum to the concession, so that the new substance is also included in the concession;

- (ii) Has the right to temporarily suspend mining work;
- (iii) May obtain easements on the property where the mine is located, as well as on bordering and neighboring properties, with prior indemnification; and
- (iv) May divide the concession into 2 or more distinct concessions, provided that it is not harmful for the development of the deposit.

The holder of a mining concession has the following obligations:

- (i) To start the mining work as per the development plan, within six months from the date of the publication of the concession in the Official Gazette of the Republic;
- (ii) To execute the work in accordance with the development plan approved by ANM;
- (iii) To extract solely the substances indicated in the concession;
- (iv) To communicate to ANM the discovery of a mineral substance not included in the concession title;
- (v) To carry out the work in accordance with regulatory norms;
- (vi) To offer the management of the work to a duly qualified technician;
- (vii) Not to make it neither difficult nor impossible to use and exploit the deposit in the future;
- (viii) To be responsible for the damage and loss caused to third parties, resulting from the mining work;
- (ix) To promote and improve safe, healthy lodgings at the location;
- (x) To avoid water diversions and to not use an amount that can cause harm and loss to neighbors;
- (xi) To avoid air or water pollution resulting from the mining work;
- (xii) To protect and preserve the water sources, as well as to use them according to the technical instructions and requirements when dealing with mineral water deposits;
- (xiii) To observe and comply with all the provisions of the inspection entities;
- (xiv) Not to interrupt the mineral activities without notice to ANM;
- (xv) To keep the mine in good condition when temporarily suspending the mining work;
- (xvi) To restore the areas degraded by the mining work; and
- (xvii) Advise of the discovery of radioactive minerals.

4.3.2 PROPERTY DESCRIPTION

The Santa Cruz Graphite Project consists of 13 approved exploration licenses in the State of Bahia totaling 13,316.4 Ha. A summary table is presented in Table 3. A location map containing all mineral rights is presented in Figure 3. All concessions, taxes and payments are current as of the publication of this report.

Table 3 – ANM Claims Summary Table

No. Concession	State	Mineral	Area (ha)	Publication Date	Status
871,722/2010	BA	Graphite	1999.84	15/12/2010	Approved Exploration License – (final exploration report submitted)
872,328/2010	BA	Graphite	948.30	06/04/2011	Approved Exploration License – (final exploration report submitted)
872,329/2010	BA	Graphite	918.21	06/04/2011	Approved Exploration License – (final exploration report submitted)
872,732/2010	BA	Graphite	994.39	13/05/2011	Approved Exploration License – (final exploration report submitted)
872,733/2010	BA	Graphite	988.62	13/05/2011	Approved Exploration License – (final exploration report submitted)
872,734/2010	BA	Graphite	799.99	13/05/2011	Approved Exploration License – (final exploration report submitted)
872,735/2010	BA	Graphite	985.58	26/04/2011	Approved Exploration License – (final exploration report submitted)
872,736/2010	BA	Graphite	931.66	26/04/2011	Approved Exploration License – (final exploration report submitted)
872,737/2010	BA	Graphite	947.57	26/04/2011	Approved Exploration License – (final exploration report submitted)
872,874/2010	BA	Graphite	934.00	26/04/2011	Approved Exploration License – (final exploration report submitted)
871,052/2011	BA	Graphite	979.50	04/07/2011	Approved Exploration License – (final exploration report submitted)
871,053/2011	BA	Graphite	936.94	04/07/2011	Approved Exploration License – (final exploration report submitted)
871,524/2013	BA	Graphite	951.26	11/12/2013	Approved Exploration License – (final exploration report due Dec20)

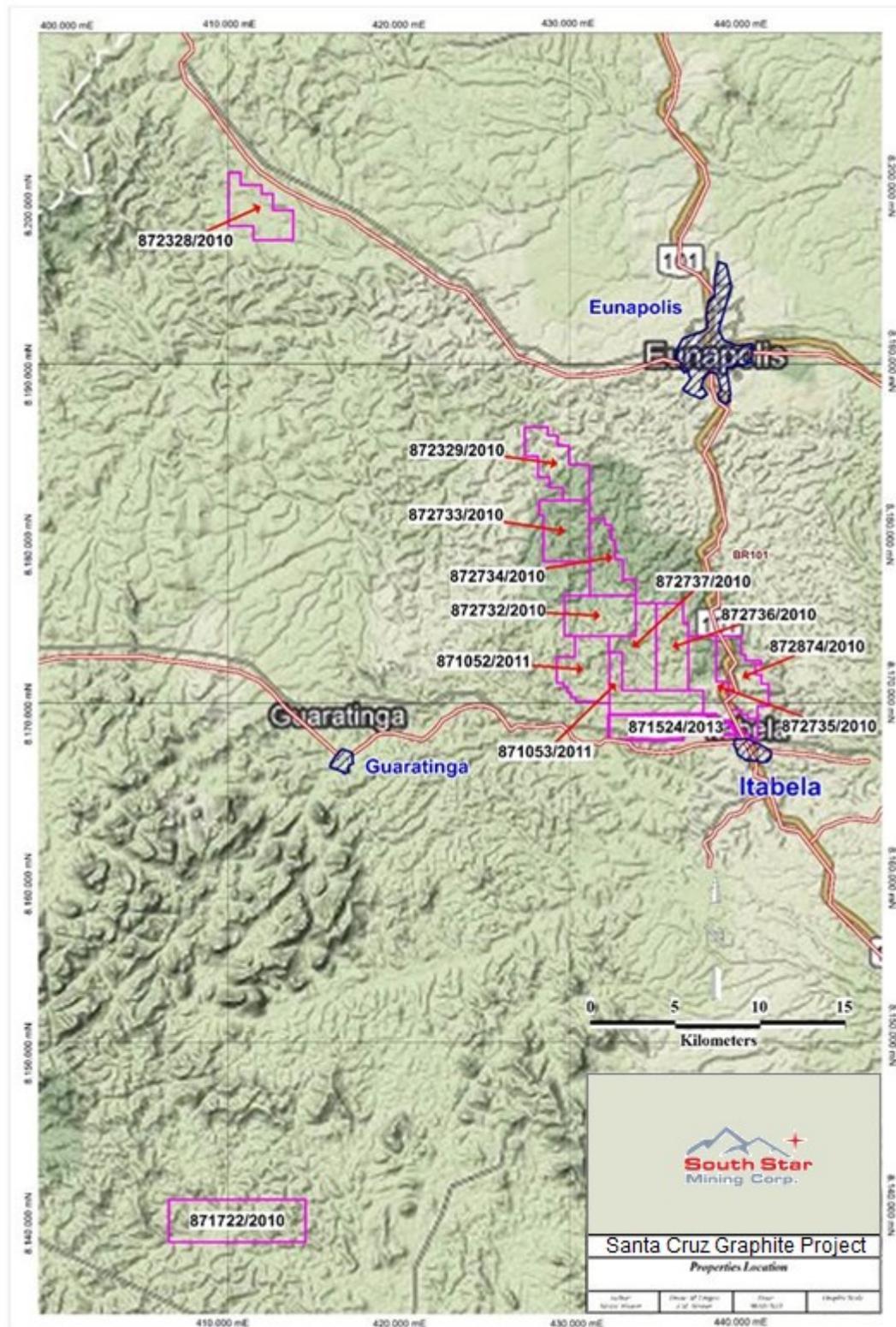


Figure 3 - Claims Location Map

4.4 PROPERTY OWNERSHIP

Under Brazilian law, mineral rights and surface rights are separate. A mining company may hold valid mineral rights but must still negotiate with the surface rights owner. There is a legal process for the equivalent of condemnation of the surface rights if a negotiated settlement with the surface owner cannot be reached.

For exploration and prospecting licenses, a concession holder may negotiate payment to the surface rights owner as compensation for land use and any damage caused by exploration activities. In cases where an agreement is not reached between the involved parties (mining rights holder and surface rights owner) with regards to the indemnification amounts to be paid and/or the landowner does not allow the company's employees to access the area, the mineral rights holder is guaranteed legal access through a judicial process and court order.

For mining licenses, the holder must pay the surface rights holder 50% of the Financial Compensation for the Exploitation of Mineral Resources (CFEM). Holding a valid agreement with the surface rights holder is a pre-requirement for mining lease grant. If no agreements can be reached, judicial processes can be used.

Agreements are currently in place for exploration activities with the owners of the surface rights for the principal exploration targets. These agreements have been registered with ANM.

4.5 ROYALTIES AND AGREEMENTS

There are two main types of levies payable by mining companies: an annual tax per hectare (TAH) and the CFEM (Financial Compensation for the Exploitation of Mineral Resources). The TAH is payable by the exploration license holder annually to ANM (Law No. 7,886/1989 and Law No. 9,314/1996). This tax is currently charged on a fixed value set forth in ANM Ruling No. 163/2014 (Portaria do Diretor-Geral do ANM), and consists of approximately R\$2.61/ha for exploration licenses during the duration of the original license grant term, increasing to R\$3.95/ha for licenses where an extension of term has been granted.

The CFEM is based on the net revenue from the sale of a mineral product, defined as the total of sales less taxation, transportation and insurance expenses. The rate to be applied varies according to the mineral product. Currently, ANM levies are:

- Gold: 1.0%
- Bauxite, manganese ore, rock salt and potassium: 3.0%
- Precious carbon, colored, cut table stones and precious metals: 0.2%;
- Iron ore, fertilizers, mineral coal and other mineral substances: 2.0%.

Graphite is taxed at a 2.0% rate. Penalties are imposed if either payment is not made and can vary from a letter notice to concession forfeiture. No additional royalty payments, option agreements or encumbrances have been identified at this point.

4.6 ENVIRONMENTAL PERMITS AND LIABILITIES

4.6.1 ENVIRONMENTAL PERMITS

The Brazilian Federal Constitution addresses environmental and social impacts of mining projects. Overall environmental regulations are a federal responsibility developed by the Ministry of Environment (Ministério do Meio Ambiente). Implementation is by the National Council of Environment (Conselho Nacional do Meio Ambiente or CONAMA), which formulates the standards and policies under which environmental regulations are implemented. Control and supervision of the environmental licensing process is with the Brazilian Institute of Environment and Renewable Resources (Instituto Brasileiro do Meio Ambiente e Recursos Naturais Renováveis or IBAMA). While IBAMA is the lead licensing agency and is responsible for overseeing the process, in practice, state environmental protection agencies generally review and authorize the environmental licenses.

Environmental licenses for new mining operations are provided in three stages:

1.) A preliminary license (Licença Prévia - LP) can be awarded at the time the environmental impact analysis has been approved. An Environmental Impact Assessment (“EIA”) must be executed, and the respective Environmental Impact Report (“RIMA”) must also be produced at this time. An EIA/RIMA submission is required for this permit together with some further documents. This permit approves the project site location and conceptual design while evaluating the social and environmental feasibility of the proposed project. This phase defines the basic design and determining factors to be

considered in the subsequent stages of implementation. The permit can be valid for up to five years.

2.) Construction or Installation License (Licença de Instalação - LI) at the time detailed design of the facility is completed and determined to comply with the requirements established in the preliminary license. For this stage, the project proponent has to submit the Environmental Control Plan (Plano de Gestão Ambiental – PGA) and complete other requirements and supply further documentation about the project. This permit provides authorization for the construction of a project and its infrastructure, in accordance with the specifications set out in the approved plans, drawings, and designs including the PGA and all other determining factors that are required for approval. The permit can be valid for a period of up to six years depending on the project schedule.

3.) An operating license (Licença de Operação - LO) at the time the project is constructed and has been determined to comply with the environmental standards. This permit provides authorization for the operation of the facility or project, following verification of effective compliance with the requirements of the Installation Permit (LI). The permit is valid for a minimum of four years and a maximum of ten years, depending on the impact classification and is renewable, based upon the environmental compliance record as determined by IBAMA.

4.6.2 ENVIRONMENTAL PERMITS FOR THE TRIAL MINING LICENSE

As mentioned before, it is possible to extract mineral substances before the mining concession is granted, by means of a Trial Mining License (“Guia de Utilização”), but the extraction may only occur if the interested party has obtained a proper environmental license.

For purposes of obtaining the environmental license, the holder shall request an Environmental Authorization (“Autorização Ambiental”), under the terms of State Law no. 10,431/2006 and its respective Decree no. 14,024/2012 as amended by Decree no. 15,682/2014 (article 142-B ‘I’).

4.6.3 VEGETATION SUPPRESSION AUTHORIZATION

If the holder of an exploration license intends to suppress native vegetation in the area of its activities, it shall first obtain the proper environmental license.

For purposes of obtaining the environmental license, the holder shall request an Environmental License (“Licença Ambiental”), under the terms of State Law no.

10,431/2006 and its respective Decree no. 14,024/2012 as amended by Decree no. 15,682/2014 (article 142-B, sole paragraph, 'I')

4.6.4 WATER RIGHTS

Under Brazilian Law No. 9,433/1997, a number of water usages are regulated, including:

- Diversions or impounding of water existing in a water body for final consumption, including public supply or productive process;
- Impounding of water from an underground water body for final consumption or productive process
- Disposal of sewage waste and other liquid or gaseous residues, whether treated or not, into a water body for dilution, transportation or final disposal;
- Other uses that alter the system, quantity or quality of the water existing in a water course or body.

A water permit has a maximum term of 35 years and can be renewed. Permits typically have conditions attached, which primarily relate to compliance with the Water Resources National Plan and the watercourse quality maintenance. Exploitation of water resources is under the jurisdiction of ANM and is subject to similar reporting and jurisdictional requirements as other mineral types.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESSIBILITY

Santa Cruz Graphite Project is located near the town of Itabela in southern Bahia and is accessible via 90 km of paved federal highways BR367 and BR 101 from the International Airport in Porto Seguro, Bahia. The airport is served with daily national and international flights. A location map is presented in Figure 4.

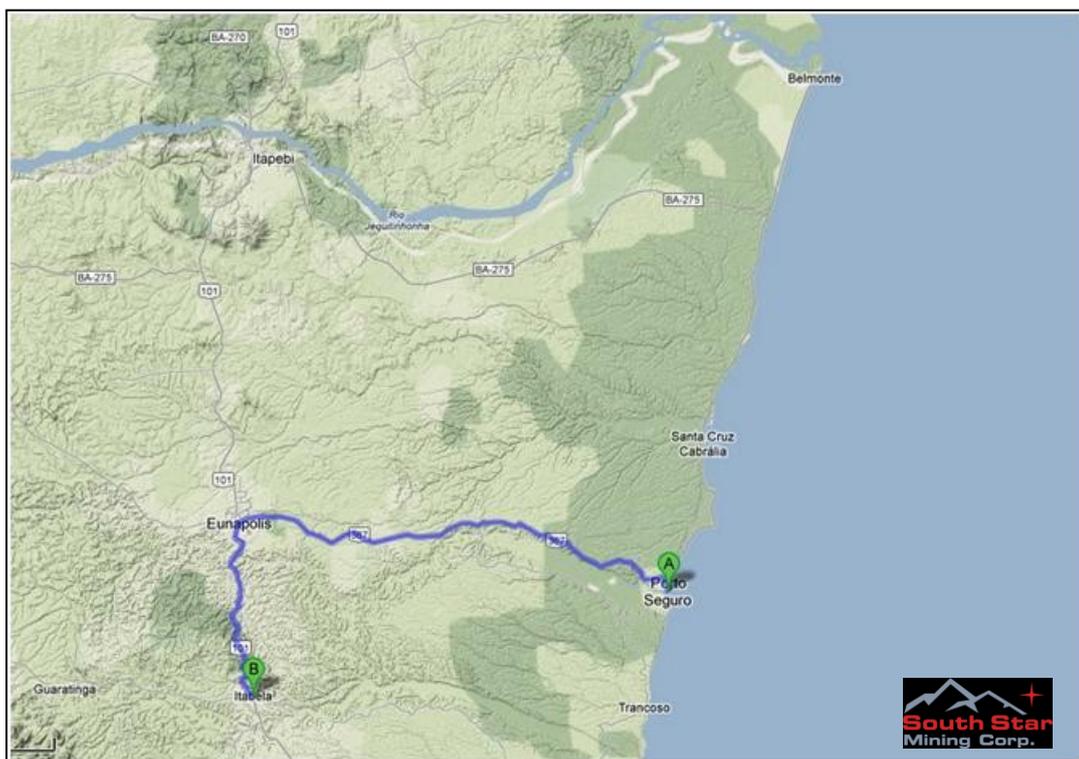


Figure 4 - Accessibility Location Map

5.2 CLIMATE

The climate is greatly influenced by the coastal proximity and the project area is classified as humid-tropical according to the Koppen-Geiger climatological system. Precipitation averages 1238 millimeters a year with rainfall throughout the year, although it is noticeably less in the winter seasons of May through September. Temperatures in

general are high with monthly averages varying between 22 °C to 26 °C. Average monthly climate data for Itabela is presented in figure 5.

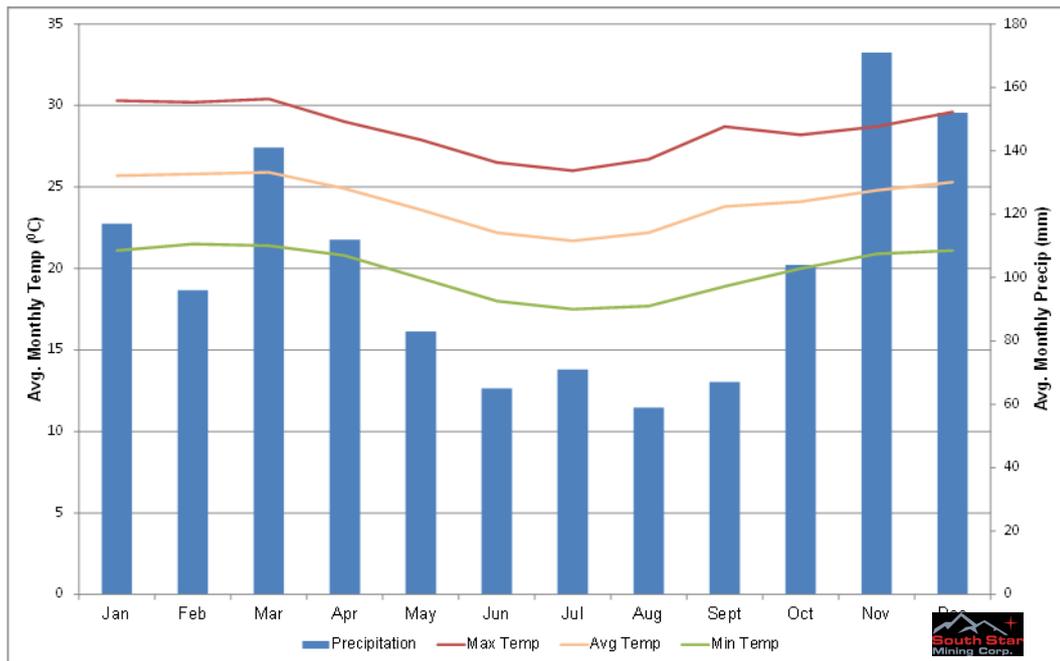


Figure 5 - Average Monthly Precipitation

5.3 LOCAL RESOURCES, INFRASTRUCTURE AND LOGISTICS

The project area is located in a rural area of southern Bahia with the main population center being Eunápolis, which is located approximately 28 km to the north of Itabela. Eunapolis has approximately 100,200 inhabitants, while Itabela has a population of about 28,500, according to the 2010 census data. Basic services are available in Itabela, while medical services, hospitals, banks, commercial centers, schools and other services are available in Eunápolis.

The deepwater port of Ilhéus is approximately 270 km to the north on paved federal highways BR 101 and BR 415. The port is administered by the Companhia Docas do Estado da Bahia (CODEBA) whose capacity is currently being expanded in order to accommodate the new West-East Railway (“FIOL”). This will serve as the basis for potential graphite exports.

Energy in the region is administered by Companhia de Electricidade do Estado da Bahia (COELBA) and there is a high-tension line within 1 km of the plant site. Natural gas can be supplied by truck and stored in large tanks on site. In addition, one of the most

important natural gas pipelines in Brazil (“GASENE”) passes within 5 km of the Project, and it may be possible to supply the Project demand from the pipeline.

Project water supply will be provided from on-site sources. Wells or a small water dyke will be the primary water supply dam with basin inflows being captured and stored for use as freshwater make-up for plant demand. Drinking water shall be provided by wells or there may be a possibility of bringing a treated water line from Itabela, which will be investigated at future project stages. A small wastewater facility may be constructed on site or a septic system installed with waste trucked to Itabela for treatment. Solids waste will be trucked to the Itabela landfill for disposal.

5.4 PHYSIOGRAPHY

The project area lies within the Southeast Atlantic hydrographical basin, which incorporates parts of the states of Sergipe, Bahia, Minas Gerais and Espírito Santos. The principal rivers include Paraguaçu de Contas, Salinas, Pardo, Jequitinhonha, Mucuri and Itapicuru. The main project area is located between the Rivers Jequitinhonha and Mucuri in relatively hilly terrain with elevations varying between 125 m and 280 m. The area around the principal target has suffered from extensive anthropogenic disturbances and little native vegetation remains. Currently, land use is mostly rural pastureland for cattle along with some small-scale agriculture and eucalyptus plantations. There are also several small dams constructed for watering livestock. The principal geologic target is in the lower portions of the valley and mineralization appears to follow the low laying areas and valley bottoms. Direct project access is good via unpaved gravel roads.

6.0 PROJECT HISTORY

The Santa Cruz Graphite Project is a recent discovery with no known exploration work prior to 2012 or previous reports currently identified in the project claims area. The Project lies within one of the most active graphite provinces in the world with 3 operating mines: Pedra Azul, MG (~36,000 t/year), Salto da Divisa, MG (~18,000 t/year), and Maiquinique, BA (~30,000 t/year) along with several development projects and exploration targets.

According to the most recent edition of the Brazilian Mineral Yearbook, which was published in 2010, Brazil has approximately 119,000,000 tonnes of graphite mineral resources identified with 95 percent of this vast reserve being within a 170 km radius of the Santa Cruz Graphite Project. Table 4 provides a summary of the Brazilian graphite estimates by region and figure 6 presents the project along with other mines and development or exploration projects in the area.

