ESPIGÃO POLYMETALLIC PROJECT TECHNICAL PRESENTATION

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The qualified person for Meridian’s projects, Dr. Adrian McArthur, B.Sc. Hons., PhD., FAusIMM, CEO and President of Meridian, has verified the technical and scientific contents of this presentation.

Note: All dollar amounts are in US dollars unless otherwise denoted

Espigão Project

Polymetallic targets established: Diverse vein / breccia system associated with Proterozoic A-type granite complex.

- Auriferous quartz-pyrite veins.
- Extensive manganese / iron oxide breccia systems at surface:
  - Interpreted to be a high-level expression of deeper-rooted polymetallic vein arrays.
  - Regional zonation recognized reflecting metal partitioning
  - Drill targets defined based on magnetic modelling and conductivity.
- Located in a mining-friendly region:
  - State of Rondônia - tax incentives bring the effective tax rate down to 15.25% for the initial 10 years.
  - Geologically part of the the Juruena Domain, Rondônia-Juruena Province, Southern Amazon Craton - extending east to Mato Grosso, renewed regional interest in gold-base metal exploration.
- Advanced tenure with one mining lease, two mining lease applications, and extensive exploration tenure.
- Strong community relations established.
  - Experienced local in-house team, good community support for mining, most areas covered by exploration access agreement.

ESPIGÃO BASED ON GEOPHYSICS GEOCHEMICAL GEOLOGICAL & DRILL DATA

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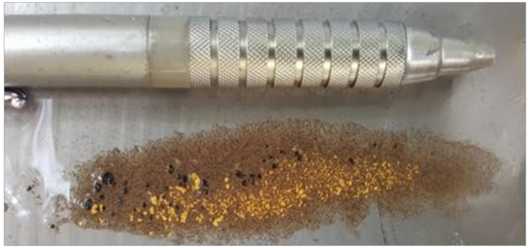








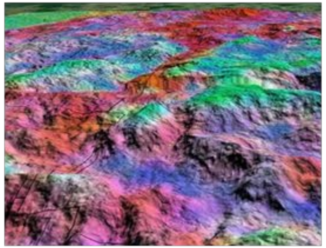
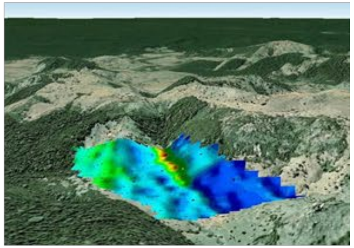




GEOLOGY

- Tectonic Setting
- CPRM Mapping and Classification
- Lithogeochemistry

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Regional Setting – Amazon Craton

The Amazon Craton consists of an Archean nucleus and westward-accreting to Proterozoic terranes.

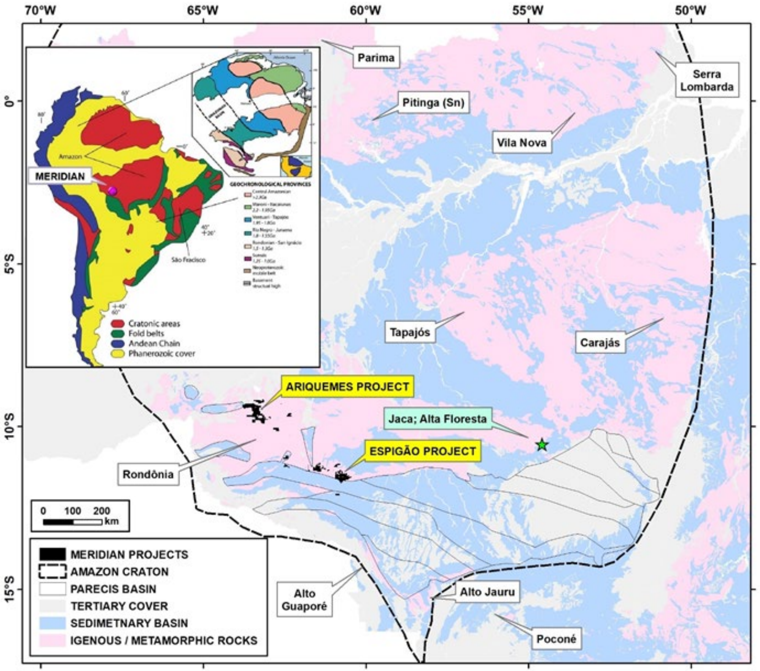
Areas of crystalline basement hosting metalliferous provinces are separated by Proterozoic – Phanerozoic basins.

The craton is known for its significant endowment, hosting major resources of gold (orogenic / IOCG-style), tin, iron, and manganese.

The province has seen renewed exploration interest by major explorers, following recent copper discoveries.

The craton remains a prospective frontier for exploration:

- Limited modern exploration (often limited exploration in general)
- Mineralization concealed by tropical weathering and shallow cover. (Scope for new generation of discoveries missed by early prospects)
- Fundamental geological knowledge still evolving.