Table 4 –Brazilian Graphite Resources (2009)

Municipality	State	Resource (Tonne)
Eunapolis	BA	404,547
Guaratinga	BA	3,136,913
Maiquinique	BA	8,566,228
Total:		12,107,688
Baturité	CE	1,040,000
Total:		1,040,000
Almenara	MG	5,329,833
Arcos	MG	3,157
Cachoeira de Pajeú	MG	218,715
Carmo da Mata	MG	423,136

Itapecerica	MG	1,222,952
Itaúna	MG	126,733
Jordânia	MG	751,512
Mateus Leme	MG	1,994,367
Pedra Azul	MG	29,793,054
Salto da Divisa	MG	64,918,692
Santo Antônio do Monte	MG	657,754
São Francisco de Paula	MG	33,404
Total:		105,476,311
Total Brazil:		118,620,999

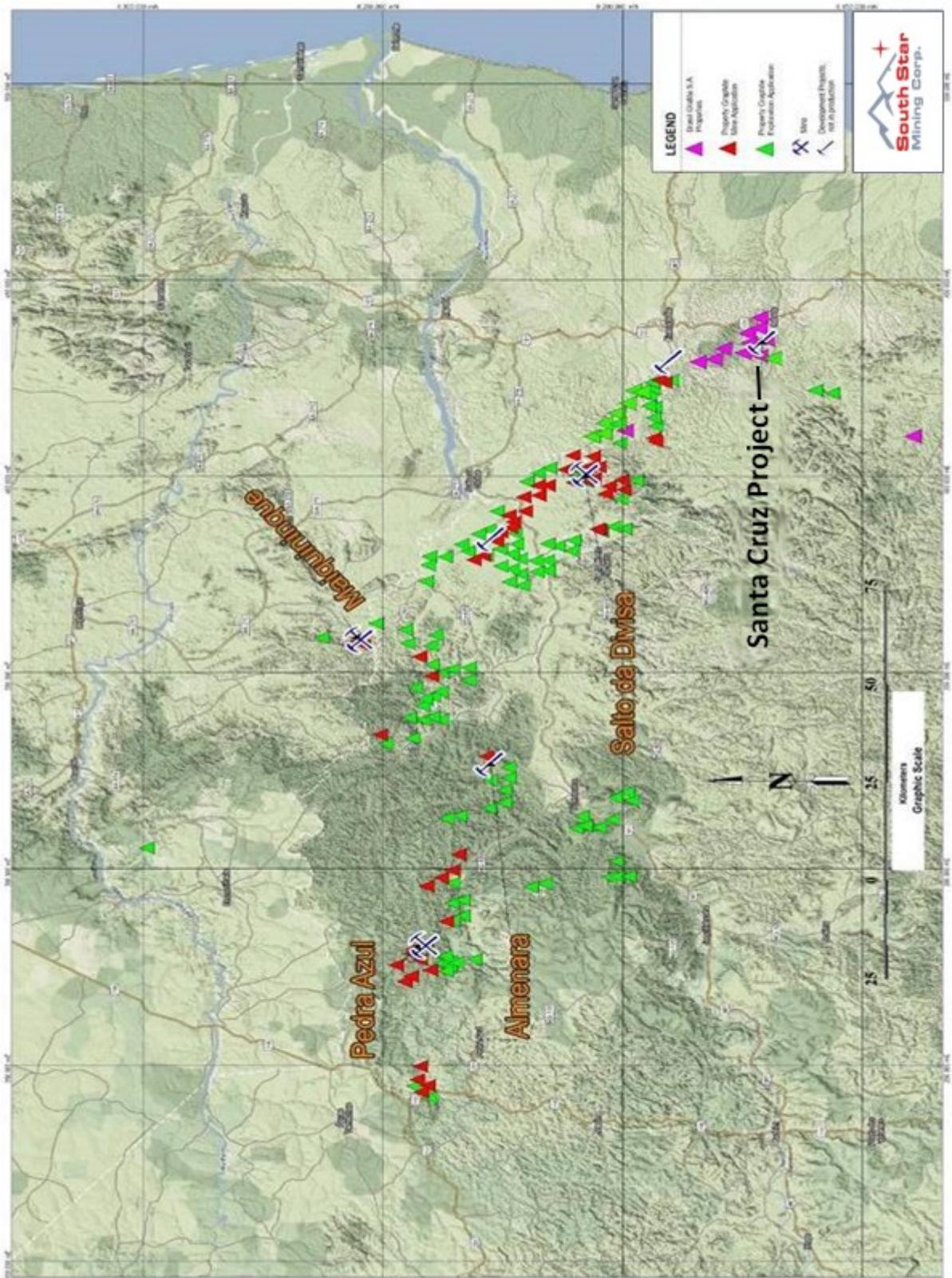


Figure 6 - Nearby Mines, Development Projects and Exploration Target

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

The Project is located in the belt known as the Araçuaí Orogen, (Bahia State, Brazil). The Araçuaí Belt is a Brazilian orogenic domain developed along the southeastern margin of the San Francisco Craton and is now viewed as part of the external zone of the so called Araçuaí - West Congo orogen. The terrain between the Araçuaí Belt and the Brazilian continental margin exhibits a whole series of complex features that is confined to a tongue-shaped enclave between the San Francisco and Congo Cratons.

The Araçuaí - West Congo Orogen can be subdivided into ten compartments with the project hosted within the core zone.

The tectonic evolution of the Araçuaí - West Congo orogen can be best explained by a model that involves the closure of the Macaúba basin which is partially floored by oceanic crust. It began around 880 Ma through a mechanism that resembles the operation of a nutcracker. The San Francisco and Congo cratons acted like the pincers of the nutcracker.

The Project is hosted in the core of this orogen, and the metamorphism of this area is the highest inside this region, reaching the amphibolite - granulite grade with anatexis reached in some areas. Different authors mention that the age for this metamorphism ranges from 585 to 560 Ma, related to the syncollisional stage (Carlos Mauricio Noce, Antonio Carlos Pedrosa - Soares and other et al 2016 Jequitinhonha Complex). In these zones, there are many outcrops of gneisses and paragneisses assigned to the Jequitinhonha or Paraíba do Sul complex. In this group, we can see the development of a granite body synkinematic to the regional foliation.

The complex of paragneisses, known as Kinzigitic, are rocks composed essentially of paragneisses with variable contents of peraluminous silicates, such as biotite, almandine, cordierite, sillimanite, kinsigite (stricto sensu is the graphite) - sillimanite - cordierite - garnet - biotite gneiss and the rock composed of different amount of these peraluminous silicate associated to quartz - K - feldspar, plagioclase and a trace of

graphite. The Kinzigite protolith is a pelite rich in aluminous clay fraction, with minor carbonaceous material, such as paragneiss. The kinzigite characterizes the metamorphism of pelites in the high amphibolite-granulite facies. It is generally accompanied by a profuse partial melting as shown in Figure 7.

These Jequitinhonha complex gneisses have strong deformation and present granite, pegmatite and migmatite developments, which are products of partial anatexis. Regarding the granites and pegmatites, they can be concordant with the lithology, but in some cases cut the stratification and migmatite level is normal to the stratigraphic column. Sometimes these granites and pegmatite bodies can have graphite development near the borders. Finally, in the Cretaceous age there was sedimentation of unconsolidated sandstone and basal conglomerate that covered the top of small hills, which is called Barreiras formation.

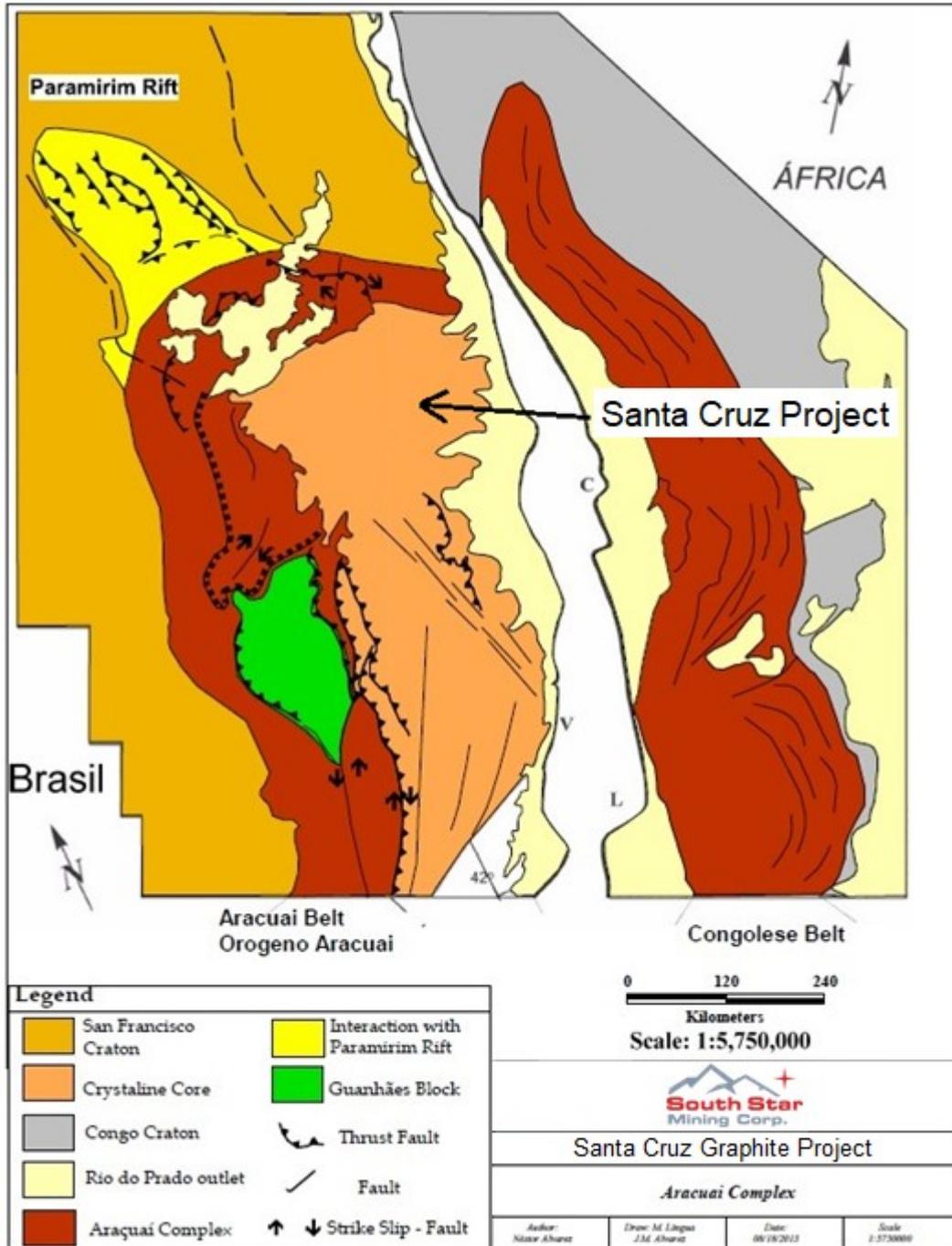


Figure 7 - Project locations in the Araçuaí Orogen

The Kinzigitic complex is subdivided into three main units: Unit a) is the rock assemblage of the Kinzigitic Complex exposed in the southern region of Espírito Santo State, south of Victoria City, this sub-unit is characterized by thick layers of marble enveloped by paragneisses.

Unit b) is the rock assemblage of the Kinzigitic complex exposed in the northern region of Espírito Santo State and eastern Minas Gerais State, particularly in the region of

the Rio Doce and Mucuri Rivers. The geologic section that has been studied by Pedrosa - Soares and collaborators, suggests that this sub unit is rich in Kinzigite, has less aluminous paragneisses and is very poor in the other rocks referred to above.

Unit c) is exposed in the northeastern region of Minas Gerais State (north of Mucuri River) and the southernmost region of Bahia State. This unit comprises the rock assemblage of the Kinzigitic Complex, rich in graphite gneiss and quartzite intercalations. The layers and lenses of graphite gneiss are of major economic importance because they include the most important deposits of flake graphite that have been explored and mined in South America, including where the projects located.

As shown in Figure 8 there is a large belt with development of different graphite deposits and projects between the Bahia and Minas Gerais State in Brazil, but with an important difference: the eastern sector location developed a higher-grade metamorphism, as mentioned before, and also has the best large flake deposits in Brazil. This sector is where the Santa Cruz Project is located.

The structural domain varies through the Araçuaí Orogen. The Project is located in a zone of higher metamorphism with strong deformation, which has attained a degree of partial melting (anatexis). Regionally, an overturned fold can be recognized, especially in the Jequitinhonha Group, which has been affected by thrust and transtentional faults and can be recognized in a large lineament via satellite imagery that points towards the main deposit and other mineralized target areas.

For this reason, the main and higher-grade mineralizations appear in lenses associated with the bedded and folded structure, especially in the anticline zone. In the regional domain the structure can have a N-S strike to NW- SE with overturn folds.

In the district and the regional zone there is much evidence of anatexis, as shown in Figure 8. This figure demonstrates the type of folds of second or third order in the large structure. Figure 9 displays the regional geology.



Figure 8 - Second order folds that affects the rocks

Regional and detailed local geologic maps and cross-sections for the mineralized areas are presented in Appendix 2.

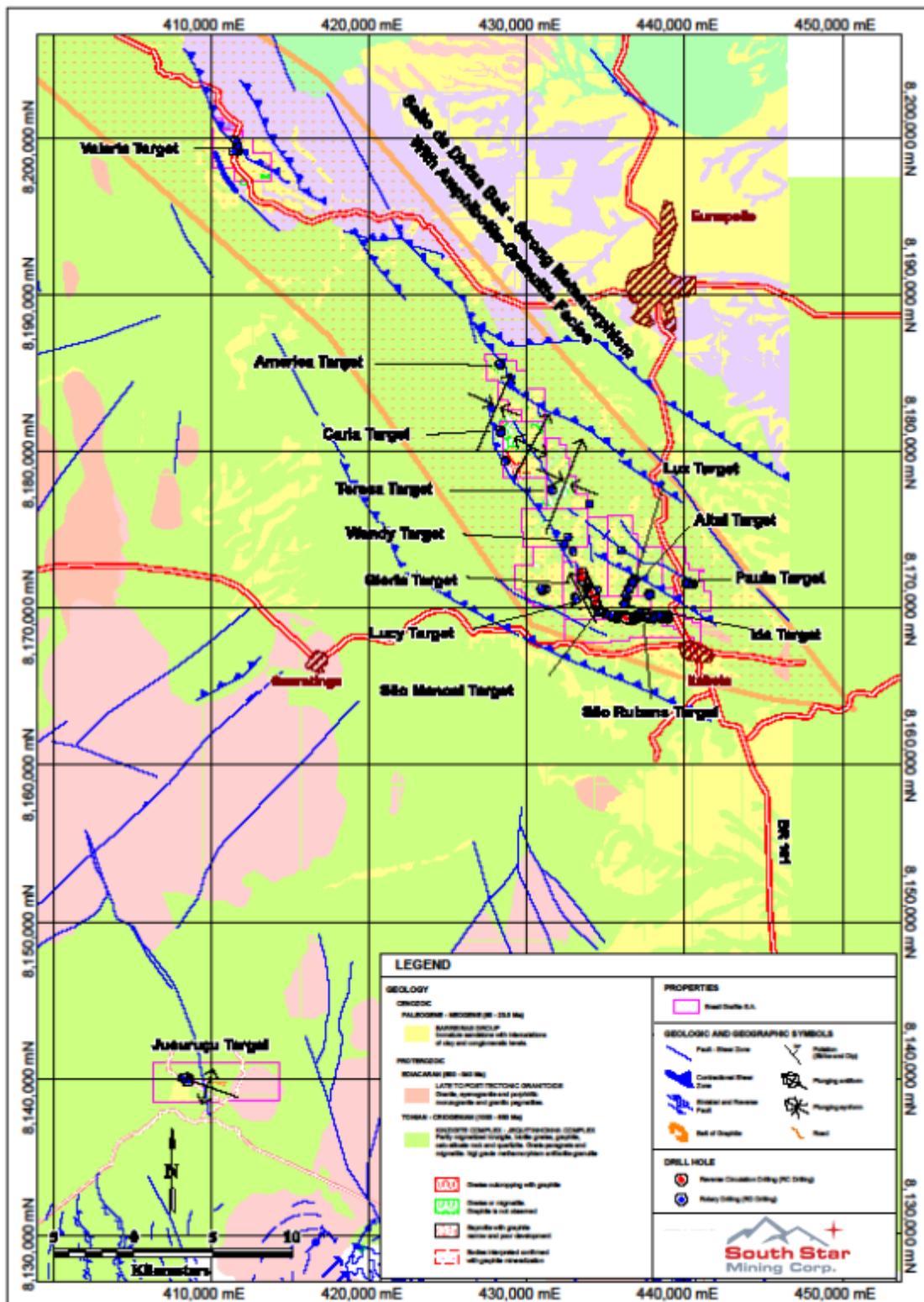


Figure 9 - Regional Geology and Projects

7.2 LOCAL GEOLOGY

The main target area is located near the town of Itabela and is comprised of two continuous mineralized zones denominated as São Manuel and São Rubens. The southernmost claim (871,722/2010) has a large mineralized target denominated Jucuruçu. Local geologic mapping was focused on the main target areas with less detail available on secondary targets and throughout the main properties.

The main targets of São Manuel and São Rubens show a continuous, between both the mineralization run by over 8 km, and in general mineralization follows the soft material and structural control along the valley floor. Secondary targets have been identified and include Paula, Altai, Ida Gloria and Lucy, amongst others. Many of the hillsides are covered with the Barreiras Formation, which is not mineralized, while towards the creek and valley bottoms some outcrops of gneiss and migmatite from the Jequitinhonha complex or Kinzigitic complex are present. To the east there are strongly foliated granites, which are likely of similar age to the Kinzigitic Complex. In general, gneiss and migmatite are located below the Barreiras Formation with an angular unconformity. In the district, there are other intrusive bodies present with strong foliation. To the north of the district there is a contact with the Rio Pardo Group (composed of meta-limestone, meta-dolomite, quartzite and phyllite) and the Kinzigitic Complex. The Rio Pardo Group is assigned an early Precambrian age, around 800. age

The district where the Salto da Divisa operating mine and Santa Cruz Project are located has a complex and long structural history, but the main, significant control is a regional fault with a NW-SE strike. This control is a sinistral thrust fault, based on the presence of second order folds on the São Manuel target, seen on figure 9, and, in general, the fault dips N-E, depending on the strike position. This fault likely controls the graphite mineralization as well as the granite and granodiorite intrusion of Cambrian age.

This regional fault has an Az 350° strike in the São Manuel target changing to Az 290° strike in the São Rubens target. This fault and the presence of soft materials appear to provide a structural control for mineralization (see cross-sections in Appendix B).

The southernmost Jucuruçu property is mainly composed of granites and granodiorites along the ridges, which are generally pink feldspar and biotite. These outcrops are Cambrian Age, or Suite 4 as commonly referred to by the Brazilian geologic community. Some folds with NE-SW strikes that plunge to the north are present along the north of the property. These folds are an anticline and syncline dome zone.

7.3 MINERALIZATION

As previously noted, the Project is located within a region where mineralized deposits are hosted in paragneisses with higher degrees of metamorphism between amphibolite and granulite with intense anatexis. In general, the mineralization is structurally controlled by the shearing zone along the regional fault and the presence of softer materials.

The Project has disseminated mineralization that is easily identified visually with +65% of flake size +80 mesh (large flake) including ~35% +50 mesh (jumbo flake) (see figures 11, 12, 13, 14 and 15), important to note both numbers are for final concentrates, hence one can assume run of mine ore has an even bigger amount of +80# flakes. Moreover, the mineralization is present in massive stratus layers found in strong association with the main structure control.

Initially, the mineralization appeared to be quite simple, and was thought to be sedimentary in nature, but after further field investigations, drilling, mapping and literature review, it is now believed that the mineralization is structurally controlled and is hosted in the many folds, shearing zones and mylonitic gneisses.



Figure 10 - Mineralized Sample - São Rubens and São Manuel.



Figure 11 - Mineralized Samples - São Rubens and São Manuel



Figure 12 - Lump Samples - São Rubens and São Manuel



Figure 13 - Typical Mineralization São Rubens and São Manuel - Graphite layers in Dark Colors and Disseminated Graphite in Lighter Colors



Figure 14 - Jumbo and Large Flakes - São Rubens and São Manuel

In general, the larger flake size appears to be associated with the higher degrees of metamorphism, while large volumes of high-grade mineralized material are often concentrated in the many folds.

The mineralized zone in the main target areas of São Rubens and São Manuel is located in the friable upper layers close to surface. There is approximately 8 km long continuous strike with widths varying from 30 to 200 meters, with some depositional areas much wider because of the presence of significant folds. Mineralization is oriented sub vertical to vertical with some holes having more than approximately 80 meters of mineralization. The ore body is open at depth and along strike. There is also the presence of disseminated mineralization in several of the channel samples taken from rock outcrops in the São Rubens target as well as in various road cuts throughout the region. São Manuel target shows foliated gneisses with Az 330°/ 90° to Az 350°/80° East strike. To the south, the bedding changes from being 90° to 65° East.

There are various secondary targets near the main target area (See Appendix 2) that are also promising:

- Paula's target is located to the east of property. It is characterized by banded and disseminated mineralization in the gneisses that strike Az 290°/ 90°. 49 rotary holes were drilled in this target intercepting a mineralized zone that is 490meters long and 20 meters wide with a general E-W strike. The samples display strong flakes with high carbon grade (And these samples have not been considered in the resource calculation because they presented a series of inconsistencies in their sample collection) This area was affected by post - mineralized faults.
- Luz's target is located toward the west of Paula's, and is composed of graphitic gneisses with a N-S/60° E strike. This zone has been less explored.
- Altai's target is located to the south west of Luz target and shows strong graphite mineralization with thick flakes. The zone has been less explored.
- Ida's target is located towards the south of Altai and shows strong graphite mineralization and thick flakes striking N-S/90°. In this area 27 Rotary holes were drilled with 11 of them showing thick and medium flakes. These were not included in the resources because they were done during the earliest phase of exploration and were not subject to standardized sampling methods.

- Lucy target is located to the west of the San Manuel target. There are 47 Rotary Drilling holes in this area with three of them showing encouraging results: FTB-004 with 3.4 meters @ 4.67% C; FTB-005 with 6.2 meters @ 3.4% C and FTB-015 with 3 meters @ 3.42% C. These holes display thick to medium flakes. This target area is 900 meters long and 20 meters wide. It is located to the west of São Manuel.
- Gloria target is located between the San Manuel and the Lucy target with a 350°/90° strike. It appears to be part of the São Manuel's antiform. The area is 280 meters long by 25 meters wide. The outcrops display thick flakes. The initial exploration results are encouraging but it is currently not part of the resource calculation.
- Other interesting targets are located towards the north of Sao Manuel and are hosted along the regional master fault. It is important to note that all of these targets have positive exploratory holes with encouraging assay results demonstrating significant resource upside potential.



Figure 15 - Rotary Drilling Team



Figure 16 - Sample Collection



Figure 17 - RC Drilling Equipment



Figure 18 - DDH Drilling Equipment

8.0 DEPOSIT TYPE

The Project can be classified as sedimentary - metamorphic. During late Precambrian age, pelites and carbon were deposited at the same time. Later in early Cambrian age, orogenic movements transformed these sediments to high grade metamorphic rocks, and these movements transformed the carbon and the hosted rock to gneiss with graphite (this type of mineralization with the different metamorphic minerals is known as the Kinzigite Complex).

The mineralization was shifted by a regional fault, which dictated alignment of the host rock (gneisses and paragneisses) and coupled with the soft nature of the graphite, made the association of such strike and fold (anticlines) changes to host mineralized zones and thicker lenses. Several deposits, including the Santa Cruz Graphite Project, are hosted in this regional area that covers over 25,000km². The region is known to produce high-quality natural flake graphite, which occurs as flat, plate-like particles with either hexagonal or angular edges. The graphite is derived from carbon rich sediments and is generally disseminated throughout the mineralized zones, but often with periodic lens-shaped pockets of higher grade materials.

Flake size has a strong impact on demand and as a result pricing, with larger flake sizes generally being higher in value. Natural flake graphite is generally classified in the industry by flake size as follows:

- 1.) Jumbo: +50 mesh (0.3 mm)
- 2.) Large: -50 mesh to +80 mesh (0.18mm)
- 3.) Medium: -80 mesh + 140 mesh (0.105 mm)
- 4.) Small: -140 mesh.

9.0 EXPLORATION

9.1 GENERAL EXPLORATION

An extensive exploration program has been completed to date resulting in the areas where current resources are defined in this report as well as confirming several other mineralized targets. Channel samples, trenches, mapping and drilling have been performed and include:

- 1) Geologic surface mapping at a scale of 1:5,000 in the main sectors of São Manuel and São Rubens and at a scale of 1:50,000 over the regional claims.
- 2) Geophysics program
- 3) Channel samples (these were not used in the resource calculations)
- 4) Surface trenching
- 5) Rotary drilling (with several twin holes drilled for confirmation)
- 6) Reverse circulation drilling in the São Manuel and São Rubens target areas
- 7) Diamond drilling in the São Manuel and São Rubens target areas.

9.2 GEOPHYSICS

A geophysics campaign has been started in the main target zone with one 460-meter-long section in the São Manuel target completed as of the publication of this report. The resistivity equipment is made by a Brazilian manufacturer and is powered by a 12-volt motorcycle battery. The current configuration can penetrate to approximately a depth of 30 - 40 meters depending on field conditions and groundwater levels, although noise and interference increases significantly in the final 10 - 15 meters. The completed cross-section location is presented in Figure 19 along with the interpretation of the section, which is presented in Figure 20.

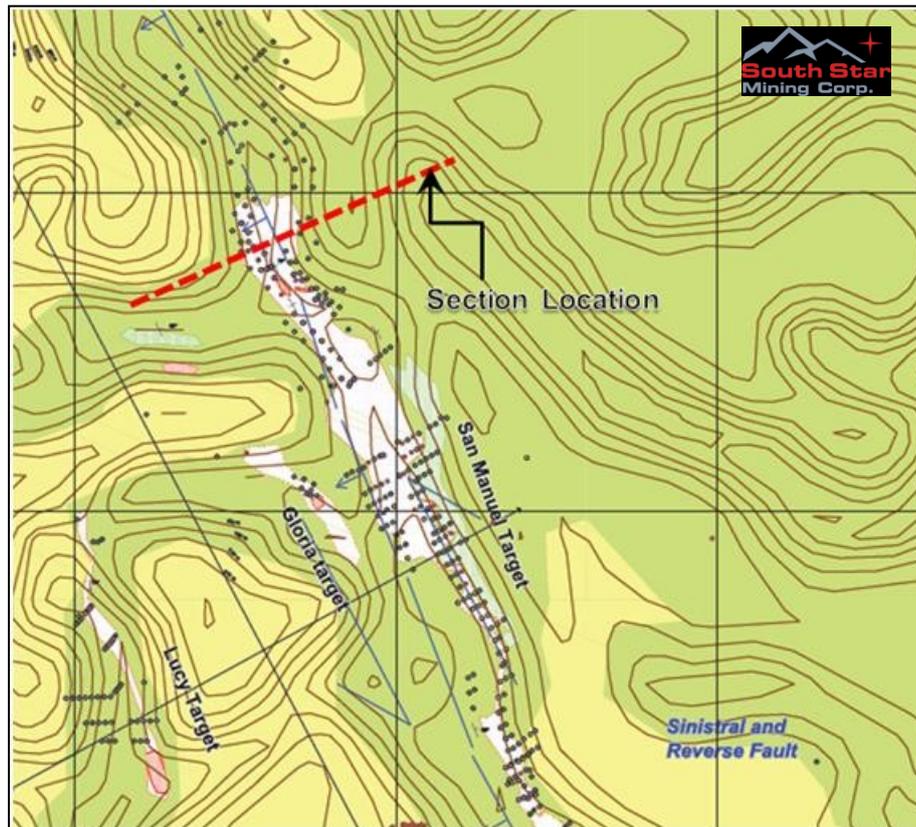


Figure 19 - Geophysics Cross-Section Location

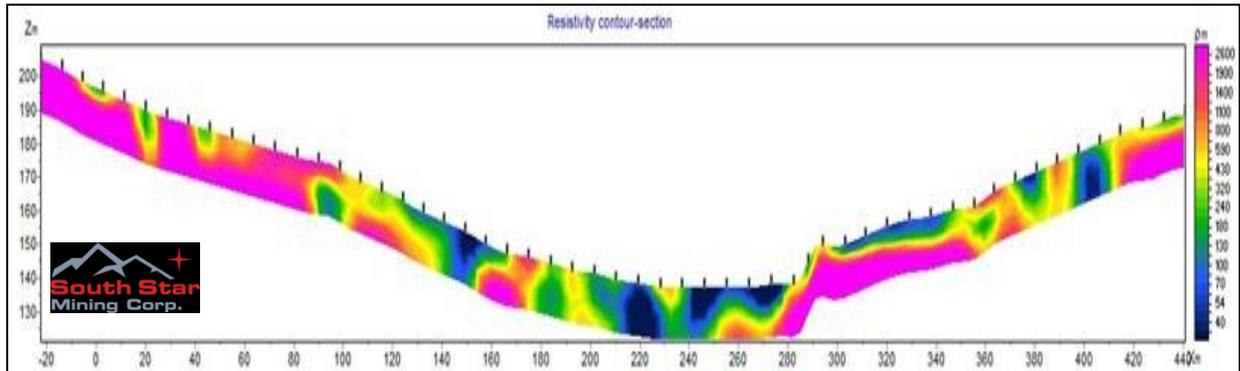


Figure 20 - Geophysics Cross-Section

The initial geophysics results are good when compared to the geologic cross-section with strong mineralization in the central zone of the section with some additional potential targets identified between stations 140 and 160 as well at 400 and 420. Additional sections will be completed once the main target is drilled out. Moving forward, geophysics will be a valuable tool to identify additional targets while cutting down on the number of holes.

10.0 DRILLING RESULTS

10.1 DRILLING PROCEDURES

South Star has conducted drilling programs at the Project since its acquisition of the property in 2011. Prior to drill mobilization, the exploration manager obtains all required permits. A field visit to the planned drill sites is conducted to document and photograph the area, vegetation type, proximity to any preservation areas and access.

The exploration manager provides the project geologist and senior project mining technician with the information required to commence drilling including:

- Objective of the drill program;
- Location of the drill pads;
- Azimuth, dip and length of drillholes;
- Sampling and internal QA/QC procedure;
- Drill core checking and core sampling criteria (intervals);
- Sample security and chain of custody procedure;
- Sample shipment procedure;
- Data transfer procedure;
- Logging procedure;
- Company responsibilities; and
- Drill contractor responsibilities.

Prior to drill mobilization, the senior project mining technician liaises with landowners to discuss the program and obtain their authorization for the drill to mobilize to their property. Exploration activities only commence following agreement with the landowner.

Daily checks are conducted to ensure that all Company personnel are equipped with Personal Protective Equipment (“PPE”) and that all tools and ancillary equipment are in good working order.

DIAMOND DRILLING (DDH)

All diamond drilling is carried out with HQ (63.5 mm) core tools. The drill hole locations, orientation, and planned final depth are checked by the senior project mining technician prior to start of drilling each hole. Azimuth and dip of each drill hole are checked by the senior project mining technician at regular intervals during drilling to monitor any deviation which may occur.

The drill company is informed of the strict requirement to collect quality core samples. Onsite supervision is maintained and site inspection visits are carried out at regular intervals to ensure that the contractor is working within the contractual parameters.

All holes outside the mine area are sealed and marked with a concrete plinth and identification tag and are surveyed in using RTK GPS by the surveyor. Approximately 0.5 m of casing is left in the top of holes to permanently mark the collar. The surveyed northing, easting and elevation of the hole collar coordinates are entered into the drill hole database.

PROCEDURES AT THE DRILL

The core boxes are labeled and arrows drawn so that the core is systematically laid in the box. A wooden marker or aluminum tag is placed in the core box after each run and the meters down hole are written on the marker. Transfer of the core from the core barrel to the box is done as carefully as possible so that no core is allowed to fall on the ground. A plastic or rubber mallet is used to loosen core from the core tube. As soon as a core box is full a lid is properly secured. Regular inspections are carried out to ensure that core boxes are clean, sturdy and suitable for core storage.

Irregularities are documented to address potential inaccuracies in depth labeling of the core boxes.

CORE TRANSPORTATION PROCEDURE

Transportation of core from the drill site to the logging facility is conducted in a manner that minimizes or eliminates shifting of material in the core boxes. Transportation and storage of cut or split core is conducted in a manner which ensures that the remaining core does not shift and that marked sample intervals remain intact.

Appropriate measures are taken to eliminate the possibility of sample tampering through proper chain of custody management and documentation.

DRILL CORE CHECKING

The core boxes are checked on arrival at the core logging facility to ensure that they are intact. The core boxes are opened sequentially and the core is aligned by matching broken pieces. The depth intervals are measured in each box and any lost core or depth inaccuracies noted. The boxes are labeled with metal or plastic labels listing hole name and interval. Geotechnical measurements, including recovery and RQD, are taken before sample intervals are selected. This work is carried out by trained technicians.

10.1.1 PHOTOGRAPHY

All drill core is systematically photographed following the procedure below:

- Digital core photography is supervised by the database coordinator;
- Core is photographed in its entirety from top to bottom of hole immediately following interval checking and box labeling and prior to logging or sampling;
- Any excess dirt, grease or drilling fluids are removed and the core is dampened prior to photography and sampling;
- Core photographs are always taken under consistent conditions; and
- Core photographs are stored digitally for future reference.

10.1.2 CORE LOGGING

Core logging commences following photography. An initial summary log containing the main lithological contacts, structures and mineralization is completed and the core is sent for cutting. Detailed core logging restarts when the cut core is returned to the geologist responsible for logging the hole.

Core logging contains all required data fields including collar, survey, lithology, alteration, structure, mineralization, veins, assay, QA/QC and downhole survey, if applicable.

10.1.3 SAMPLE SECURITY

Drill core sample security from the drill site to the analytical laboratory is a vital component of the drilling program. South Star's procedure involves direct drill management, secure transportation methods, secure sampling and logging areas and

secure sample storage facilities. Core is not left unattended and all core and sample storage facilities are locked and monitored when not in use.

Core is secured from outside inspection and interference or accidental internal interference. Chain of custody is maintained during transportation, sample collection, shipping and preparation to avoid tampering or inappropriate release of privileged information. Assay results are maintained confidential and only released to those on a need to know basis.

10.2 REVERSE CIRCULATION DRILLING

Planning procedures for RC drilling closely resemble those utilized for diamond drilling programs. Drill siting is determined by the Exploration Manager. Drill samples are collected at continuous 1 m intervals in large plastic sacks. Samples are quartered on site and the lab sample is sealed, labeled and shipped to the commercial sample preparation laboratory following normal chain of custody procedures. The remaining sample not sent to lab is sealed, labeled and stored in the core shed.

10.3 AUGER DRILLING

Planning procedures for auger drilling closely resemble those utilized for RC drilling programs. Drill siting is determined by the Exploration Manager. Drill samples are collected at continuous 1 m intervals in large plastic sacks. Samples are quartered on site and the lab sample is sealed, labeled and shipped to the commercial sample preparation laboratory following normal chain of custody procedures. The remaining sample not sent to lab is sealed, labeled and stored in the core shed.

Details of the drilling database is presented in Appendix 1.

11.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

11.1 SAMPLE PREPARATION

All drilling conducted at the project were collected, logged and supervised by trained geologists. For auger drilling, samples were collected at the drilling head averaging 8-10kg. For RC drilling, samples were collected directly into bags from the cyclone averaging 15-30kg, collected every meter.

All meters were properly placed in plastic bags being numbered and easily identified with proper hole number, depth interval and ID. Material was then transported to the field office where geologists logged and described each meter, inserting them digitally onto the project database.

Splitting was then performed at the field office, using a riffle splitter which were then divided into 2 samples; one for laboratory testing and one for storage at the project storage facility to serve as future duplicates and sample security for further potential QA/QC audits and procedures. RC and auger samples are properly labeled, numbered and cataloged, and stored in a specific designated area in the warehouse. Core boxes are properly labeled, cataloged and also stored in a specific designated area within the warehouse.



Figure 21 - Diamond Drilling Core Photo Registry



Figure 22 - Diamond Drilling Typical Core

11.2 LABORATORY ASSAY

All samples collected at the project have been delivered to certified laboratory at SGS Geosol in Belo Horizonte, Brazil or SGS Lakefield in Ontario, Canada. Once sample results are received, company geologist inserts proper grade into each corresponding database sample, thus providing a complete description for each data point including X,Y,Z coordinates, lithologic description, sample type, target area and grade result.

All samples in the 2018 campaign were submitted to SGS Geosol Laboratory in Belo Horizonte, Minas Gerais, Brazil and were analyzed for graphitic carbon (Cg) using the LECO carbon-sulfur analyzer and high temperature combustion infrared detection methodology (SGS code CSA05V). Laboratory pulps were then returned to the Company and have been stored in warehouse.

11.3 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

A total of 1334 samples were collected during the 2018 exploration campaign and incorporated into the database. The 2018 chemical analysis (assays) quality control on the database provided by South Star included:

- 18 certified standard samples using reference material from Geostats lab;
- 44 blanks sampled; &
- 32 duplicates samples.

The quantity and quality of QA/QC data was within the industry standard and represents 7% of the total 2018 samples included the database and used in the updated resource estimate. It is DTM's opinion that the sample preparation, analytical procedures and security meet industry best practices.

A summary description of the QA/QC samples follows:

- One (01) of the 18 standard samples is just outside of the tolerance limits of 2 standards deviation of the reference material.

- Five (05) of the blank samples present analytical results higher than the detection limit of the SGS Geosol lab analytical method graphitic C% assays.
- Two duplicate samples have discrepancies.

Figures 23, 24 and 25 below, shows the graphical interpretation of the results.

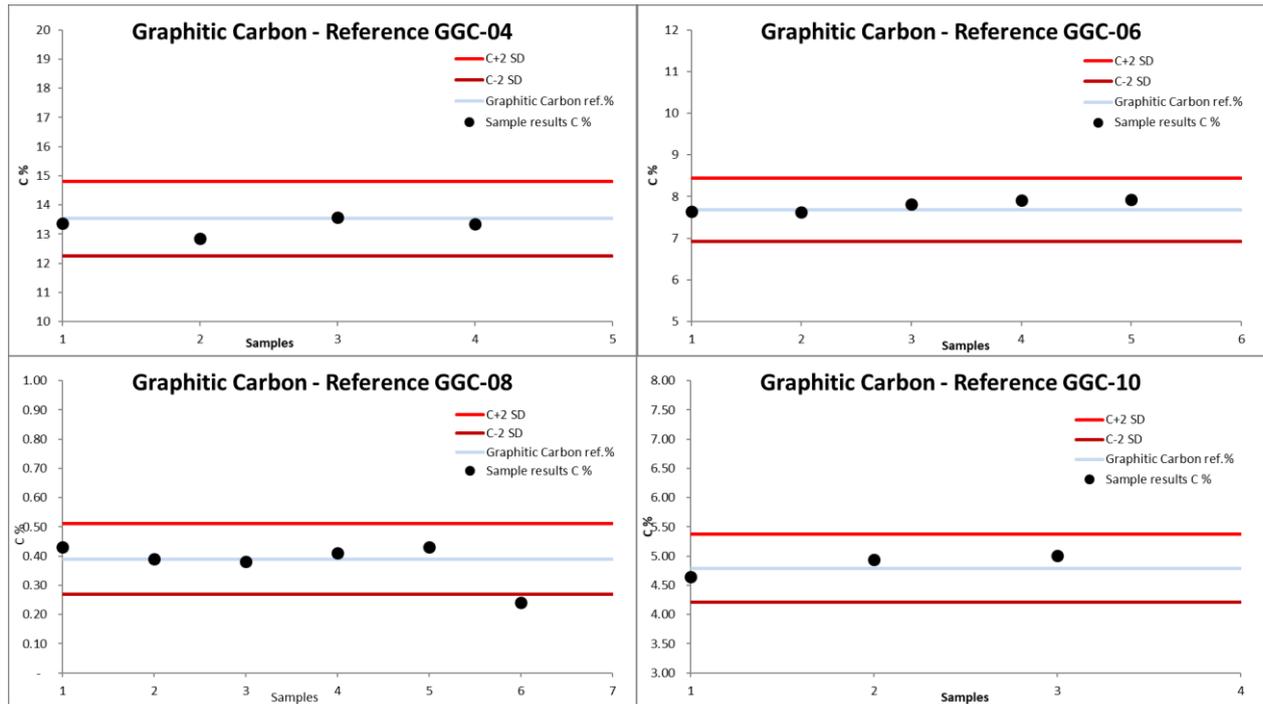


Figure 23 - Graphical interpretation of the standard sample results from the Project database.

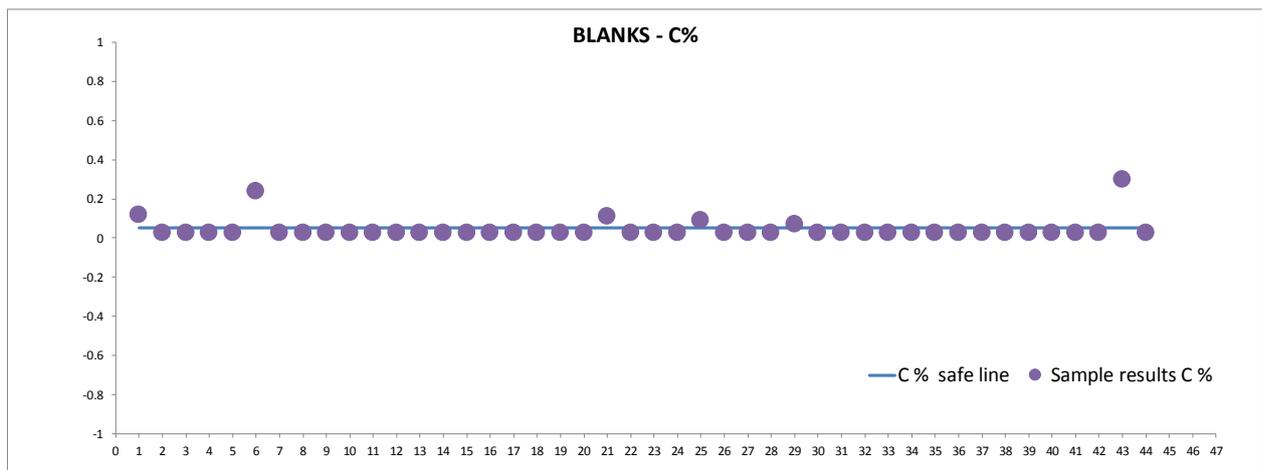


Figure 24 - Graphical interpretation of the BLANK sample results from the Project database.

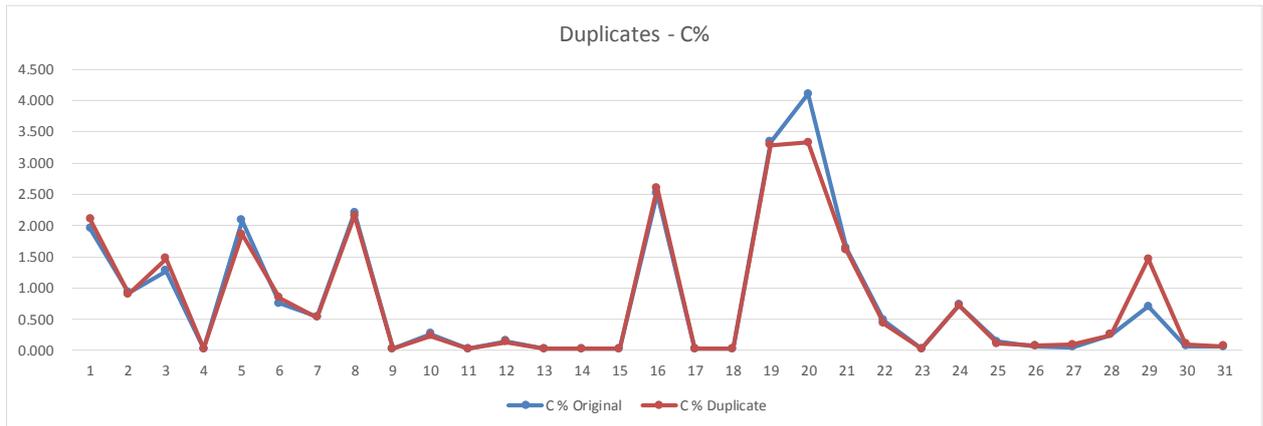


Figure 25 - Graphical interpretation of the DUPLICATE samples from the Project database.

12.0 DATA VERIFICATION

12.1 DATABASE

South Star provided DTM with the information that was used to develop this report, specifically during the execution of the work that is described herein. This work reflects the technical and economic conditions at the time that it was executed. DTM executed, whenever possible, an independent verification of the data that it received, in addition to field visits in order to corroborate said data. This information was supplied in the form of an exploratory drilling database, certifications, maps, technical reports and a topographical survey. The data is a combination of historical and newly generated information.

DTM carried out one field visit to the project on 17 and 18 June 2019 with the aim of expanding its geological knowledge of the venture and to verify the procedures adopted in the surveying and exploratory drilling stages.

DTM visited and verified the reverse circulation and diamond drilling markers (Figure 26). The coordinates of the markers were collected using handheld GPS for subsequent comparison with the Project database. Small differences found were within the acceptable variation range, caused by a lack of precision in field measuring methods.



Figure 26 - Photos of drill hole marker visited in the field.

DTM visited the South Star core shed in Itabela-BA (figure 27) where the company maintains the sample reserves. Sample descriptions and sampling are also prepared there.



Figure 27 - Photos of core house.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

This section is not applicable for resource estimate update.

14.0 MINERAL RESOURCE ESTIMATE UPDATE

14.1 INTRODUCTION

During June of 2019 DTM executed an update of South Star Company's mineral Project Santa Cruz Graphite São Manuel North (B1) and São Rubens West target areas' mineral resource estimation (Figure 28).

The mineral resource update included the most recent drilling information from RC and Diamond drilling campaigns on São Manuel North (B1) and São Rubens West target areas. The resource estimates for the other targets presented in February 2018 PEA have not been altered as no additional investigations have been performed.

For this update, DTM completed a review of the geological modelling, the grade estimation and the classification of the mineral resources. Also, during the update the following set of factors was taken into consideration: the quantity and spacing of the available data, the interpretation of the mineralization controls, the type of mineralization, and the quality of the data utilized.

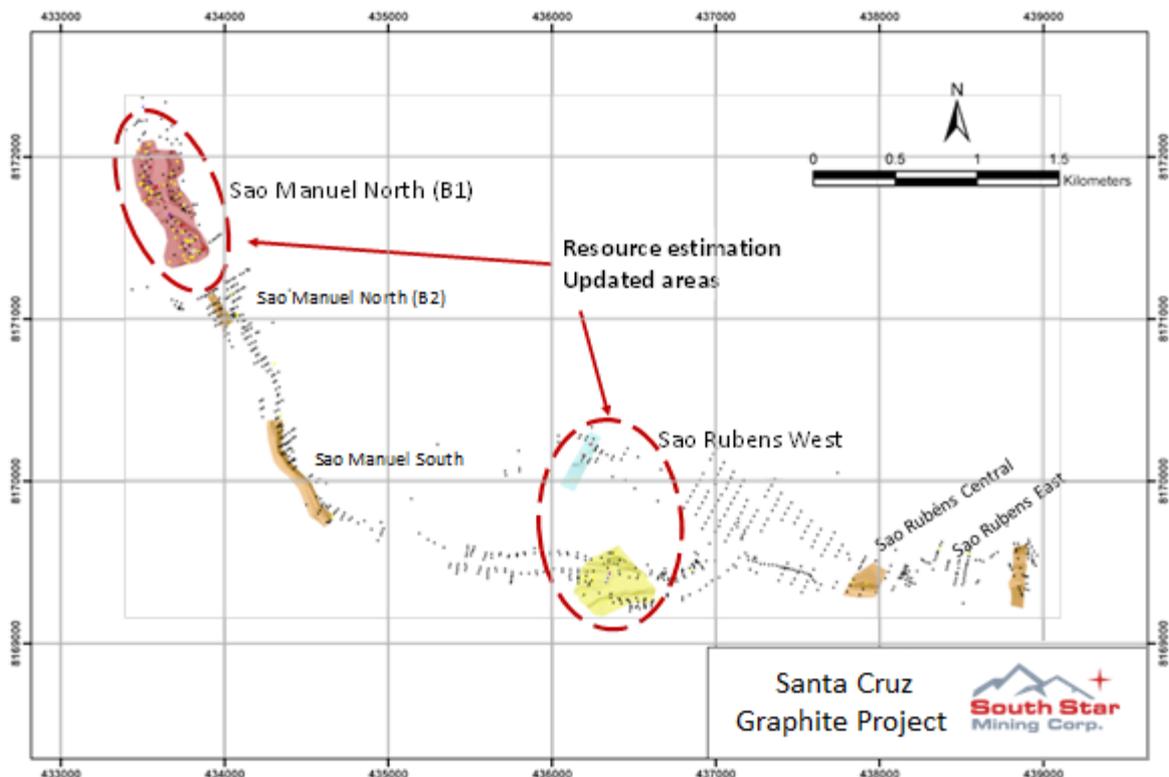


Figure 28 - Location of the areas with mineral resources updated of São Manuel North (B1) and São Rubens West, relative to the neighborhood target areas.

14.2 DRILLING DATA BASE

The drilling database for the resource estimation updated of São Manuel North (B1) and São Rubens West targets was received in MS-Excel format and were compiled in a MS-Access database.

The database for the mineral resource update includes 8 diamond drill holes, 85 reverse circulation holes and 49 rotary drill holes totaling 4,976 meters. Table 5 summarizes the drilling databases used for the mineral resource estimate update.

Table 5 – Summary drilling databases used for the mineral resource estimate update.

Drill hole Types	2016 Campaign			2018 Campaign			TOTAL		
	Number	Meters	Samples	Number	Meters	Samples	Number	Meters	Samples
DDH (Diamond drill)	-	-	-	8	542	234	8	542	234
RC (Reverse Circulation)	48	2,449	1,879	37	1,349	1,023	85	3,798	2,902
RD (Rotary Drilling -Auger)	434	4,160	2,262	49	1,677	414	483	5,837	2,676
Total	482	6,609	4,141	142	4,976	3,565	576	10,177	5,812

The database includes collar coordinates, general survey, assays and geological log of all drill holes.

14.3 GEOLOGICAL MODEL

DTM received from South Star the datasets for São Manuel North (B1) and São Rubens West targets, including the wireframe geological models built by the South Star technical team as well as previous models from February 2018 PEA.