SOUTHERN AMAZON CRATON – TECTONIC DOMAINS

Espigão: located in the Rondônia-Juruena Province, Juruena Domain

Analogues in basement architecture with the Jaca copper discovery:
- located proximal to a NW-trending domain-bounding structure.
- located proximal the hinge zone of the intra-cratonic Parecis Basin

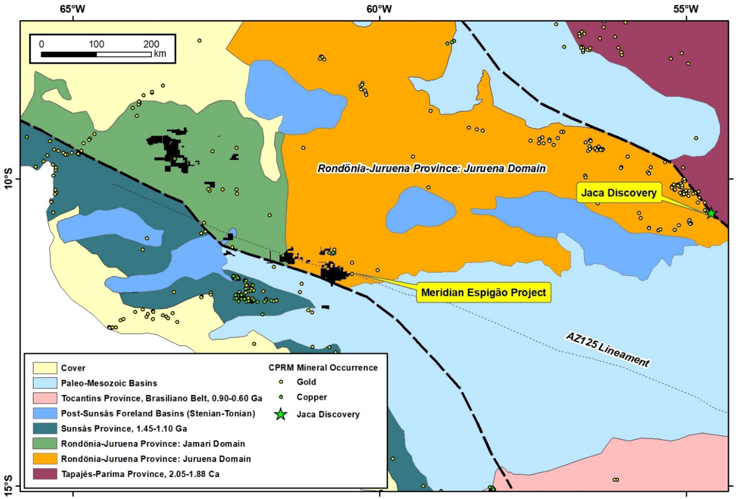
Transected by the mantle-tapping inter-cratonic lineament (AZ125) channelled alkaline igneous pulses from Proterozoic to Phaneroic times.

Rondônia-Juruena Province- assembled over ~300 m.y. (~1820 - 1500 Ma)
- **Jamari Domain** (west): arcs accretion, ocean basin closure, from 1770 Ma
- **Juruena Domain** (east): Andean-type continental arc formed between 1790 - 1760 Ma (continental basement dated to ~1819 Ma)

Multiple compressional events described:
- 1670-1630 Ma: D1 – high-strain event registered in Jamari Domain.
- 1400-1300 Ma: oblique collision event against Paragua block in Bolivia.
- 1250 - 950 Ma: Sunsás Orogeny – recognized across all domains.

Post- collisional A-type rapakivi granites cluster in ages from 1600-1530 Ma, 1406-1309 Ma, 1082-974Ma.

Tin mineralization focussed in the Jamari Domain, ~ 1000 Ma.



After Santos (2003)

Geological Surveying – Mapping and Dating

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Government maps over Espigão are regional sacled (1:1M). Tropical weathering limits mapping. The CPRM is still building geochemical & geochronological databases to resolve relationships. Comments on the principal units, as officially shown:

Western sector: Serra da Providência Intrusive Suite

- CPRM Mapping: Shows an anorogenic AMCG Suite (rapakivi- mangerite-charnockite-syenogranite); 1532- 1547Ma.
- Geochronology: nearest samples date at 1870, 1855, 1545 Ma.
- Field: local exposures show schists & gneisses, intruded by later granites.

Eastern sector: Rio Pardo Intrusive Suite

- CPRM Mapping: Shows a late to post-orogenic monzogranite-granodiorite suite; listed as 1005 - 1000Ma.
- Geochronology: nearest samples date at 1740, 1620, 1550 Ma (instead suggests Juruena basement and 1st phase of anorogenic granite?).
- Field: diversity of plutonic to subvolcanic (-?volcanic) units…. Generally low-strain.

Southern sector: Pimenta Bueno Graben
CPRM Mapping: Silurian-Carboníferous sediments. Part of the Parecis basin, thought to have been active since at least the Neoproterozoic).
Field: Gently inclined sediments; geophysics suggests in part the basin onlaps a shallower shelf of crystalline basement before deepening.

Cacoal Suite

- CPRM Mapping: Tholeiitic mafic intrusion of the "Cacoal Suite" (anortosite, gabbro-norite, peridotite, pyroxenite, troctolite; est. 1400- 1200Ma.
- Geochronology: no local dating.
- Field: poorly exposed area; float of undeformed pyroxenite to gabbro.

The area is overprinted by a swarm of NE-trending mafic dykes. The event is un-dated in the project area, a swarm to the north is dated at 1524Ma, close to the closing stages of the first phase of post-orogenic granites.