The wireframes were revised and modified using the "Snap to point" tool for section interpretations and considering the information contained on the geological logs of database, as below:

1- Mineralized zones can include the geological codes PGMJ, PGWJ, and OGJS, contained on the project database;

2- The weathering limit was used to delineate the saprolite geological domain and separate it from soils and fresh rock (using the wireframes provided by South Star);

3- The weathering limit was used to delineate the fresh rock geological domain and separate it from saprolite rock (using the wireframes provided by South Star).

The Barreiras sedimentary rock unit occurs predominantly on top of the mineralized wireframes and was logged with a geological code STB in the database. This material was considering as waste for the geological model used in this mineral resource estimation update. Figures 29 and 30 present cross sections on the São Manuel North (B1) and São Rubens West target areas respectively with the wireframe limits assumed on this work.

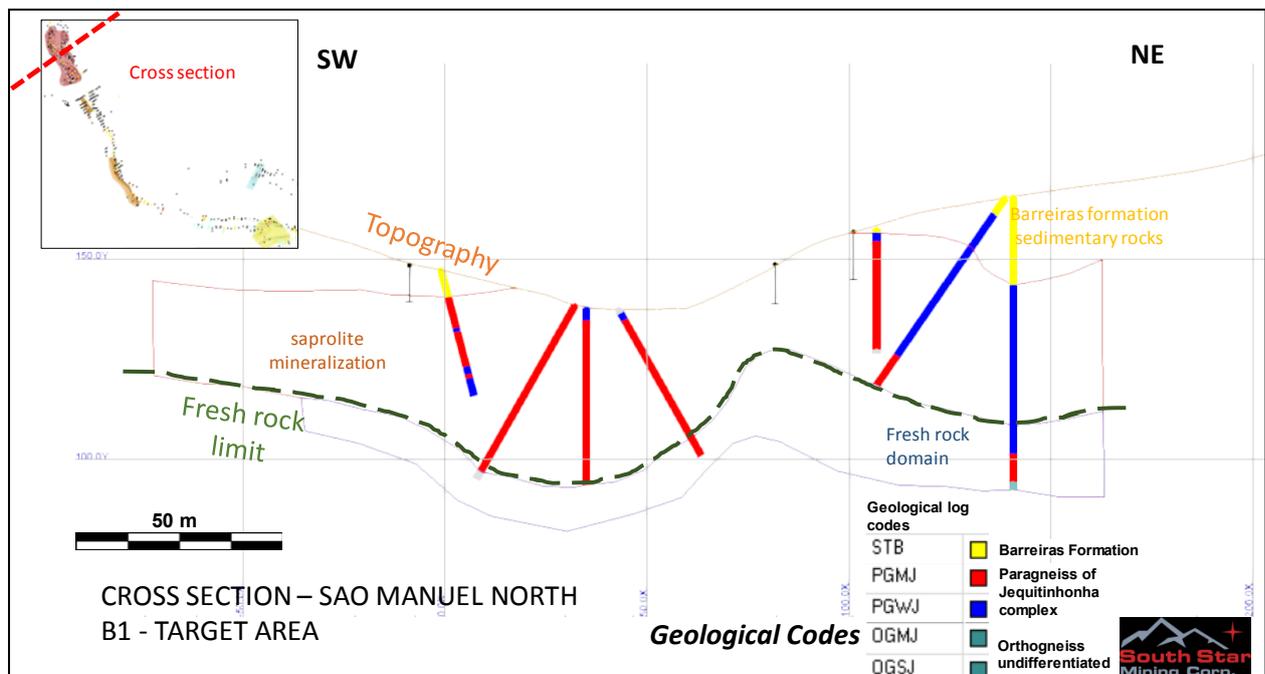


Figure 29 - Cross section at São Manuel North (B1) showing the weathering limit obtained from the provided wireframes by South Star.

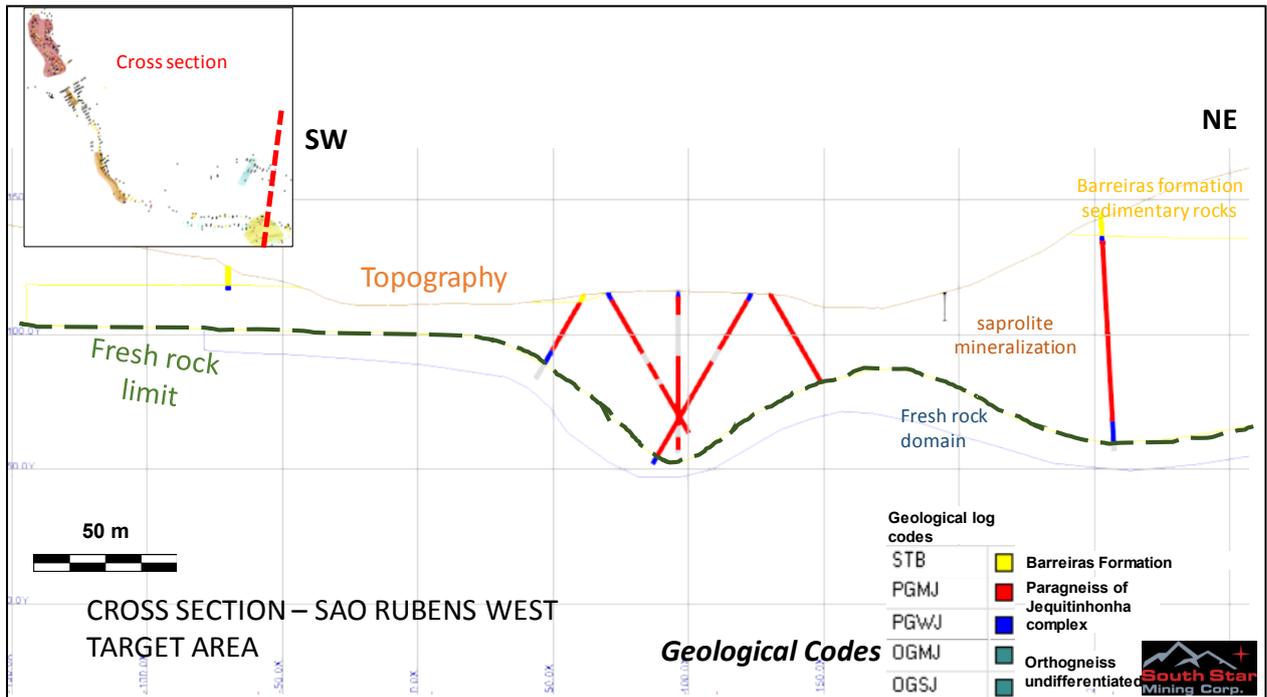


Figure 30 - Cross section at São Rubens West, showing the weathering limit obtained from the provided wireframes by South Star.

A total of five (05) geological wireframes were used for this mineral resource estimation update, each one representing a geological domain of saprolite and fresh rock. For each one of the two targets, table 6 shows the summary of the wireframes revised and used for the presented estimation.

Table 6 – List of the geological wireframes considered for the mineral resource estimation update.

Wireframe	Geological Code	Geological domain	Target Area
1	1	Saprolite	São Manuel North (B1)
2	2	Saprolite	São Rubens (main area)
3	3	Saprolite	São Rubens (Northeast portion)
4	5	Fresh Rock	São Manuel North (B1)
5	6	Fresh Rock	São Rubens (main area)

Figures 31 and 32 show the view of the mineralization wireframes separated by geological domains on São Manuel North (B1) and São Rubens target areas.

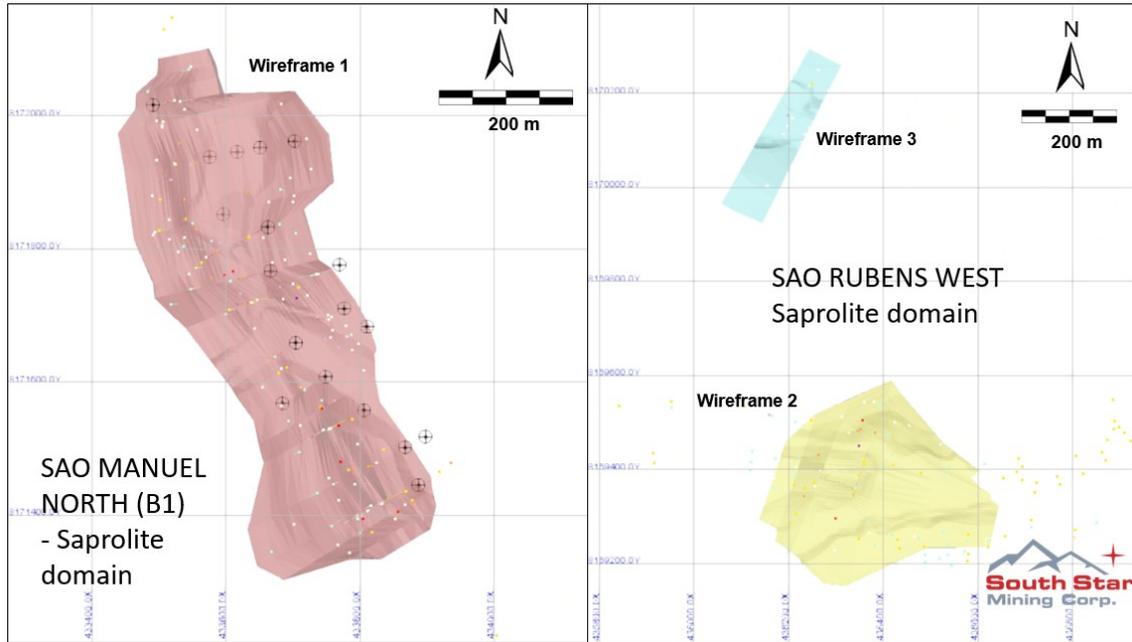


Figure 31 - Plan view of 3D Geological wireframes considered for the mineral resource estimation update wireframes 1, 2 and 3.

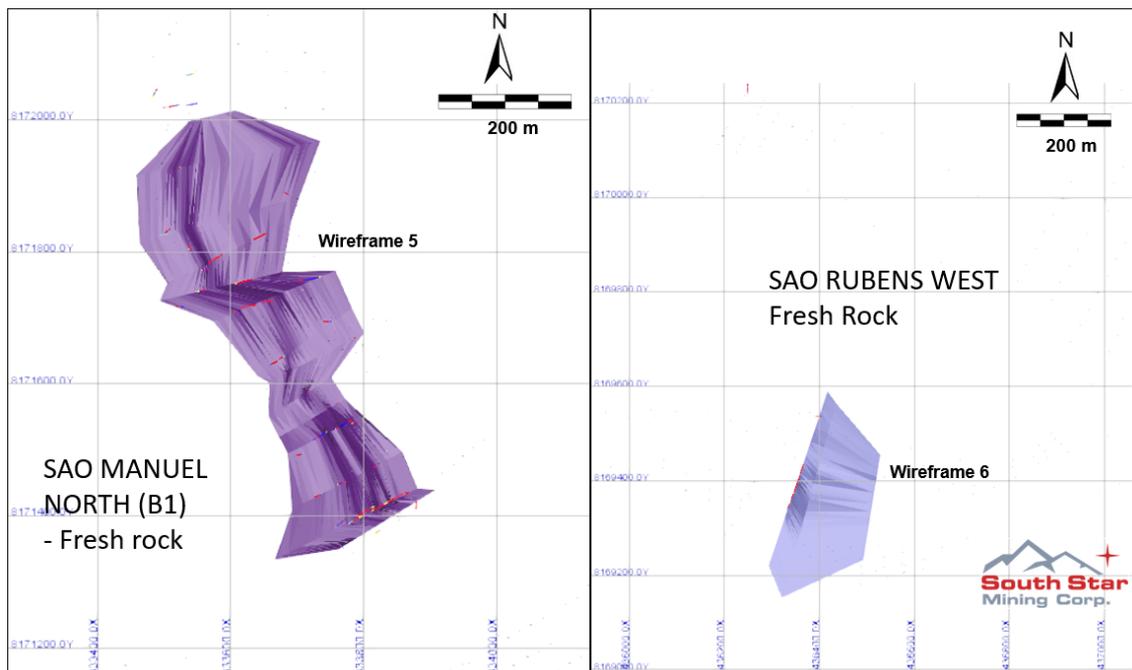


Figure 32 - Plan view of 3D Geological wireframes considered for the mineral resource estimation update, wireframes 5 and 6.

14.4 TOPOGRAPHY

For the resource estimation update of São Manuel North (B1) and São Rubens West the topography surface considered was provided by South Star. The stereo satellite imagery and

digital terrain model were acquired by the Company, from data of Stereo Pleiades-1 Satellite Sensor (1m) coupled with ground point verification provided via a GNSS RTK GPS. Topography is in UTM (meters) coordinate system with SAD 69, Zone 24 - South Datum. The satellite imagery was orthorectified and used to develop 1m topography for the region. All drill hole collars were surveyed in the field using a GNSS RTK GPS and incorporated into the topography.

14.5 BLOCK MODELING

Two 3D block models were constructed for the resource estimation update for São Manuel North (B1) and São Rubens West targets (Table 7). User block size was based on previous estimation parameters provided by South Star from the preliminary mineral resource estimation of the Santa Cruz Graphite Project.

Table 7– Summary of the block models geometry.

SÃO MANUEL NORTH (B1)			
Item	Y	X	Z
Minimum Coordinates	8170800	433400	40
Maximum Coordinates	8172100	434200	260
User Block Size	4	4	4
Minimum Block Size	4	4	4
Rotation (°)	0	0	0
SÃO RUBENS WEST			
Item	Y	X	Z
Minimum Coordinates	8169130	436000	40
Maximum Coordinates	8170350	436680	200
User Block Size	4	4	4
Minimum Block Size	4	4	4
Rotation (°)	0	0	0

14.6 DENSITY

The historic data of density from the Santa Cruz Graphite Project contain forty-nine (49) samples analyzed at Lenc Laboratory, a French-based multinational part of Egis Group. This Laboratory has ISO/IEC 17025 certification. This result was an average of 2.7 g/cm³.

For the saprolite geological domain, a density of 2.57 g/cm³ was used based on the results from analysis of 226 samples of the mineralized gneiss. Table 8 shows the summary of the density measurements by geological type and from historical dataset.

Table 8– Summary of the Density results

Sample Data	Lithocode	Rock description	Number of samples	Average of density (g/cm ³)
Historical Data	-	-	49	2.71
Mineralized gneiss	OGMJ	Paragneiss, mineralized	20	2.57
	PGMJ	Mineralized Orthogneiss	226	
Total			295	

14.7 CUT OFF GRADE

For the Santa Cruz Graphite project resource estimation, dated August 2017, a general cut off grade of 1%C was used for all targets.

In the current mineral resource estimation of the São Manuel North (B1) and São Rubens West targets were updated using a cut off grade of 0,75% C, as per parameters and computation below :

- Average C concentrate price (95 % C)..... US\$ 1,250.00 / t
- Operational costs (Plant + G/A)..... US\$ 8.00 / t
- Plant C recovery..... 90.0 %

$$\text{CUT OFF}.....(100 \times 8.00 / 0.95 / 0.90) / 1,250.00 = 0.748\% \text{ C}$$

14.8 EXPLORATORY DATA ANALYSIS

Exploratory data analysis (EDA) have been compiled with the samples inside the geological domains determined for São Manuel North (B1) and São Rubens West targets. The statistical examinations and the grade characteristics of the mineralized intervals for each domain were organized in Table 9.

Table 9 – Basic Statistical Analysis Summary (C %)

Domain	Count	Min	Max	Mean	Median	StDev	Variance	CVariation
São Manuel North (B1)- Fresh_rock	148	0.03	11.81	1.21	0.59	1.50	2.26	124
São Manuel North (B1)_Saprolite	2,523	0.03	12.09	1.54	1.01	1.56	2.43	101
São Rubens (main area)_Fresh_rock	39	0.03	5.06	1.70	1.22	1.60	2.55	94
São Rubens (main area)_Saprolite	621	0.03	6.87	2.00	1.74	1.68	2.83	84
São Rubens (Northeast portion)	81	0.03	8.91	0.93	0.22	1.81	3.28	194

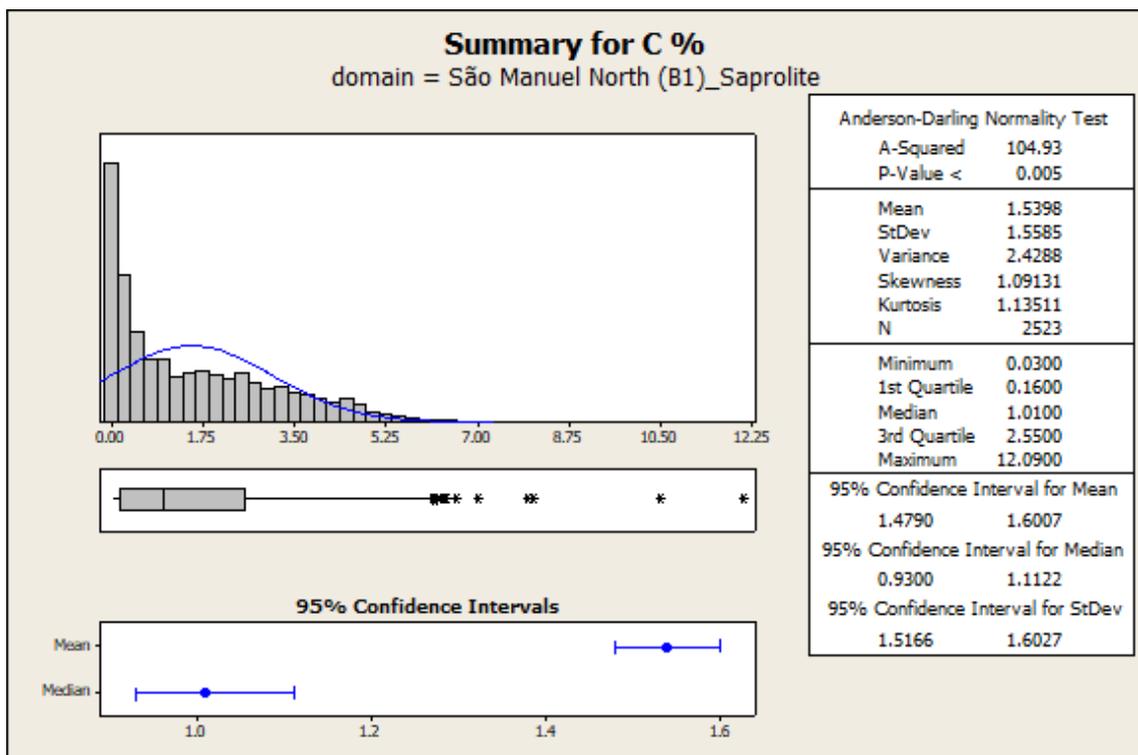
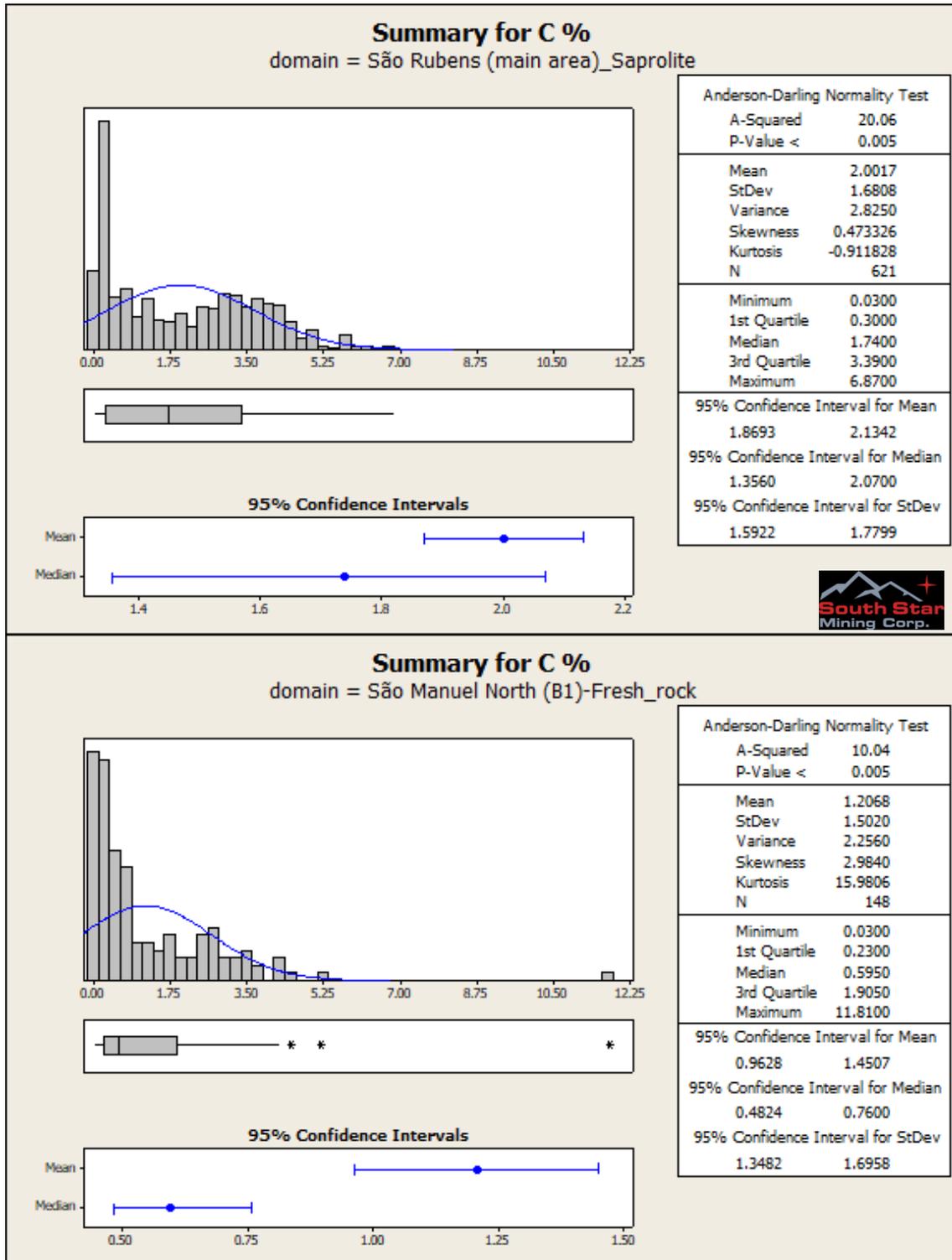


Figure 33 - Graphical summary analysis for variable C of the samples.



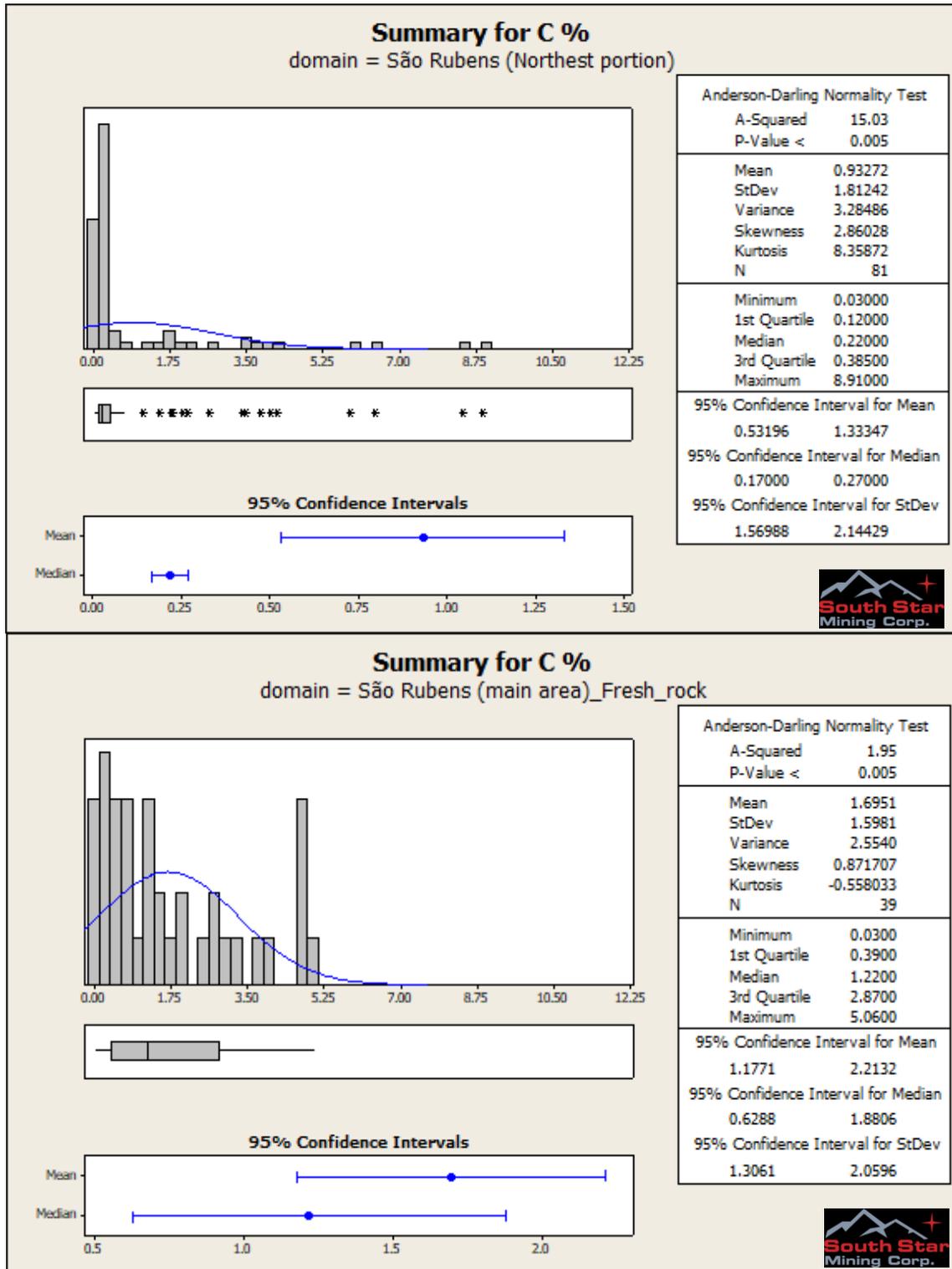


Figure 34 (a,b,c,d) - Graphical statistic summaries of the variable C % for each geological domain and target.

14.9 GRADE ESTIMATION AND ESTIMATION STRATEGY

The Ordinary Kriging (“OK”) method was used to estimate C (%) for the São Manuel North (B1) and São Rubens targets on saprolite domains. OK is one of the most

common geostatistical methods for grade estimation. In this interpolation technique, the contributing composited samples are identified through a search applied from the centre of each block. The weights are determined to minimize the variance error, considering the spatial localization of the selected composites and the modelled variogram. The grade of the weighted composited sample is combined to generate the estimation of the block grade and the variance. The fresh rock domains on São Manuel North (B1) and São Rubens West, due to the reduced number of samples, are estimated by IDW (inverse distance weighting).

The grade estimation methodology is summarized in Table 10.

Table 10– Summary of the estimation methodology.

Target	Wireframe	Mineralization	proc	pass	samples	1°Az	Dip	2°Az	search X axis	search Y axis	search Z axis	c0	c1	Sill	Angle1	Angle2	Angle3
Sao Manuel North (B1)	1	Saprolite	Ordinary Kriging	3	2523	150	0	240	110	50	25	0.5	0.8	1.3	150	0	240
Sao Manuel North (B1)	4	FreshRock	IDW2	2	148	150	0	240	100	50	25	0.5	0.8	1.3	150	0	240
Sao Rubens West (Main Area)	2	Saprolite	Ordinary Kriging	2	621	160	0	240	330	150	75	0.5	0.8	1.3	166	0	250
Sao Rubens West (Main Area)	5	FreshRock	IDW2	1	621	160	0	240	1000	400	100						
Sao Rubens West (Northesr portion)	3	Saprolite	IDW2	1	621	150	0	240	1000	400	100						

Using the block model estimation of carbon grades (C%), a visual check of the cross sections was performed to verify the adherence of the estimated block with the limit of wireframes and to check the result of estimation versus the sample grades of the drill hole intervals. Figure 35 shows one section on Sao Manuel North (B1) and one section on São Rubens west to exemplify the visual check procedure.

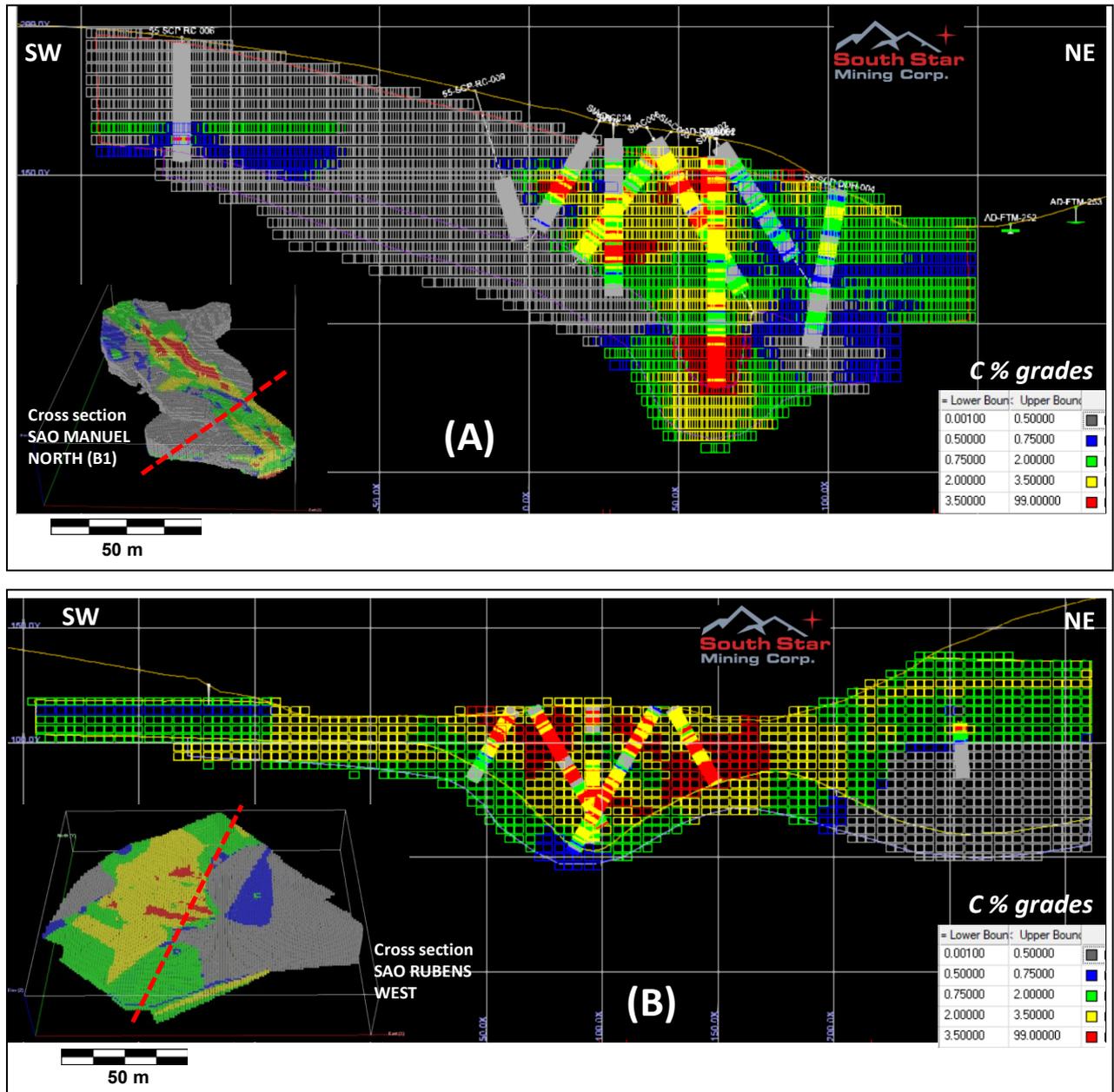


Figure 35 (A,B) - Visual validation of the estimated block model (A) Cross section at São Manuel North (B1) and (B) São Rubens West, showing the grades of C % on blocks and drill holes.

14.10 RESOURCE STATEMENT AND CLASSIFICATION OF MINERAL RESOURCES

The mineral resource updated on São Manuel North (B1) and São Rubens West was classified as Measured, Indicated and Inferred Mineral Resource based on the assessment of the input data, geological interpretation and quality of grade estimation. The key criteria assessed as part of the Resource classification are set out in Table 11.

Table 11 – Confidence Level of Key Criteria

Items	Discussion	Confidence
Drilling Techniques	Drill holes were composed by Reverse Circulation (60%), Auger drilling (35%) and Diamond drilling (6%) methods and are industry standard approach.	Moderate
Logging	Standard nomenclature and apparent good quality but not corresponding exactly to the limits of the geological wireframe.	Moderate
Sub-sampling Techniques and Sample Preparation	Sampling was planned on a variable length nominal interval from 1m to 2m. The field preparation and the lab preparation are industry standard.	High
Quality of Assay Data	The parameters from the quality control analysis of the reference samples from exploration are inside the acceptance limits.	Moderate
Drill hole Surveying	Diamond drill holes have no downhole survey data.	Moderate
Location of Sampling Points	The field samples and the drill hole collars were surveyed in using RTK GPS.	High
Data Density and Distribution	The drill spacing is not close enough to enable robust variography analysis results.	Moderate
Database Integrity	The drill hole database was presented without significant errors and inconsistencies in a Microsoft Access (mdb) format.	High
Geological Interpretation	Saprolite and fresh rock domains were based on indirect information and not drill hole logging.	Moderate
Density – Specific Gravity	The density data has adherent test results representing each geological type.	Moderate to High
Estimation and Modelling Techniques	Despite the low robustness of the variograms, Ordinary Kriging (OK) method has been used to obtain estimates of C (carbon)	High

14.11 MINERAL RESOURCE CLASSIFICATION UPDATE

The mineral resource classification of São Manuel North (B1) and São Rubens West is based on the confidence levels of key criteria (Table 11) and on technical factors that were either observed or measured. The following criteria were considered:

- Confidence in and quality of the data;
- Confidence in the lithological continuity;
- Quantity and spacing of the intersections in each mineralized zone;
- Confidence and continuity of grades and densities obtained in the observations on the Project Database;
- Search ellipse radius and of kriging parameters;

Considering those information and measurements DTM performed the Resources classification was in accordance with the following:

- Measured Resources were the estimated blocks of São Manuel North (B1) and São Rubens West with a cut off grade of 0,75 %C, inside of the saprolite domain that was estimated by the ordinary kriging method and with a search radius of 110 metres distance representing the major continuity obtained by the directional semi-variogram. Also included are the estimated blocks with a kriging variance below 0.5 obtained by ordinary kriging estimation method.
- Indicated Resources were the estimated blocks of São Manuel North (B1) and São Rubens West with a cut off grade of 0,75 %C, inside of the saprolite domain that were estimated by the ordinary kriging method and with a search radius of 220 metres distance representing the major continuity obtained by the directional semi-variogram. Also included are the estimated blocks with kriging variance below 0.5 obtained by ordinary kriging estimation method.
- Inferred Resources were considered as the entire fresh rock domain of Sao Manuel North (B1) and Sao Rubens West and the northeast mineralized saprolite body of Sao Rubens West that are discontinuous from the main area.

Table 12 shows the resources divided by target and category.

Table 12 – Resources by Target and Category

	Measured		Indicated		Measured + Indicated	
	tonnage	grade (%)	tonnage	grade (%)	tonnage	grade (%)
São Manoel North B1	2,375,585	2.26	5,877,528	2.10	8,253,113	2.15
São Manoel North B2	-	-	572,400	2.50	572,400	2.50
São Manoal South	-	-	1,309,500	2.80	1,309,500	2.80
São Rubens West	1,571,966	2.61	3,196,144	2.22	4,768,111	2.35
São Rubens Center	-	-	-	-	-	-
São Rubens East	-	-	-	-	-	-
TOTAL Main Rock	3,947,551	2.40	10,955,573	2.24	14,903,124	2.28
Jucuruçu	-	-	-	-	-	-
TOTAL GERAL	3,947,551	2.40	10,955,573	2.24	14,903,124	2.28

	Inferred	
	tonnage	grade (%)
São Manoel North B1	2,131,488	1.82
São Manoel North B2		
São Manoal South		
São Rubens West	2,207,865	1.85
São Rubens Center	785,700	3.90
São Rubens East	631,800	1.70
TOTAL Main Rock	5,756,853	2.10
Jucuruçu	2,154,600	2.90
TOTAL GERAL	7,911,453	2.32

	Recurso Inferido	
	tonage	grade (%)
São Manoel North B1	2,131,488	1.82
São Manoel North B2		
São Manoal South		
São Rubens West	2,207,865	1.85
São Rubens Center	785,700	3.90
São Rubens East	631,800	1.70
TOTAL Main Rock	5,756,853	2.10
Jucuruçu	2,154,600	2.90
TOTAL GERAL	7,911,453	2.32

15.0 MINERAL RESERVE

This section is not applicable for resource estimate update.

16.0 MINING METHODS

This section is not applicable for resource estimate update.

17.0 RECOVERY METHODS

This section is not applicable for resource estimate update.

18.0 PROJECT INFRASTRUCTURE

This section is not applicable for resource estimate update.

19.0 MARKET STUDIES & CONTRACTS

This section is not applicable for resource estimate update.

20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

This section is not applicable for resource estimate update.

21.0 CAPITAL AND OPERATING COSTS

This section is not applicable for resource estimate update.

22.0 ECONOMIC ANALYSIS

This section is not applicable for resource estimate update.

24.0 OTHER RELEVANT DATA & INFORMATION

There is no other data or information considered by the authors to be relevant for the purposes of this report.

25.0 INTERPRETATION & CONCLUSIONS

25.1 GEOLOGY AND MINERAL RESOURCE ESTIMATE

An updated resource estimate was prepared for Sao Manuel North (B1) and Sao Rubens West targets, using the updated data from the 2018 exploration campaign. The current resource estimate uses 8 diamond drill holes, 85 reverse circulation holes and 494 rotary drill holes totaling 4,976 meters was performed.

With the data collected from the new campaign and the reinterpretation of resources, a significant 14.9 million tons of measured and indicated resources were computed, containing 341.2 thousand tons of Carbon Graphite. Also included in the resources are 7.9 million tonnes of inferred resources, mainly in the contact regions of saprolite ore with fresh rock.

The economic feasibility study will be prepared in 2019, containing the ore reserves by sector with Capex and Opex evaluation of mine, plant and utilities. The mine will be sequenced, prioritizing the mining of high grade ore in the first two years, during which time the operation will take place with the beneficiation of the ore being carried out in a pilot plant.

26.0 RECOMMENDATIONS

In order to advance the project to the next level of study, a recommended work program is presented in the following sections.

26.1. GEOLOGY AND MINERAL RESOURCE ESTIMATE

- Additional 2,000 - 3,000 meters of drilling (RC& DDH), with deep holes to reach fresh rock lithology to add measured and indicated resources. In the current Resources Table there are only inferred resources from this lithology.
- Additional 1,000 to 2,000 meters of drilling (RC& DDH) in satellite targets;
- Further auger drilling for exploration potential;
- Investigate further use of geophysics;
- Geologic mapping and preliminary investigations of satellite targets within the proposed mine footprint; and
- Infill drilling for Pilot Plant Operations.

26.2. MINE DESIGN AND RESERVES

- Collect and perform basic geotechnical characterization of the pit ore, host rock and waste materials;
- Install piezometers and begin to collect periodic data on variations in groundwater levels over seasons;
- Complete detailed mine plan and sequencing incorporating reserves;
- Complete preliminary investigations into pit dewatering characteristics and diversion plans;
- Make preliminary contact with contract miners to determine if contract mining services are a cost-effective alternative; and

- Develop more detailed mining cost estimate based on proposed mine plan and sequencing LOM schedule.

27.0 REFERENCES

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APPENDIX 1 – DRILL HOLE SUMMARY TABLES

DRILLING LIST USED IN EVALUATION**Diamond Drilling São Manuel North B1 - Hole Location used in evaluation**

Hole ID	East	North	RL	Azimuth True	Dip	Total depth
55-SCP-DDH-001	433791	8171470	157	0	-90	79.85
55-SCP-DDH-002	433760	8171447	169	70	-79	69.05
55-SCP-DDH-003	433812	8171472	153	70	-80	79.85
55-SCP-DDH-004	433868	8171435	142	240	-80	56.85
55-SCP-DDH-005	433788	8171671	145	240	-75	44.35
55-SCP-DDH-006	433548	8171739	167	75	-65	71.70
55-SCP-DDH-007	433607	8171752	144	75	-58	50.80
55-SCP-DDH-008	436391	8169537	143	90	-80	89.10

Reverse circulation São Manuel North B1 - Hole Location used in evaluation

Hole ID	East	North	RL	Azimuth True	Dip	Total depth
55-SCP-RC-001	433835	8171498	144	0	-90	30.00
55-SCP-RC-002	433879	8171422	145	180	-76	42.00
55-SCP-RC-003	433789	8171544	142	240	-80	39.00
55-SCP-RC-004	433762	8171572	139	240	-80	27.00
55-SCP-RC-005A	433742	8171562	150	0	-90	26.50
55-SCP-RC-005B	433743	8171560	150	0	-90	45.75
55-SCP-RC-006	433668	8171345	195	0	-90	42.00
55-SCP-RC-007	433767	8171355	177	150	-80	25.00
55-SCP-RC-008	433818	8171374	165	60	-80	37.00

55-SCP-RC-009	433758	8171384	177	55	-73	52.00
55-SCP-RC-010	433736	8171433	178	240	-80	63.00
55-SCP-RC-011	433710	8171495	172	250	-80	69.50
55-SCP-RC-012	433693	8171542	160	0	-90	45.00
55-SCP-RC-013	433852	8171399	160	0	-90	70.00
55-SCP-RC-014	433801	8171373	168	0	-90	53.00
55-SCP-RC-015	433670	8171635	136	240	-65	28.00
55-SCP-RC-016	433674	8171638	135	60	-70	33.00
55-SCP-RC-017	433579	8171811	141	0	-90	27.00
55-SCP-RC-018	433717	8171589	147	0	-90	24.00
55-SCP-RC-019	433606	8171709	146	82	-75	32.50
55-SCP-RC-020	433537	8171803	157	30	-76	38.00
55-SCP-RC-021	433556	8171771	159	80	-75	39.00
55-SCP-RC-022	433500	8171827	164	50	-75	41.00
55-SCP-RC-023	433704	8171824	166	0	-90	41.00
55-SCP-RC-024	433709	8171742	158	0	-90	31.00
55-SCP-RC-025	433518	8171717	177	85	-75	57.00
55-SCP-RC-026	433483	8172036	163	30	-75	48.00
55-SCP-RC-027	433682	8171889	156	115	-75	24.00
55-SCP-RC-030	436349	8169252	124	0	-90	51.00
55-SCP-RC-031	436198	8170153	130	175	-75	35.00
55-SCP-RC-032	436250	8170219	135	0	-60	47.00
SIAC001	433832	8171416	161	0	-90	84.00
SIAC002	433831	8171417	161	60	-57	66.00
SIAC003	433816	8171414	164	240	-54	56.30
SIAC004	433802	8171399	167	0	-90	58.00

SIAC005	433797	8171399	167	240	-60	49.50
SIAC006	433811	8171406	165	60	-60	72.00
SIAC007	433587	8171798	141	0	-90	42.00
SIAC008	433640	8171719	137	0	-90	44.00
SIAC009	433637	8171719	137	260	-60	50.00
SIAC010	433647	8171723	137	80	-60	42.00
SIAC011	433553	8171929	144	0	-90	60.00
SIAC014	433532	8172021	144	80	-60	36.00
SIAC015	433523	8171928	156	196	-84	48.00
SIAC016	433491	8171821	167	0	-90	42.00
SIAC017	433494	8171825	167	80	-60	42.00
SIAC018	433505	8171985	156	0	-90	36.00
SIAC026	433587	8171795	142	240	-55	43.00
SIAC028	433756	8171530	154	60	-60	61.00
SIAC029	433754	8171529	154	0	-90	84.50
SIAC030	433745	8171527	156	239	-60	53.20
SIAC031	433754	8171694	149	270	-60	37.00
SIAC032	433735	8171761	165	260	-55	57.00
SIAC034	433757	8171698	151	81	-88	37.00
SIRC012	433523	8172022	146	260	-60	49.00
SIRC013	433524	8172022	146	264	-85	62.00
SIRC019	433505	8171983	156	0	-90	43.00
SIRC020	433547	8172073	142	0	-90	31.00
SIRC021	433545	8172069	142	260	-60	25.00
SIRC022	433550	8171838	142	0	-90	43.00
SIRC023	433632	8171817	143	0	-90	25.00

SIRC024	433634	8171818	144	64	-55	37.00
SIRC033	433737	8171761	165	0	-90	73.00

Rotary Drilling São Manuel North B1 - Hole Location used in evaluation

Hole ID	East	North	RL	Azimuth True	Dip	Total depth
AD-FTM-088	433771	8171479	157	0	-90	20.00
AD-FTM-092	433829	8171417	162	0	-90	26.40
AD-FTM-264	433856	8171404	159	0	-90	21.00
AD-FTM-265	433805	8171394	167	0	-90	15.00
AD-FTM-269	433784	8171344	174	0	-90	29.10
AD-FTM-321	434668	8169769	139	0	-90	16.00
AD-FTM-353 P	433525	8171926	156	0	-90	19.00
AD-FTM-354 P	433502	8171874	164	0	-90	24.00
AD-FTM-355 P	433497	8171992	157	0	-90	16.00
AD-FTM-356 P	433720	8171965	177	0	-90	23.40
AD-FTM-359 P	433783	8171467	158	0	-90	23.00
AD-FTM-361 P	433564	8171779	154	0	-90	18.40
AD-FTM-362 P	433680	8171837	161	0	-90	17.40

Diamond Drilling São Rubens West - Hole Location used in evaluation

Hole ID	East	North	RL	Azimuth True	Dip	Total depth
55-SCP-RC-028	436154	8170003	170	0	-90	17.00
55-SCP-RC-029	436297	8169228	125	0	-90	9.00

Reverse circulation São Rubens West - Hole Location used in evaluation

Hole ID	East	North	RL	Azimuth True	Dip	Total depth
SIAC043	436338	8169353	114	200	-60	36.00
SIAC044	436341	8169361	115	19	-60	60.00
SIAC045	436348	8169386	115	0	-90	60.00
SIAC046	436360	8169418	115	20	-60	38.00
SIAC047	436359	8169411	115	200	-60	73.00
SIRC048	436267	8169399	123	271	-86	58.00
SIRC049	436256	8169364	123	0	-90	46.00

Rotary Drilling São Rubens West - Hole Location used in evaluation

Hole ID	East	North	RL	Azimuth True	Dip	Total depth
AD-FTR-062	437930	8169357	128	0	-90	15.40
AD-FTR-200	437841	8169370	131	0	-90	19.40
AD-FTR-215	438375	8169573	178	0	-90	15.90
AD-FTR-229	438558	8169542	180	0	-90	20.40
AD-FTR-329	436861	8169437	125	0	-90	25.40
AD-FTR-349	436250	8169351	122	0	-90	15.00
AD-FTR-353	436214	8169386	128	0	-90	16.40
AD-FTR-446	436658	8169258	132	0	-90	17.00
AD-FTR-504	436382	8169528	140	0	-90	22.00

DRILLING LIST OF THE OTHER TARGET AREAS

Drilling cover of the Project

Rotary Drilling Summary - São Manuel holes location

Hole ID	East	North	RL	Azimuth True	Dip	Total depth
AD-FTM-001	433,709.17	8,171,592.44	146.00	0	-90	10.00
AD-FTM-003	433,706.17	8,171,726.44	152.40	0	-90	10.50
AD-FTM-006	433,681.16	8,171,743.44	150.40	0	-90	10.00
AD-FTM-010	433,736.17	8,171,698.45	148.05	0	-90	13.50
AD-FTM-025	433,621.17	8,171,733.44	140.50	0	-90	7.00
AD-FTM-026	433,599.17	8,171,761.44	144.50	0	-90	11.00
AD-FTM-030	433,539.17	8,171,874.44	146.50	0	-90	7.00
AD-FTM-031	433,540.17	8,171,845.45	143.80	0	-90	7.60
AD-FTM-035	433,556.17	8,171,829.44	141.00	0	-90	4.50
AD-FTM-036	433,590.17	8,171,809.44	140.00	0	-90	5.00
AD-FTM-037	433,548.17	8,171,926.44	145.00	0	-90	13.00
AD-FTM-039	433,518.17	8,171,904.45	158.00	0	-90	10.00
AD-FTM-041	433,530.17	8,171,959.44	153.00	0	-90	9.00
AD-FTM-082	433,740.17	8,171,564.44	150.00	0	-90	14.00
AD-FTM-083	433,768.17	8,171,535.44	149.50	0	-90	5.00
AD-FTM-111	433,959.16	8,171,177.44	137.50	0	-90	6.00
AD-FTM-112	434,004.17	8,171,219.45	138.50	0	-90	9.00
AD-FTM-136	433,994.17	8,171,017.45	140.30	0	-90	11.40
AD-FTM-149	434,035.17	8,170,855.44	136.70	0	-90	10.00
AD-FTM-160	434,046.17	8,171,047.44	137.60	0	-90	5.00
AD-FTM-167	434,086.17	8,170,977.45	135.72	0	-90	6.30
AD-FTM-171	434,133.17	8,170,941.44	145.41	0	-90	10.00
AD-FTM-189	434,192.17	8,170,715.45	139.60	0	-90	2.70

AD-FTM-191	434,227.17	8,170,735.44	149.00	0	-90	9.00
AD-FTM-192	434,244.16	8,170,744.44	153.00	0	-90	9.50
AD-FTM-194	434,238.17	8,170,696.44	149.00	0	-90	5.20
AD-FTM-195	434,256.17	8,170,706.44	154.00	0	-90	6.50
AD-FTM-197	434,267.17	8,170,666.45	154.00	0	-90	7.30
AD-FTM-198	434,285.16	8,170,676.45	157.80	0	-90	9.00
AD-FTM-199	434,313.17	8,170,647.44	162.83	0	-90	7.80
AD-FTM-201	434,296.17	8,170,636.44	157.50	0	-90	8.00
AD-FTM-202	434,307.17	8,170,597.44	152.87	0	-90	6.50
AD-FTM-205	434,342.17	8,170,569.45	157.00	0	-90	4.00
AD-FTM-210	434,324.17	8,170,468.44	143.00	0	-90	4.00
AD-FTM-212	434,318.17	8,170,418.44	140.00	0	-90	7.00
AD-FTM-215	434,319.17	8,170,371.45	133.50	0	-90	6.50
AD-FTM-221	434,325.16	8,170,324.45	145.22	0	-90	5.50
AD-FTM-224	434,341.17	8,170,290.45	144.00	0	-90	6.00
AD-FTM-238	433,579.17	8,171,757.45	152.50	0	-90	13.00
AD-FTM-239	433,611.17	8,171,766.44	141.20	0	-90	8.00
AD-FTM-240	433,611.17	8,171,766.44	141.20	0	-90	5.50
AD-FTM-244	434,417.17	8,170,303.44	164.76	0	-90	10.00
AD-FTM-251	434,010.16	8,171,113.45	133.20	0	-90	4.00
AD-FTM-252	433,918.17	8,171,465.45	134.00	0	-90	3.30
AD-FTM-253	433,936.17	8,171,478.44	140.00	0	-90	5.00
AD-FTM-257	433,748.17	8,171,665.44	136.40	0	-90	6.00
AD-FTM-258	433,769.17	8,171,652.45	137.00	0	-90	7.00
AD-FTM-262	433,851.17	8,171,571.44	133.50	0	-90	3.70
AD-FTM-263	433,868.17	8,171,415.45	151.70	0	-90	14.00
AD-FTM-270	433,519.17	8,172,147.45	147.50	0	-90	7.40

AD-FTM-271	433,508.17	8,172,130.44	155.00	0	-90	10.40
AD-FTM-284	434,341.17	8,170,199.44	138.50	0	-90	6.00
AD-FTM-285	434,356.17	8,170,206.44	142.93	0	-90	11.00
AD-FTM-286	434,380.16	8,170,217.44	148.09	0	-90	10.40
AD-FTM-287	434,394.16	8,170,226.45	151.06	0	-90	10.40
AD-FTM-290	434,361.16	8,170,152.44	142.35	0	-90	11.40
AD-FTM-291	434,382.17	8,170,158.44	145.65	0	-90	11.00
AD-FTM-294	434,381.17	8,170,098.45	140.81	0	-90	5.40
AD-FTM-295	434,397.17	8,170,105.44	143.16	0	-90	10.40
AD-FTM-296	434,418.17	8,170,116.44	148.36	0	-90	10.40
AD-FTM-299	434,429.17	8,170,066.44	143.06	0	-90	10.40
AD-FTM-301	434,526.16	8,170,014.44	146.17	0	-90	10.40
AD-FTM-303	434,569.17	8,169,983.45	141.10	0	-90	6.00
AD-FTM-307	434,571.17	8,169,892.45	122.00	0	-90	5.00
AD-FTM-308	434,610.16	8,169,850.45	122.40	0	-90	10.40
AD-FTM-309	434,592.16	8,169,877.44	122.00	0	-90	10.00
AD-FTM-310	434,506.17	8,169,859.44	123.00	0	-90	10.40
AD-FTM-311	434,602.17	8,169,831.45	123.80	0	-90	11.00
AD-FTM-313	434,591.17	8,169,808.44	132.80	0	-90	19.00
AD-FTM-315	434,651.16	8,169,837.45	121.00	0	-90	10.40
AD-FTM-319	434,688.17	8,169,800.45	121.00	0	-90	10.40
AD-FTM-320	434,678.17	8,169,785.45	121.72	0	-90	10.40
AD-FTM-322	434,657.17	8,169,749.45	130.40	0	-90	10.40
AD-FTM-325	434,741.17	8,169,790.45	120.00	0	-90	5.00
AD-FTM-326	434,732.17	8,169,773.44	120.50	0	-90	8.00
AD-FTM-327	434,720.16	8,169,755.45	121.80	0	-90	10.00
AD-FTM-328	434,782.16	8,169,762.44	120.20	0	-90	6.00

AD-FTM-330	434,820.17	8,169,728.44	120.00	0	-90	7.00
AD-FTM-331	434,862.17	8,169,741.45	124.00	0	-90	6.00
AD-FTM-333	434,978.17	8,169,693.45	130.00	0	-90	4.00
AD-FTM-335	434,962.16	8,169,657.45	118.20	0	-90	4.00
AD-FTM-337	434,062.17	8,170,999.44	134.80	0	-90	8.40
AD-FTM-338	434,071.17	8,171,014.45	143.00	0	-90	10.40
AD-FTM-339	434,062.17	8,171,029.44	143.38	0	-90	10.40
AD-FTM-340	434,050.17	8,171,018.45	136.30	0	-90	7.40
AD-FTM-341	434,052.17	8,171,053.44	140.63	0	-90	10.40
AD-FTM-342	434,007.17	8,171,017.45	133.20	0	-90	7.40
AD-FTM-343	433,995.17	8,171,052.44	134.47	0	-90	7.40
AD-FTM-344	433,976.17	8,171,118.45	133.80	0	-90	6.40
AD-FTM-345	433,743.16	8,171,572.44	145.00	0	-90	10.40
AD-FTM-346	433,679.17	8,171,613.44	141.50	0	-90	9.90
AD-FTM-347	433,691.17	8,171,622.44	138.00	0	-90	6.90
AD-FTM-348	433,631.17	8,171,885.44	139.20	0	-90	3.90
AD-FTM-349	433,621.17	8,171,689.44	141.50	0	-90	9.00
AD-FTM-350	433,620.17	8,171,712.44	142.20	0	-90	9.00
AD-FTM-361 P	433,564.17	8,171,779.44	154.00	0	-90	18.40
AD-FTM-363	433,951.17	8,170,985.44	158.85	0	-90	10.40
AD-FTM-364	434,341.17	8,170,327.45	148.77	0	-90	12.00

Rotary Drilling Summary - São Rubens holes location

Hole ID	East	North	RL	Azimuth True	Dip	total_depth
AD-FTR-056	438,048.17	8,169,387.44	138.00	0	-90	14.00
AD-FTR-057	438,018.16	8,169,364.45	123.00	0	-90	7.40

AD-FTR-063	437,949.17	8,169,392.45	119.00	0	-90	7.40
AD-FTR-064	438,064.16	8,169,429.44	157.00	0	-90	11.40
AD-FTR-067	437,987.16	8,169,493.45	174.00	0	-90	11.40
AD-FTR-068	437,968.16	8,169,427.44	145.00	0	-90	9.40
AD-FTR-070	437,888.16	8,169,448.45	138.00	0	-90	7.60
AD-FTR-079	437,869.16	8,169,413.45	119.47	0	-90	9.40
AD-FTR-080	437,850.16	8,169,378.44	106.67	0	-90	10.70
AD-FTR-100	437,658.16	8,169,527.44	131.58	0	-90	5.90
AD-FTR-199	438,020.16	8,169,396.45	142.54	0	-90	8.40
AD-FTR-206	438,280.16	8,169,494.45	135.87	0	-90	10.40
AD-FTR-207	438,300.16	8,169,487.45	137.13	0	-90	10.40
AD-FTR-212	438,356.16	8,169,520.44	156.48	0	-90	10.40
AD-FTR-220	438,527.16	8,169,369.44	127.81	0	-90	10.40
AD-FTR-225	438,543.16	8,169,465.44	157.54	0	-90	11.40
AD-FTR-230	438,564.17	8,169,556.45	182.43	0	-90	11.40
AD-FTR-232	438,883.16	8,169,282.44	121.33	0	-90	10.40
AD-FTR-234	438,869.16	8,169,316.44	128.65	0	-90	10.40
AD-FTR-237	438,841.16	8,169,369.44	142.39	0	-90	10.40
AD-FTR-239	438,834.16	8,169,404.45	148.46	0	-90	25.40
AD-FTR-246	438,874.16	8,169,506.45	127.00	0	-90	7.80
AD-FTR-247	438,873.16	8,169,526.44	139.00	0	-90	10.40
AD-FTR-248	438,880.16	8,169,486.45	131.73	0	-90	10.40
AD-FTR-254	438,850.16	8,169,569.44	141.58	0	-90	11.00
AD-FTR-255	438,866.16	8,169,579.44	150.33	0	-90	5.00
AD-FTR-256	438,922.16	8,169,511.45	157.44	0	-90	10.00
AD-FTR-258	438,946.16	8,169,506.45	165.00	0	-90	10.40

AD-FTR-260	438,900.16	8,169,589.45	174.29	0	-90	8.40
AD-FTR-262	438,917.16	8,169,533.44	163.76	0	-90	10.40
AD-FTR-266	438,940.16	8,169,530.44	171.68	0	-90	10.00
AD-FTR-267	438,924.16	8,169,549.45	173.52	0	-90	10.40
AD-FTR-268	438,920.16	8,169,570.44	180.00	0	-90	10.40
AD-FTR-269	438,912.16	8,169,595.45	183.00	0	-90	10.40
AD-FTR-270	438,929.16	8,169,605.45	194.00	0	-90	10.40
AD-FTR-271	438,920.16	8,169,624.44	195.55	0	-90	10.40
AD-FTR-272	438,941.16	8,169,581.44	192.00	0	-90	10.40
AD-FTR-275	437,192.17	8,169,543.45	118.49	0	-90	6.40
AD-FTR-276	437,207.16	8,169,524.44	121.48	0	-90	10.40
AD-FTR-277	437,165.16	8,169,632.44	125.40	0	-90	8.40
AD-FTR-278	437,169.16	8,169,650.45	128.14	0	-90	6.40
AD-FTR-279	437,184.17	8,169,686.45	133.62	0	-90	10.40
AD-FTR-282	437,210.17	8,169,499.45	138.00	0	-90	10.40
AD-FTR-283	437,237.16	8,169,494.45	137.00	0	-90	10.40
AD-FTR-284	437,261.17	8,169,491.45	129.00	0	-90	10.40
AD-FTR-285	437,285.16	8,169,475.44	130.00	0	-90	11.00
AD-FTR-287	437,337.16	8,169,470.44	140.00	0	-90	10.40
AD-FTR-289	437,383.16	8,169,464.44	139.00	0	-90	10.40
AD-FTR-290	437,403.16	8,169,456.45	133.00	0	-90	11.40
AD-FTR-291	437,423.16	8,169,454.45	134.00	0	-90	10.80
AD-FTR-292	437,443.16	8,169,452.45	134.00	0	-90	10.40
AD-FTR-293	437,459.17	8,169,446.45	128.00	0	-90	10.40
AD-FTR-294	437,479.16	8,169,440.45	121.00	0	-90	10.40
AD-FTR-295	437,499.17	8,169,438.45	125.00	0	-90	10.40

AD-FTR-296	437,519.16	8,169,432.44	125.00	0	-90	10.40
AD-FTR-297	437,543.17	8,169,429.44	143.00	0	-90	10.40
AD-FTR-298	437,562.16	8,169,419.44	140.00	0	-90	10.40
AD-FTR-299	437,580.16	8,169,414.44	140.00	0	-90	10.40
AD-FTR-300	437,595.16	8,169,400.45	138.00	0	-90	10.40
AD-FTR-301	437,604.16	8,169,379.44	125.00	0	-90	10.40
AD-FTR-302	437,617.16	8,169,363.45	152.00	0	-90	10.40
AD-FTR-303	436,660.16	8,169,400.45	119.00	0	-90	10.40
AD-FTR-304	436,675.16	8,169,412.45	120.00	0	-90	10.40
AD-FTR-305	436,686.16	8,169,424.44	133.00	0	-90	10.40
AD-FTR-307	436,693.16	8,169,377.44	128.00	0	-90	10.40
AD-FTR-308	436,682.16	8,169,394.45	123.00	0	-90	10.40
AD-FTR-309	436,694.17	8,169,406.45	140.00	0	-90	10.40
AD-FTR-311	436,719.16	8,169,351.45	120.00	0	-90	7.00
AD-FTR-312	436,724.17	8,169,372.44	132.00	0	-90	10.40
AD-FTR-314	435,511.16	8,169,529.44	128.00	0	-90	10.00
AD-FTR-315	435,517.16	8,169,548.45	132.00	0	-90	10.40
AD-FTR-316	436,773.16	8,169,369.44	133.00	0	-90	7.00
AD-FTR-317	435,526.17	8,169,565.44	135.00	0	-90	10.40
AD-FTR-318	436,768.16	8,169,386.44	140.00	0	-90	10.40
AD-FTR-320	436,822.17	8,169,391.45	120.00	0	-90	6.40
AD-FTR-321	436,813.16	8,169,407.45	142.00	0	-90	10.40
AD-FTR-322	435,485.16	8,169,526.44	138.00	0	-90	10.40
AD-FTR-323	435,488.16	8,169,545.45	142.00	0	-90	10.40
AD-FTR-324	436,808.17	8,169,429.44	145.00	0	-90	10.40
AD-FTR-325	435,491.17	8,169,570.44	142.00	0	-90	10.40

AD-FTR-328	436,870.17	8,169,420.44	128.00	0	-90	8.40
AD-FTR-331	436,887.16	8,169,486.45	129.00	0	-90	10.40
AD-FTR-332	436,879.16	8,169,450.45	141.00	0	-90	10.40
AD-FTR-333	436,874.16	8,169,464.44	135.00	0	-90	10.40
AD-FTR-336	436,922.16	8,169,461.45	126.00	0	-90	10.40
AD-FTR-337	436,909.16	8,169,478.44	126.00	0	-90	10.40
AD-FTR-338	436,654.17	8,169,382.44	135.00	0	-90	6.00
AD-FTR-339	436,898.16	8,169,489.45	142.00	0	-90	10.40
AD-FTR-340	436,888.17	8,169,502.45	143.00	0	-90	10.40
AD-FTR-342	436,884.17	8,169,549.45	151.00	0	-90	8.00
AD-FTR-343	436,954.17	8,169,497.45	137.00	0	-90	10.40
AD-FTR-344	436,333.16	8,169,341.45	113.00	0	-90	7.40
AD-FTR-346	436,270.17	8,169,406.45	121.70	0	-90	10.40
AD-FTR-347	436,268.16	8,169,388.45	123.70	0	-90	10.40
AD-FTR-348	436,253.16	8,169,372.44	124.70	0	-90	10.40
AD-FTR-350	436,238.16	8,169,332.44	117.50	0	-90	8.40
AD-FTR-351	436,221.16	8,169,426.44	118.00	0	-90	9.40
AD-FTR-352	436,216.16	8,169,404.45	125.40	0	-90	10.40
AD-FTR-354	436,212.16	8,169,366.44	126.00	0	-90	10.40
AD-FTR-355	436,171.17	8,169,441.45	126.00	0	-90	6.40
AD-FTR-356	436,171.17	8,169,424.44	132.00	0	-90	10.40
AD-FTR-357	436,169.16	8,169,400.45	140.00	0	-90	10.40
AD-FTR-358	436,169.16	8,169,381.44	137.00	0	-90	10.40
AD-FTR-359	436,168.16	8,169,361.45	137.00	0	-90	10.40
AD-FTR-360	436,122.16	8,169,439.45	122.00	0	-90	7.40
AD-FTR-361	436,120.17	8,169,416.44	134.00	0	-90	10.40

AD-FTR-362	436,118.16	8,169,399.45	133.00	0	-90	10.40
AD-FTR-367	435,913.16	8,169,434.44	124.00	0	-90	8.00
AD-FTR-368	435,915.17	8,169,414.45	132.00	0	-90	10.40
AD-FTR-371	435,768.17	8,169,428.44	134.00	0	-90	7.00
AD-FTR-372	435,767.16	8,169,408.45	138.00	0	-90	10.40
AD-FTR-373	435,763.16	8,169,391.45	143.00	0	-90	10.40
AD-FTR-374	435,759.16	8,169,374.44	149.00	0	-90	10.40
AD-FTR-375	435,756.16	8,169,359.45	153.00	0	-90	10.40
AD-FTR-378	435,664.16	8,169,449.45	131.00	0	-90	8.00
AD-FTR-379	435,668.16	8,169,430.44	139.00	0	-90	10.40
AD-FTR-380	435,618.17	8,169,444.45	130.00	0	-90	9.00
AD-FTR-381	435,616.16	8,169,425.44	136.00	0	-90	10.40
AD-FTR-382	435,617.16	8,169,407.45	144.00	0	-90	10.40
AD-FTR-383	435,613.16	8,169,386.44	148.00	0	-90	10.40
AD-FTR-384	435,572.16	8,169,456.45	130.00	0	-90	8.00
AD-FTR-385	435,565.16	8,169,437.45	137.00	0	-90	10.40
AD-FTR-386	435,558.16	8,169,418.44	141.00	0	-90	10.40
AD-FTR-387	435,481.16	8,169,473.44	134.00	0	-90	4.00
AD-FTR-388	435,482.17	8,169,456.45	130.00	0	-90	10.40
AD-FTR-390	435,435.17	8,169,475.44	128.00	0	-90	8.00
AD-FTR-391	435,432.17	8,169,455.45	133.00	0	-90	10.40
AD-FTR-392	435,428.17	8,169,435.44	136.00	0	-90	10.40
AD-FTR-393	435,426.16	8,169,415.44	145.00	0	-90	10.40
AD-FTR-394	435,384.17	8,169,476.44	135.00	0	-90	7.00
AD-FTR-395	435,381.17	8,169,458.45	132.00	0	-90	10.40
AD-FTR-396	436,367.16	8,169,289.44	134.00	0	-90	7.90

AD-FTR-397	436,417.16	8,169,284.44	128.00	0	-90	5.90
AD-FTR-399	436,419.17	8,169,261.45	133.00	0	-90	9.90
AD-FTR-400	436,464.17	8,169,296.45	132.00	0	-90	5.00
AD-FTR-401	436,613.17	8,169,412.45	122.00	0	-90	7.40
AD-FTR-402	436,564.16	8,169,434.44	121.00	0	-90	5.40
AD-FTR-403	436,514.16	8,169,437.45	123.00	0	-90	9.90
AD-FTR-404	436,456.17	8,169,455.45	137.00	0	-90	10.40
AD-FTR-405	436,409.17	8,169,475.44	117.00	0	-90	7.90
AD-FTR-406	436,352.16	8,169,486.45	119.50	0	-90	9.40
AD-FTR-407	436,297.16	8,169,475.44	116.50	0	-90	9.40
AD-FTR-408	436,214.17	8,169,501.45	122.50	0	-90	4.40
AD-FTR-409	436,165.16	8,169,514.44	119.00	0	-90	10.40
AD-FTR-410	436,158.16	8,169,517.44	118.00	0	-90	6.40
AD-FTR-411	436,105.17	8,169,536.45	122.00	0	-90	6.40
AD-FTR-412	436,055.16	8,169,534.44	124.00	0	-90	10.40
AD-FTR-414	435,951.17	8,169,531.44	128.00	0	-90	7.40
AD-FTR-416	435,842.17	8,169,536.45	121.00	0	-90	8.00
AD-FTR-418	435,741.16	8,169,519.44	130.00	0	-90	7.00
AD-FTR-419	435,686.16	8,169,531.44	131.00	0	-90	7.00
AD-FTR-420	435,638.16	8,169,516.44	151.00	0	-90	10.40
AD-FTR-421	435,589.17	8,169,507.45	127.00	0	-90	8.00
AD-FTR-422	435,598.16	8,169,525.44	133.00	0	-90	10.40
AD-FTR-425	436,511.17	8,169,299.45	128.00	0	-90	4.90
AD-FTR-426	436,469.16	8,169,276.44	114.00	0	-90	10.40
AD-FTR-427	436,521.16	8,169,281.44	119.00	0	-90	10.40
AD-FTR-428	436,523.16	8,169,264.45	125.00	0	-90	10.40

AD-FTR-430	436,524.16	8,169,249.45	135.00	0	-90	10.40
AD-FTR-431	436,561.16	8,169,310.45	129.00	0	-90	4.90
AD-FTR-432	436,578.16	8,169,241.45	141.00	0	-90	10.40
AD-FTR-433	436,522.17	8,169,227.44	146.00	0	-90	10.40
AD-FTR-434	436,519.17	8,169,210.45	148.00	0	-90	10.40
AD-FTR-435	436,570.17	8,169,285.44	131.00	0	-90	10.40
AD-FTR-436	436,570.17	8,169,263.45	138.00	0	-90	10.40
AD-FTR-437	436,614.17	8,169,308.45	122.00	0	-90	4.90
AD-FTR-438	436,610.17	8,169,293.45	134.00	0	-90	10.40
AD-FTR-439	436,607.16	8,169,271.44	140.00	0	-90	10.40
AD-FTR-440	436,580.17	8,169,221.44	148.00	0	-90	10.40
AD-FTR-441	436,613.17	8,169,250.45	142.00	0	-90	10.40
AD-FTR-442	436,616.16	8,169,234.44	141.00	0	-90	10.40
AD-FTR-444	436,660.16	8,169,298.45	128.00	0	-90	5.90
AD-FTR-445	436,657.17	8,169,281.44	131.00	0	-90	10.40
AD-FTR-447	436,713.17	8,169,292.45	131.00	0	-90	5.90
AD-FTR-448	436,712.17	8,169,278.44	125.00	0	-90	10.40
AD-FTR-449	436,806.16	8,169,272.44	128.00	0	-90	7.90
AD-FTR-451	436,804.17	8,169,254.45	128.00	0	-90	10.40
AD-FTR-452	436,851.17	8,169,287.44	124.00	0	-90	7.90
AD-FTR-454	436,951.16	8,169,342.45	123.00	0	-90	7.90
AD-FTR-455	436,988.16	8,169,374.44	122.00	0	-90	9.90
AD-FTR-458	437,119.17	8,169,472.44	123.00	0	-90	8.90
AD-FTR-462	437,244.16	8,169,513.44	121.00	0	-90	7.90
AD-FTR-464	438,846.16	8,169,553.45	169.00	0	-90	10.40
AD-FTR-466	438,901.16	8,169,448.45	128.00	0	-90	10.40

AD-FTR-467	438,886.16	8,169,444.45	133.00	0	-90	10.40
AD-FTR-468	438,873.16	8,169,453.45	157.00	0	-90	10.40
AD-FTR-469	438,916.16	8,169,397.45	129.85	0	-90	10.40
AD-FTR-470	438,901.16	8,169,400.45	124.62	0	-90	10.40
AD-FTR-471	438,887.16	8,169,409.45	126.48	0	-90	10.40
AD-FTR-472	438,913.16	8,169,354.45	113.13	0	-90	10.40
AD-FTR-473	438,922.16	8,169,316.44	112.65	0	-90	10.40
AD-FTR-474	438,901.16	8,169,321.44	118.02	0	-90	10.40
AD-FTR-475	438,693.16	8,169,519.44	172.00	0	-90	10.40
AD-FTR-477	438,730.16	8,169,546.45	171.00	0	-90	10.40
AD-FTR-481	438,474.16	8,169,370.44	123.00	0	-90	10.40
AD-FTR-482	438,477.16	8,169,390.45	134.00	0	-90	10.40
AD-FTR-483	438,482.16	8,169,410.45	134.00	0	-90	10.40
AD-FTR-484	438,485.16	8,169,424.44	141.00	0	-90	8.40
AD-FTR-485	438,492.16	8,169,453.45	148.00	0	-90	10.40
AD-FTR-486	438,494.16	8,169,480.44	167.00	0	-90	10.40
AD-FTR-487	438,499.16	8,169,501.45	189.00	0	-90	10.40
AD-FTR-488	438,601.16	8,169,499.45	188.00	0	-90	10.40
AD-FTR-489	438,422.16	8,169,442.45	143.00	0	-90	10.40
AD-FTR-490	438,427.16	8,169,460.45	147.00	0	-90	8.50
AD-FTR-491	438,431.16	8,169,482.44	154.00	0	-90	10.40
AD-FTR-492	438,435.16	8,169,497.45	170.00	0	-90	10.40
AD-FTR-493	438,644.16	8,169,491.45	172.00	0	-90	10.40
AD-FTR-494	438,626.16	8,169,500.45	169.00	0	-90	10.40
AD-FTR-496	436,572.16	8,169,452.45	135.00	0	-90	10.40
AD-FTR-499	436,454.16	8,169,475.44	141.00	0	-90	10.40

AD-FTR-502	436,383.17	8,169,495.45	121.00	0	-90	9.90
AD-FTR-503	436,383.17	8,169,479.44	115.00	0	-90	10.40
AD-FTR-506	436,356.16	8,169,505.45	126.00	0	-90	10.40
AD-FTR-507	436,362.16	8,169,523.44	137.00	0	-90	10.40
AD-FTR-510	436,248.17	8,169,505.45	125.00	0	-90	10.40
AD-FTR-513	436,099.16	8,169,547.45	137.00	0	-90	10.40
AD-FTR-514	436,048.16	8,169,551.45	130.00	0	-90	10.40
AD-FTR-516	435,951.17	8,169,544.45	136.00	0	-90	10.40
AD-FTR-524	435,348.17	8,169,576.44	142.00	0	-90	10.40

Rotary Drilling Summary - Jucurucu holes Location

Hole ID	East	North	RL	Azimuth True	Dip	total_depth
AD-FTJ-001	408,625.20	8,140,003.48	91.00	0	-90	6.00
AD-FTJ-002	408,617.20	8,140,024.49	95.00	0	-90	5.40
AD-FTJ-003	408,637.20	8,140,006.48	88.00	0	-90	5.00
AD-FTJ-004	408,219.20	8,140,069.49	119.00	0	-90	10.40
AD-FTJ-005	408,239.19	8,140,064.49	110.00	0	-90	7.00
AD-FTJ-006	408,172.20	8,140,072.49	165.62	0	-90	10.40
AD-FTJ-007	408,150.20	8,140,066.49	114.00	0	-90	10.40
AD-FTJ-008	408,152.20	8,140,049.48	128.00	0	-90	10.40
AD-FTJ-009	408,237.20	8,140,032.49	122.00	0	-90	10.40
AD-FTJ-010	408,612.19	8,140,004.48	101.00	0	-90	10.40
AD-FTJ-011	408,584.20	8,139,987.49	111.00	0	-90	10.40
AD-FTJ-012	408,573.20	8,139,802.48	99.00	0	-90	9.00
AD-FTJ-013	408,526.20	8,139,797.49	100.00	0	-90	9.00

Reverse circulation Summary – São Manuel Hole Location

Hole ID	East	North	RL	Azimuth True	Dip	total_depth
SIAC025	433,509.16	8,172,299.44	151.10	0	-90	17.80
SIAC027	433,875.16	8,171,134.44	167.50	70	-60	69.00
SIAC035	434,044.17	8,171,145.44	150.00	230	-60	55.00
SIAC036	434,085.17	8,171,014.45	144.80	230	-60	70.00
SIRC037	434,082.16	8,171,018.44	150.00	230	-90	42.00
SIAC038	434,083.16	8,171,018.45	144.87	230	-90	66.00
SIAC039	434,329.17	8,170,383.45	136.21	260	-90	31.00
SIAC040	434,327.17	8,170,383.45	135.60	260	-60	28.00
SIAC041	434,351.17	8,170,394.44	143.00	96	-85	53.00
SIAC042	434,309.17	8,170,713.44	155.20	230	-60	49.00

APPENDIX 2 – GEOLOGIC MAPS & SECTIONS

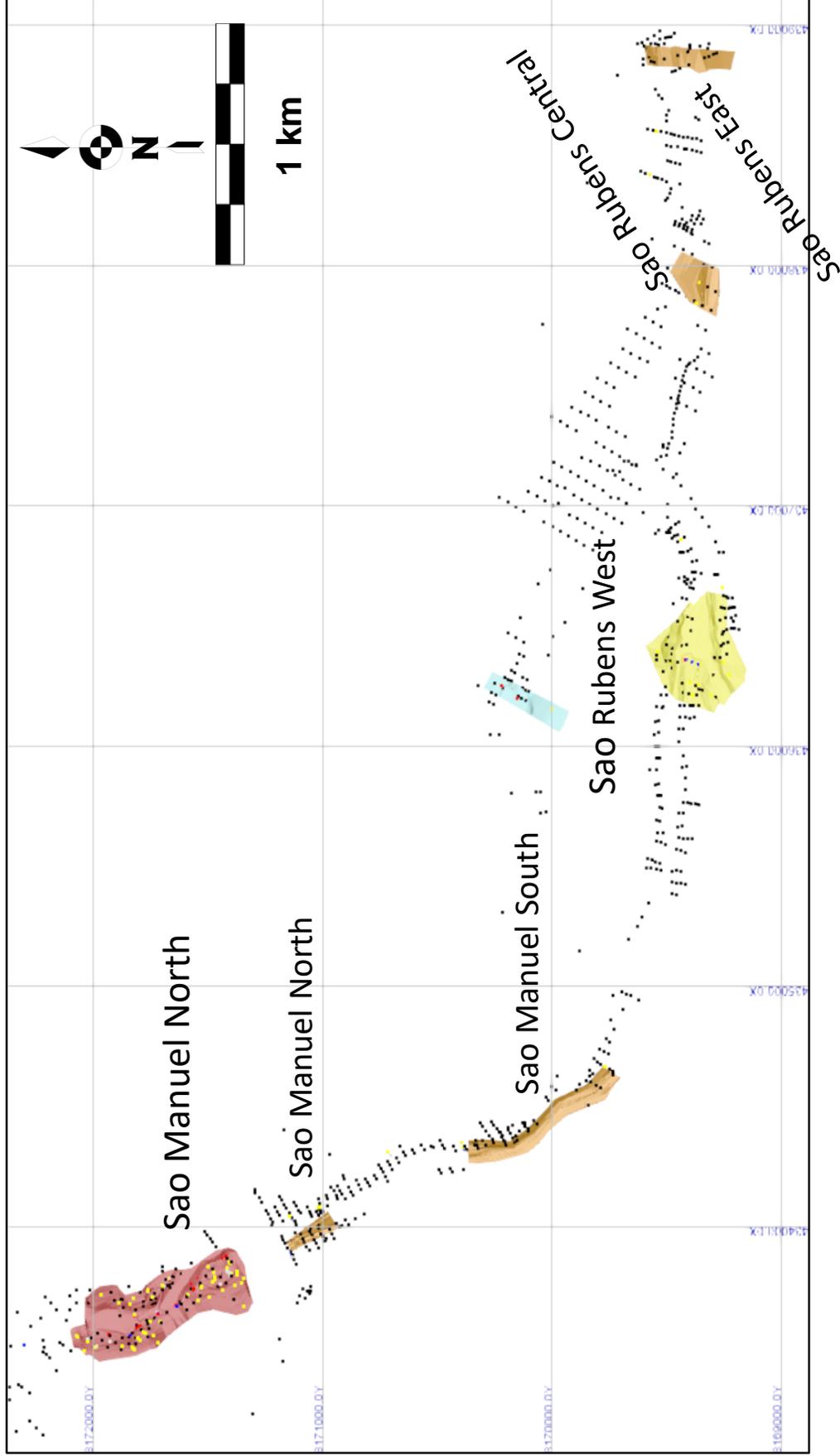
Santa Cruz Grafite Project– Itabela –BA

Vertical Cross Sections

Geological Potential Expansion

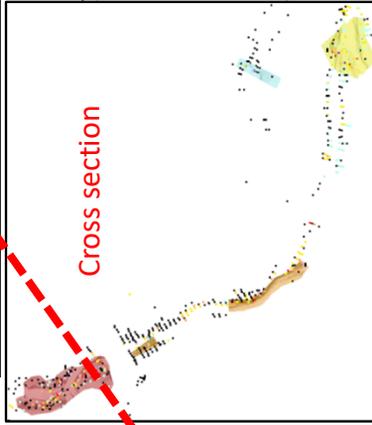


RESOURCE ESTIMATION AREAS



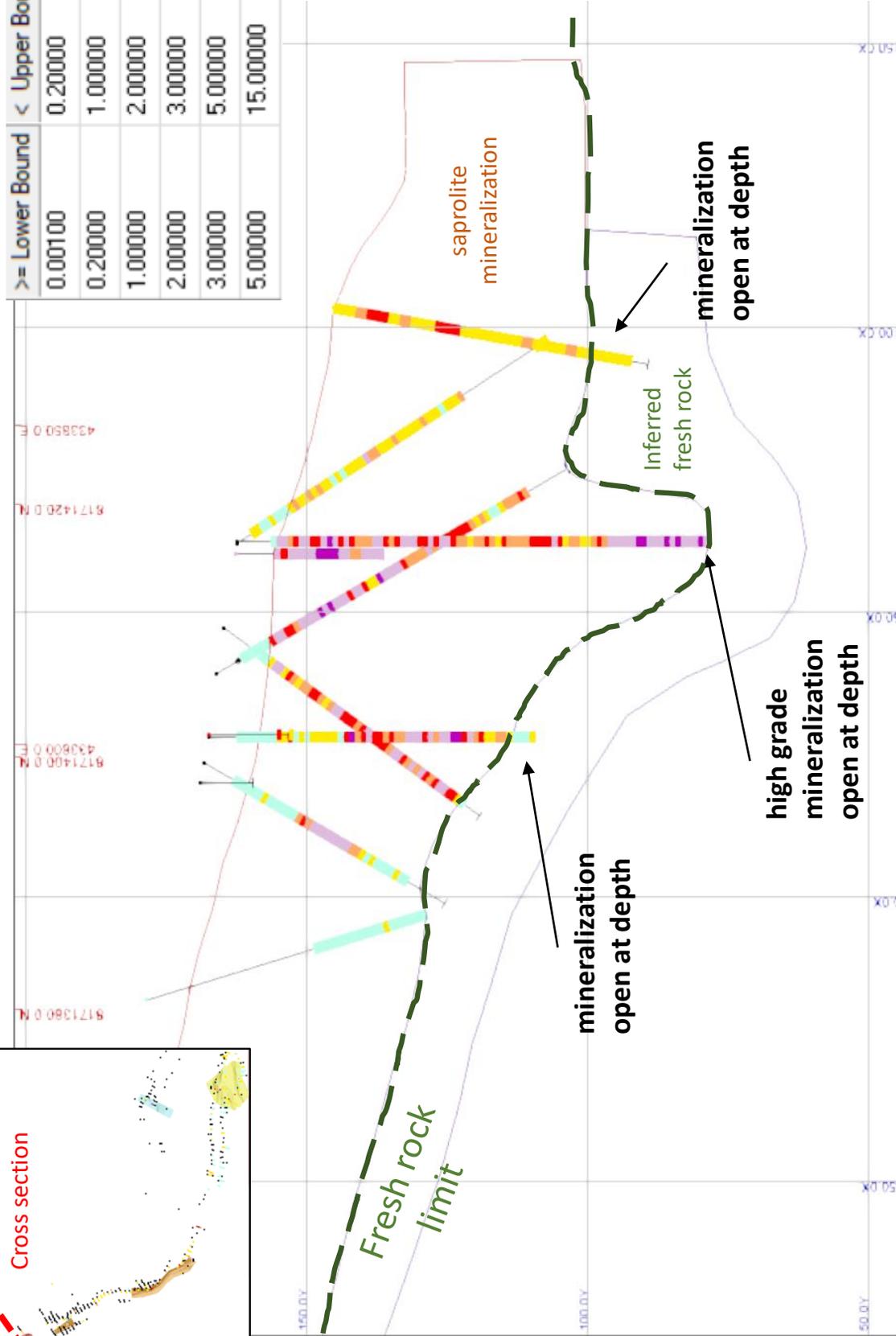


CROSS SECTION – SAO MANUEL TARGET AREA

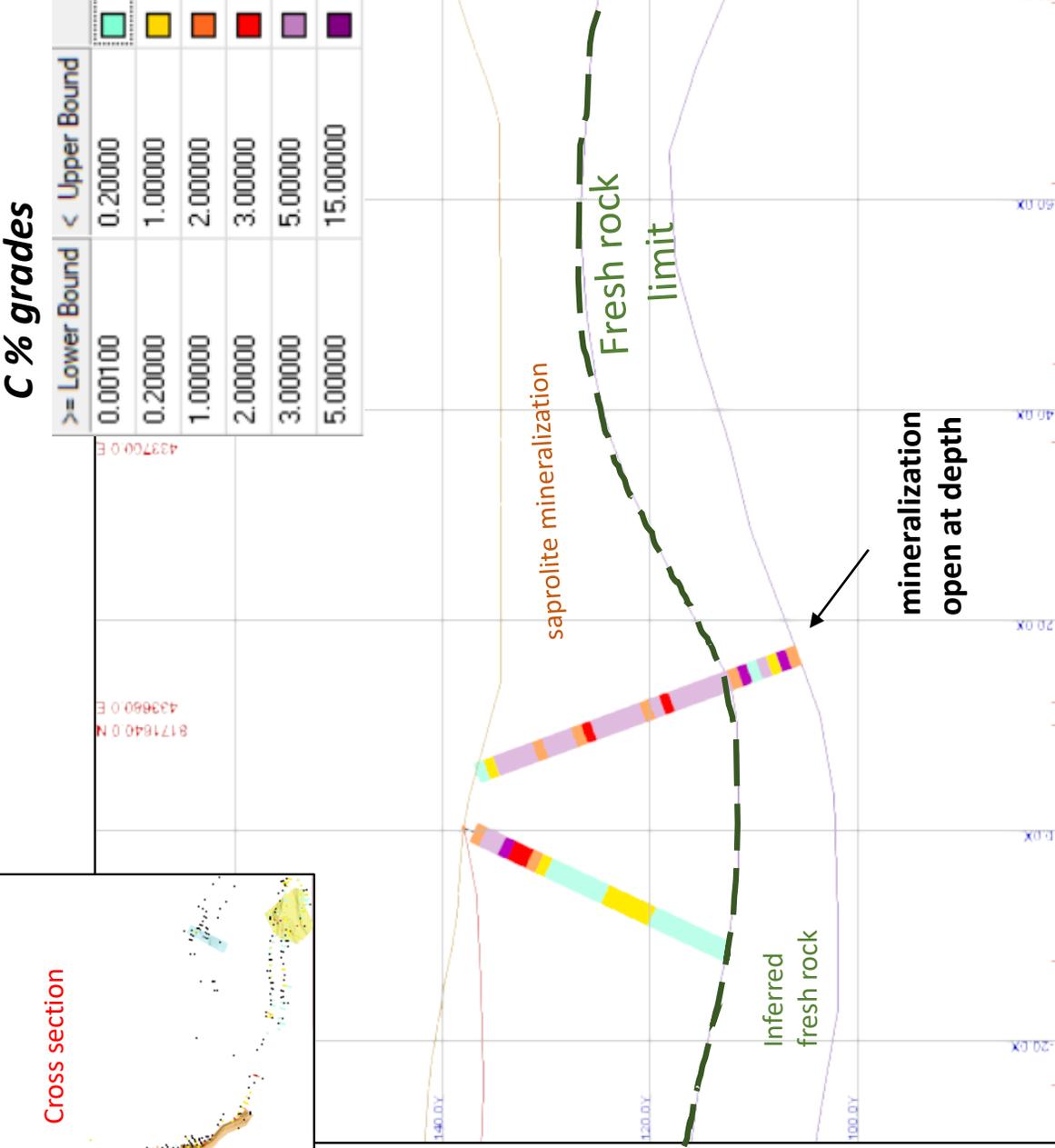
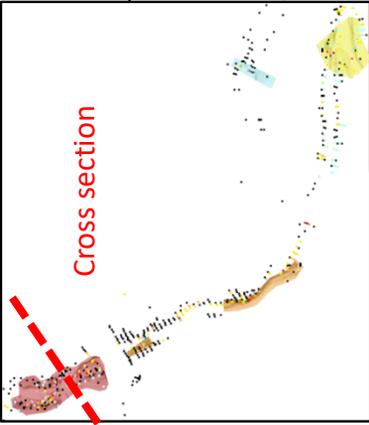


C % grades

>= Lower Bound	< Upper Bound
0.00100	0.20000
0.20000	1.00000
1.00000	2.00000
2.00000	3.00000
3.00000	5.00000
5.00000	15.00000

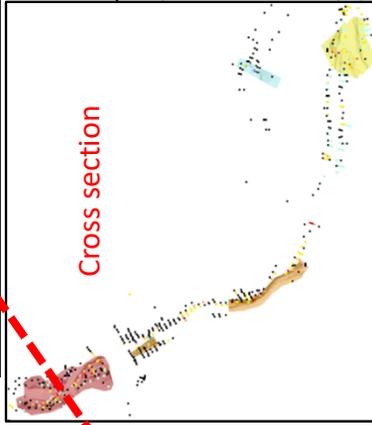


CROSS SECTION – SAO MANUEL TARGET AREA



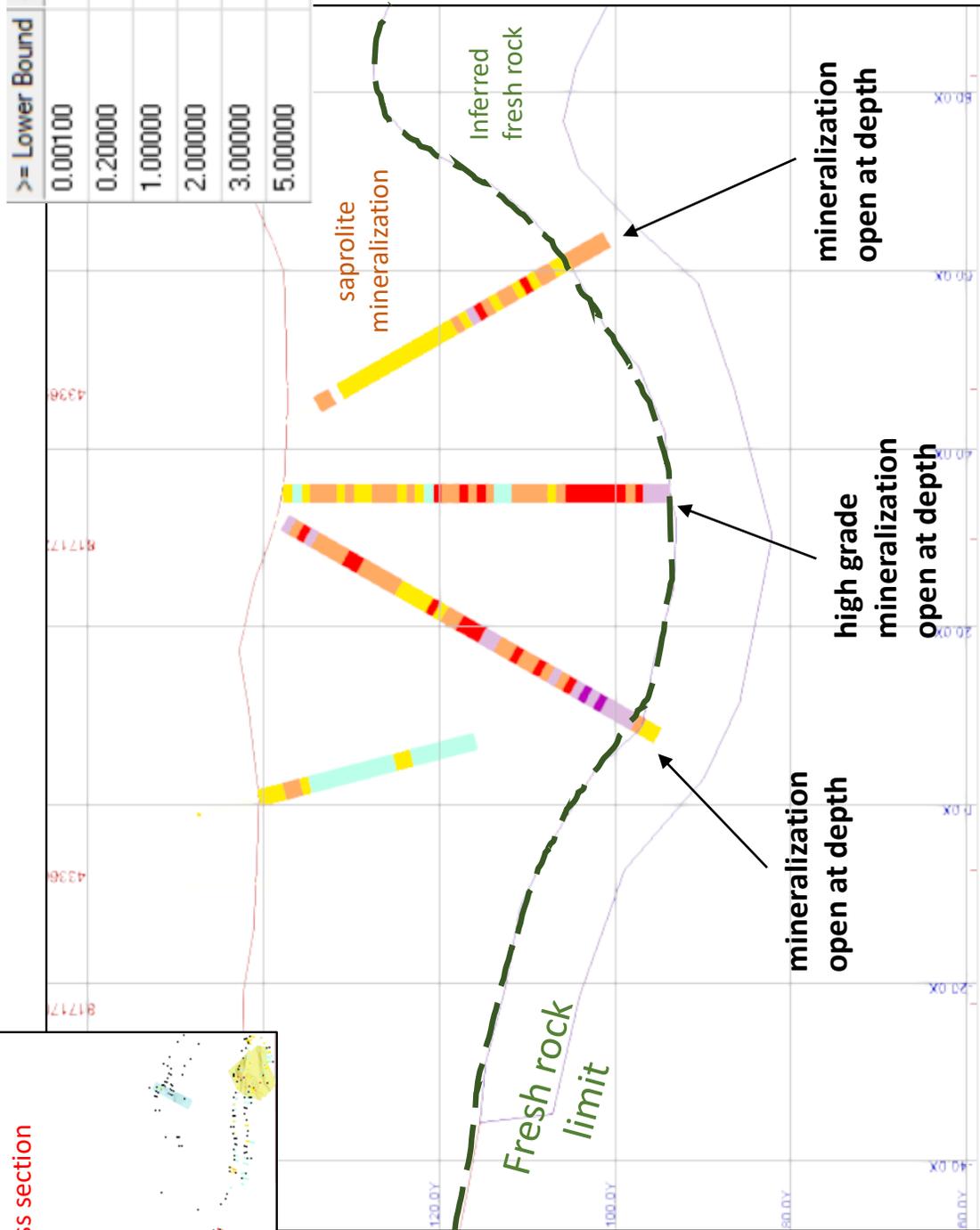


CROSS SECTION – SAO MANUEL TARGET AREA



C % grades

>= Lower Bound	< Upper Bound
0.00100	0.20000
0.20000	1.00000
1.00000	2.00000
2.00000	3.00000
3.00000	5.00000
5.00000	15.00000



saprolite mineralization

Inferred fresh rock

Fresh rock limit

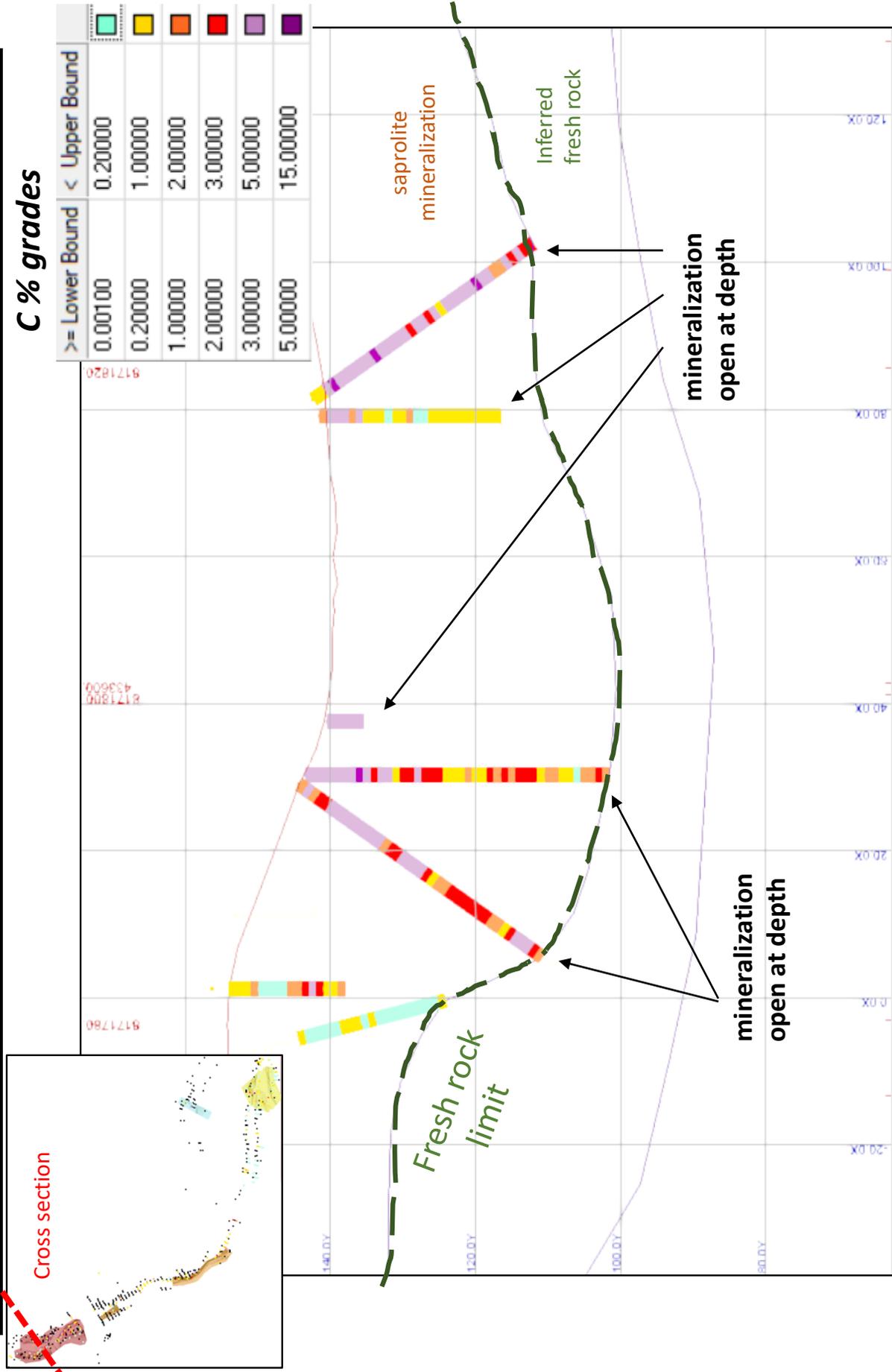
mineralization open at depth

high grade mineralization open at depth

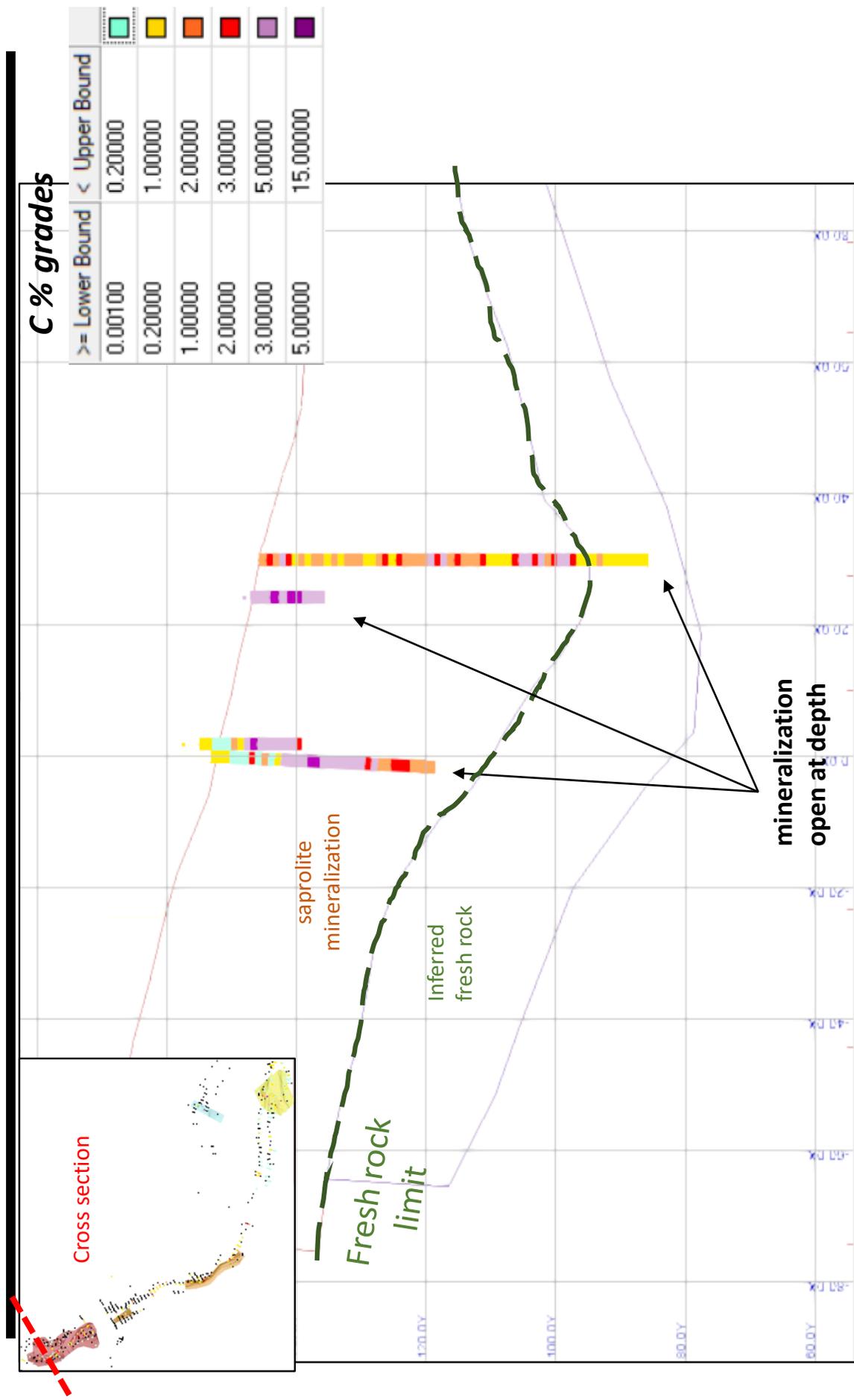
mineralization open at depth



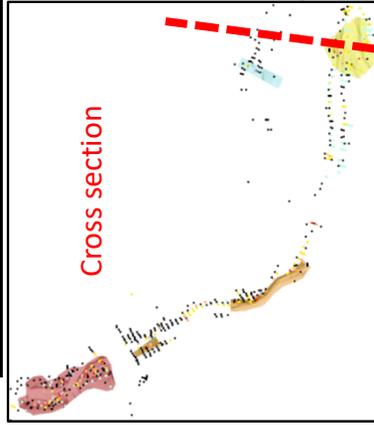
CROSS SECTION – SAO MANUEL TARGET AREA



CROSS SECTION – SAO MANUEL TARGET AREA

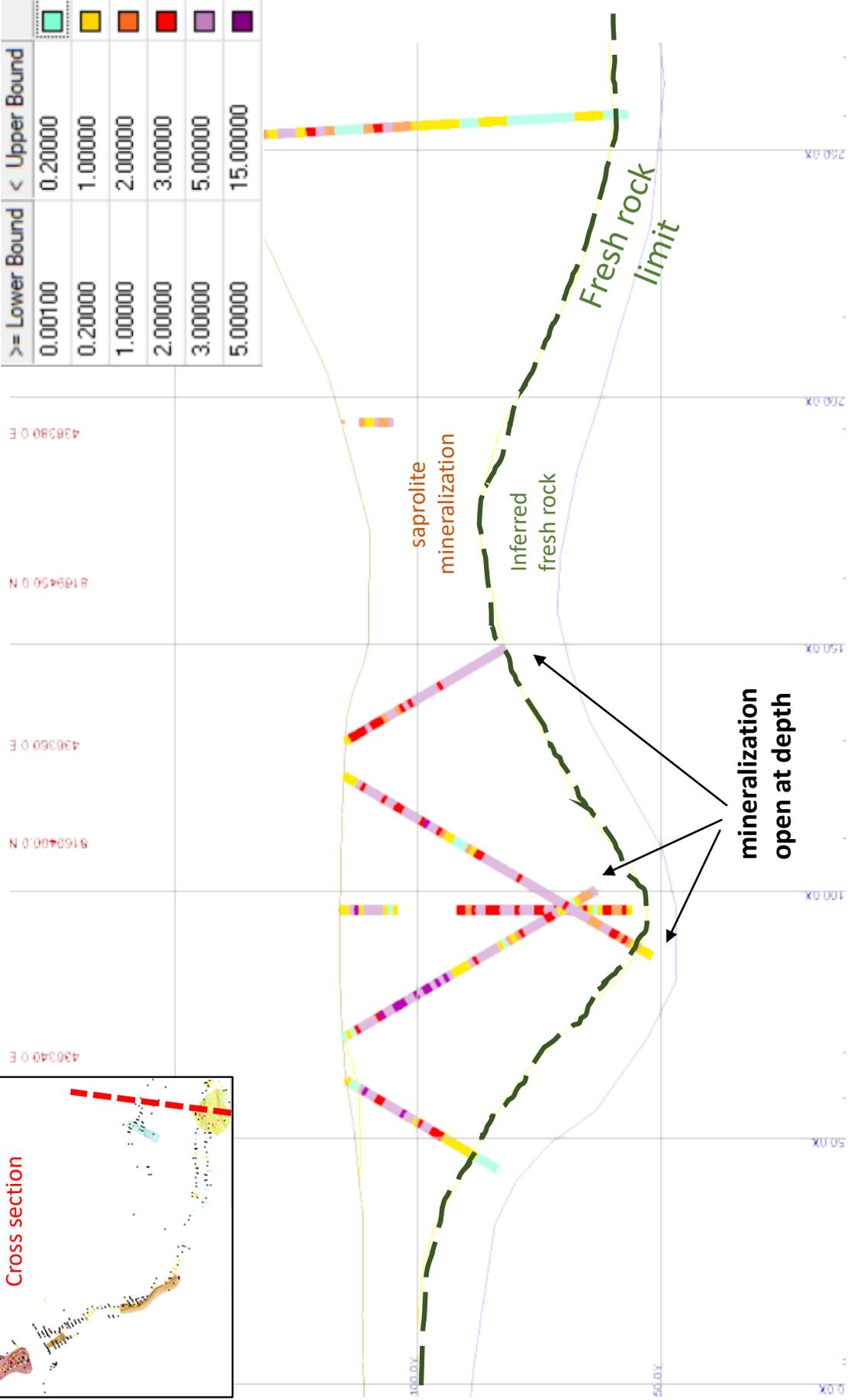


CROSS SECTION – SAO RUBENS TARGET AREA

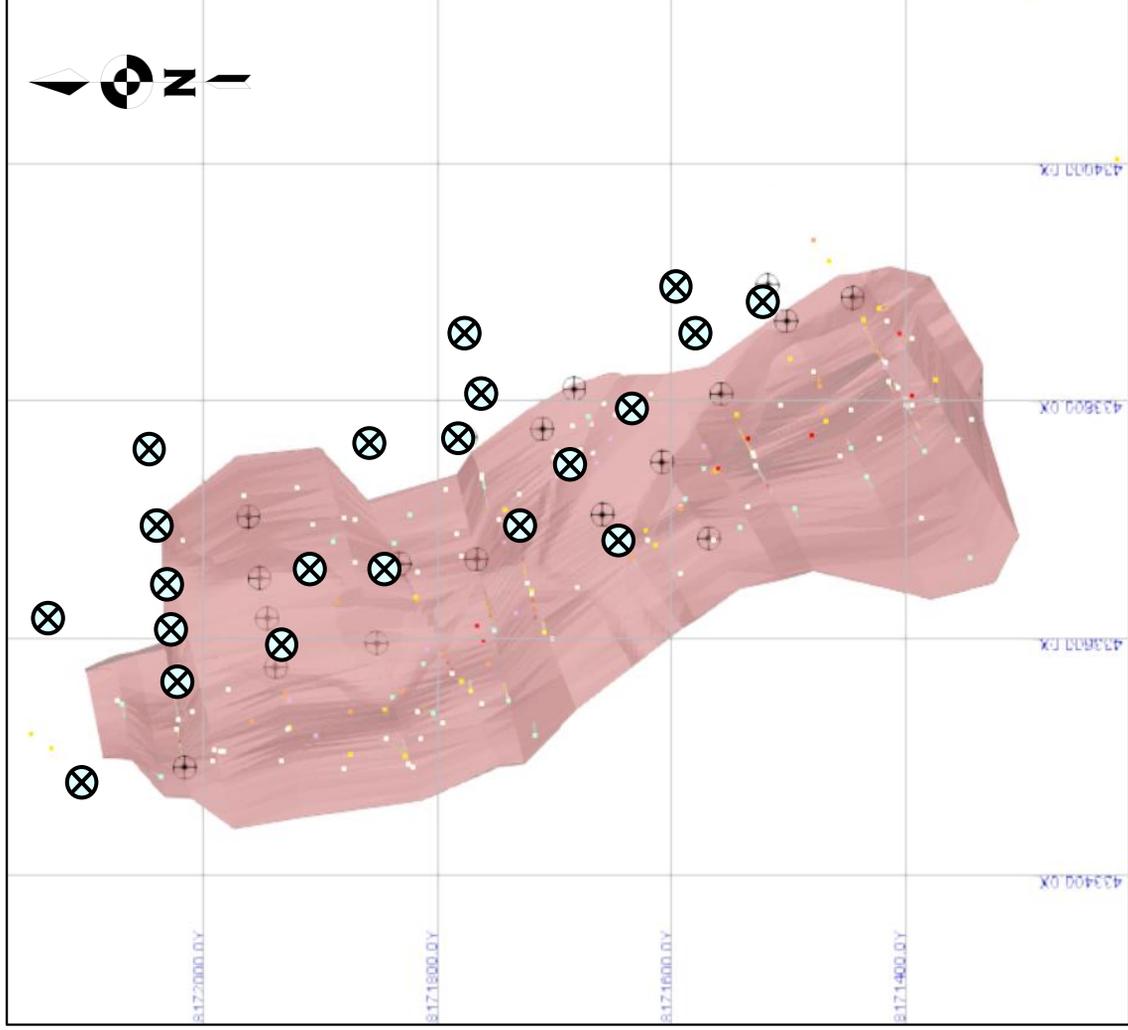


C % grades

>= Lower Bound	< Upper Bound
0.00100	0.20000
0.20000	1.00000
1.00000	2.00000
2.00000	3.00000
3.00000	5.00000
5.00000	15.00000



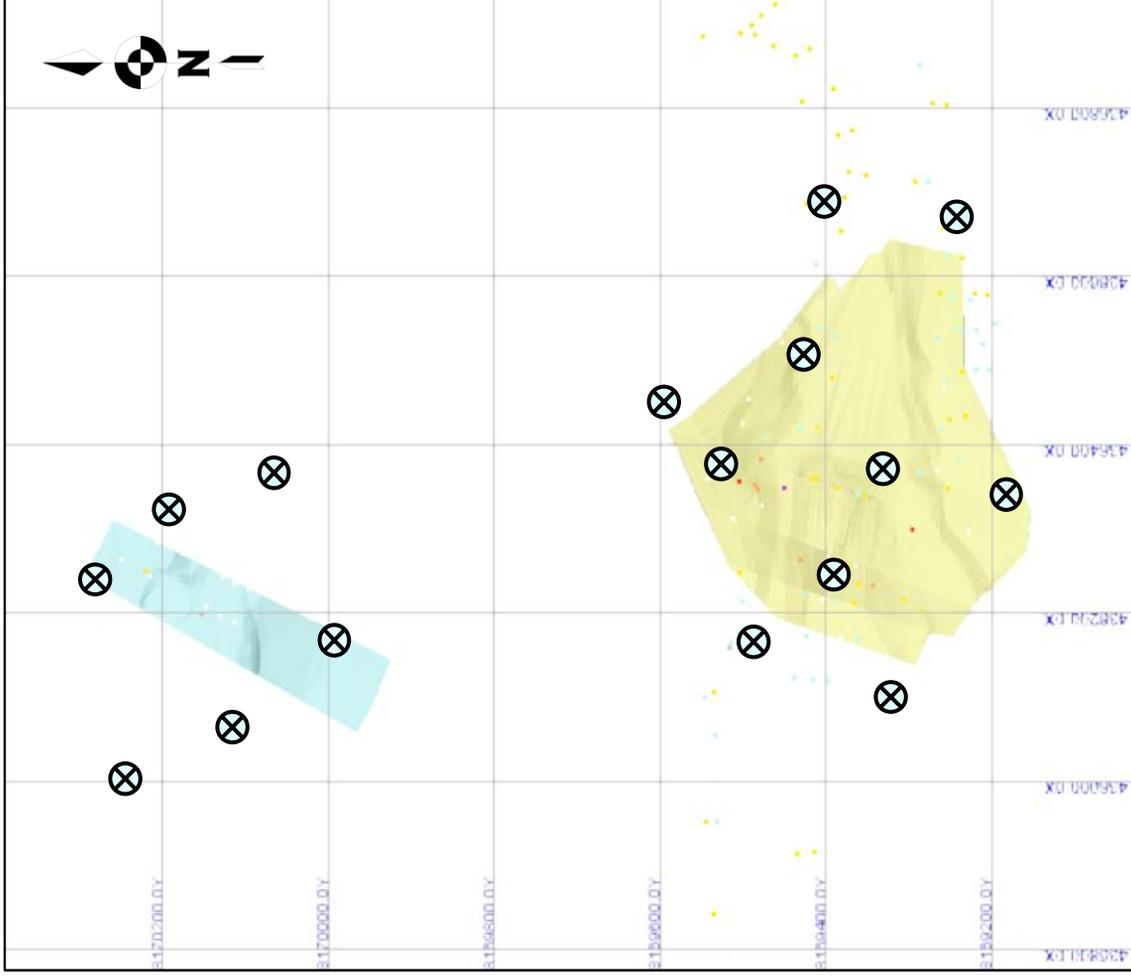
PROPOSED DRILLING PLAN – SAO MANUEL TARGET AREA



São Manoel North	
Boreholes	21
Average depth	55
Total meters	1,155

- ✓ Infill drilling – Resource Classification upgrade
- ✓ Expansion drilling – Resource increase

PROPOSED DRILLING PLAN – SAO RUBENS TARGET AREA



São Rubens West	
Boreholes	16
Average depth	60
Total meters	960

- ✓ Infill drilling – Resource Classification upgrade
- ✓ Expansion drilling – Resource increase

APPENDIX 3 – CERTIFIED REFERENCE MATERIALS

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Pulp Graphite Reference Material

GGC-04

Certified Control Values

Element	Units	Grade	Standard Deviation	No of Analyses	95% Confidence Interval
Graphitic Carbon	%	13.53	0.64	50	+/- 0.18
Total Carbon	%	14.24	0.97	50	+/- 0.28
Total Sulphur	%	0.05	0.02	50	+/- 0.005

CRM Details

Control Statistic Details

Control values for this material were determined during a certification program.

Certification Date

This material was certified with the above values on:
20/05/2013

Source Material

Prior to homogenisation and testing, this material was sourced from:
Graphite, Eyre Peninsula, South Australia

Material Type

Pulp Graphite Ore, 10g samples.

Usage

This product is for use in the mining industry as reference materials for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

This reference material was dried in an oven for a minimum of 8 hours at 90C. The dry material is then pulverised in a bowl and puck mill and homogenised in a vee-blender. The material is then stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into heat sealed, air tight, plastic packets ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

This standard was tested in a dedicated certification program. 10 x 10g samples were sent to 5 laboratories for analysis using a leach process (for graphitic carbon) and a carbon / sulphur analyser. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

10A Marsh Close, O'Connor, Western Australia 6163

Phone : +61 8 9314 2566, Fax : +61 8 9314 3699

e-mail : pjh@geostats.com.au, srr@geostats.com.au

Website <http://www.geostats.com.au>

GGC-04

Geostats Pty Ltd, Certified GRaphite Reference Material, Product Code:

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Pulp Graphite Reference Material

GGC-06

Certified Control Values

Element	Units	Grade	Standard Deviation	No of Analyses	95% Confidence Interval
Graphitic Carbon	%	7.68	0.38	49	+/- 0.11
Total Carbon	%	8.16	0.24	49	+/- 0.07
Total Sulphur	%	0.05	0.02	50	+/- 0.005

CRM Details

Control Statistic Details

Control values for this material were determined during a certification program.

Certification Date

This material was certified with the above values on:
20/05/2013

Source Material

Prior to homogenisation and testing, this material was sourced from:
Graphite, Eyre Peninsula, South Australia

Material Type

Pulp Graphite Ore, 10g samples.

Usage

This product is for use in the mining industry as reference materials for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

This reference material was dried in an oven for a minimum of 8 hours at 90C. The dry material is then pulverised in a bowl and puck mill and homogenised in a vee-blender. The material is then stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into heat sealed, air tight, plastic packets ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

This standard was tested in a dedicated certification program. 10 x 10g samples were sent to 5 laboratories for analysis using a leach process (for graphitic carbon) and a carbon / sulphur analyser. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

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GGC-06

Geostats Pty Ltd, Certified GRaphite Reference Material, Product Code:

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Pulp Graphite Reference Material

GGC-08

Certified Control Values

Element	Units	Grade	Standard Deviation	No of Analyses	95% Confidence Interval
Graphitic Carbon	%	0.39	0.06	49	+/- 0.02
Total Carbon	%	1.03	0.04	48	+/- 0.01
Total Sulphur	%	1.57	0.07	49	+/- 0.02

CRM Details

Control Statistic Details

Control values for this material were determined during a certification program.

Certification Date

This material was certified with the above values on:
20/05/2013

Source Material

Prior to homogenisation and testing, this material was sourced from:
Flake graphite, Halls Creek, Western Australia

Material Type

Pulp Graphite Ore, 10g samples.

Usage

This product is for use in the mining industry as reference materials for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

This reference material was dried in an oven for a minimum of 8 hours at 90C. The dry material is then pulverised in a bowl and puck mill and homogenised in a vee-blender. The material is then stored in a sealed, stable container ready for final packaging.

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Assay Testwork

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Website <http://www.geostats.com.au>

GGC-08

Geostats Pty Ltd, Certified GRaphite Reference Material, Product Code:

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Pulp Graphite Reference Material

GGC-10

Certified Control Values

Element	Units	Grade	Standard Deviation	No of Analyses	95% Confidence Interval
Graphitic Carbon	%	4.79	0.29	50	+/- 0.08
Total Carbon	%	5.22	0.18	49	+/- 0.05
Total Sulphur	%	4.40	0.19	49	+/- 0.06

CRM Details

Control Statistic Details

Control values for this material were determined during a certification program.

Certification Date

This material was certified with the above values on:
20/05/2013

Source Material

Prior to homogenisation and testing, this material was sourced from:
Flake graphite, Halls Creek, Western Australia

Material Type

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Usage

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Assay Testwork

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Website <http://www.geostats.com.au>

GGC-10

Geostats Pty Ltd, Certified GRaphite Reference Material, Product Code:

APPENDIX 4 – QUALIFIED PERSON CERTIFICATE

QUALIFIED PERSON CERTIFICATE

Luiz Eduardo Campos Pignatari - Comisión Calificadora de Recursos y Reservas Mineras Chile
(Chilean Commission for the Qualification of Competencies in Mineral Resources and Reserves) -
CH 20.235 No 288

Address: Av. Jacutinga, 493, apto 42 - São Paulo, SP - 04515-030 - Brazil

Email: luizeduardopignatari@gmail.com +55 11 99950-4854

I, Luiz Eduardo Pignatari, do hereby certify that:

1- I graduated with a degree in Mining Engineer from the University of São Paulo (1978) with Post Graduation in Mining Operations from the same institution. I have wide experience in operation, manufacturing, research, technical evaluation, economic and financial feasibility studies, with a focus on technology and operational intelligence, in the Gold, Phosphate and Cement industries, in major corporations such as Bunge Fertilizers, Yamana Gold and Camargo Correa Cement. I am Certified as a Qualified Person according to Comisión Minera CH-20.235 No288, accepted by NI 43-101 and JORC.

2- I was the QP and responsible for the preparation of the technical report titled " NI 43-101 Technical Report, Resources Assessment, South Star Mining Corp., on the Santa Cruz Graphite Project, Itabela, Bahia, Brazil" dated August 1st, 2019. I am independent of South Star Mining Corp as that term is defined in section 1.5 on NI 43-101.

As of the date of the technical report on the Santa Cruz Graphite Project, to the best of my knowledge, information, and belief, the portions of the technical information required to be disclosed to make the technical report not misleading..

I have visited the Santa Cruz Graphite Project, on June 17 and June 18 2019.

I was responsible for the overall consolidation and compilation of the Technical Report.

3 - Qualified Person (QP) responsible for resources and reserves according to CH20235 codes, with acceptance to NI 43-101 and JORC:

- Reconciliation Works in Gold Mine Operations, establishing sampling protocols, MCF (Mine call Factor) analysis and operational dilution controls for the following mines São Vicente and São Francisco from Santa Elina's group; Mineração Maracá, MASA (Gualcamayo-Argentina), Pilar de Goiás, Jacobina, MFB and EPP from Yamana Gold.

- Mineable resources evaluation, reserve calculations, mining sequencing and LOM calculation for Yamana mines: Maracá, Jacobina, Gualcamayo (Argentina), MFB, Pilar, C1 and EPP, Santa Elina mines: São Francisco and São Vicente and Aura Gold: EPP Project, Almas Project.

I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Effective Date: June 30st, 2019

Date of Signing: August 1st , 2019

"Luiz Eduardo Pignatari"

Luiz Eduardo Pignatari - Qualified Person