SOUTHERN AMAZON CRATON – TECTONIC DOMAINS

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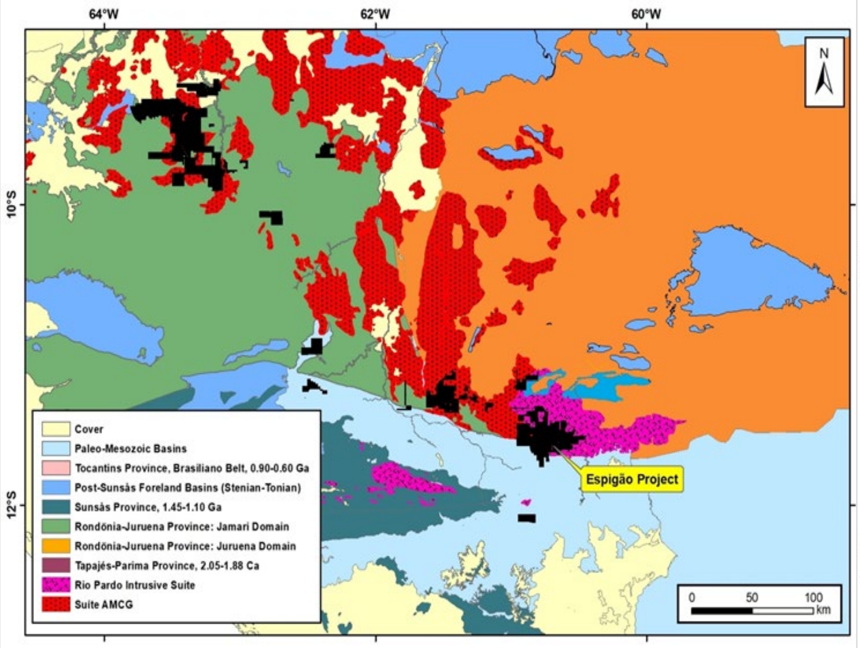
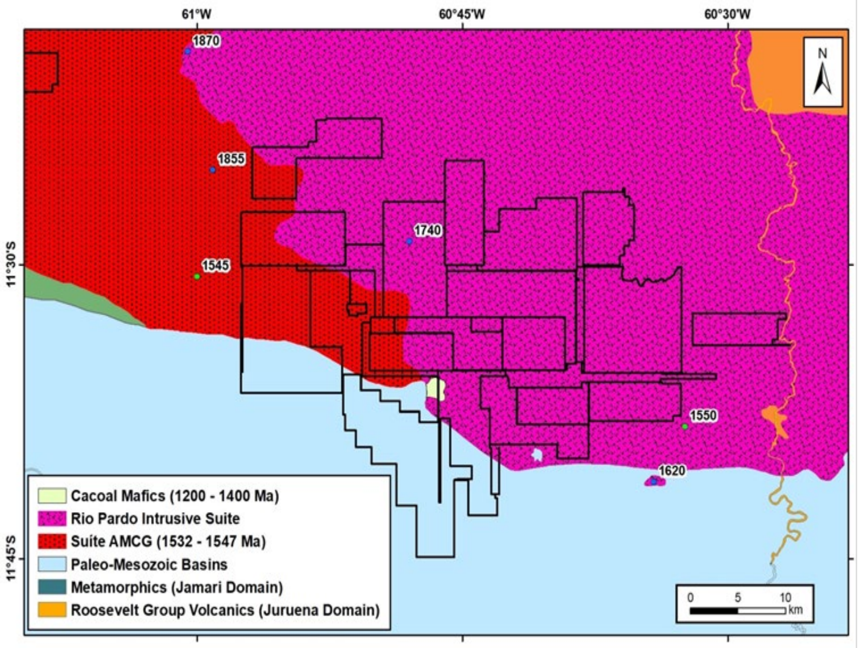
"Evolving geological understanding"



Overview - After CPRM (2007) & Santos (2003; tectonic units)



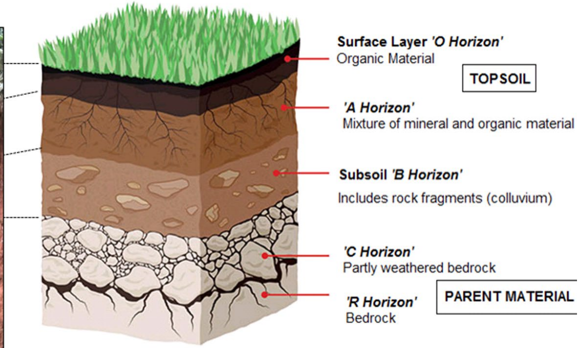
Detail: After CPRM (2007), Geology of Rondonia, 1:1,000,000
With dates from geochronology data superimposed.

Physiography

Areas of higher elevation represent a lateritized palaeosurface (Planalto Dissecado Sul da Amazônia), which obscures bedrock and hinders the effectiveness of surface mapping.

Steeper slopes locally provide intermittent exposure to windows of fresh rock where more resistant granite tors are exposed.

Plains can have thicker soil above deeper weathering profiles developed under tropical weathering regimes. The soils overlie a horizon of dispersed colluvium above the saprolite interface.



Mineralized structures, truncated and degraded by weathering into colluvium and hidden beneath the O/A horizon of the soil profile

Host Rock Succession

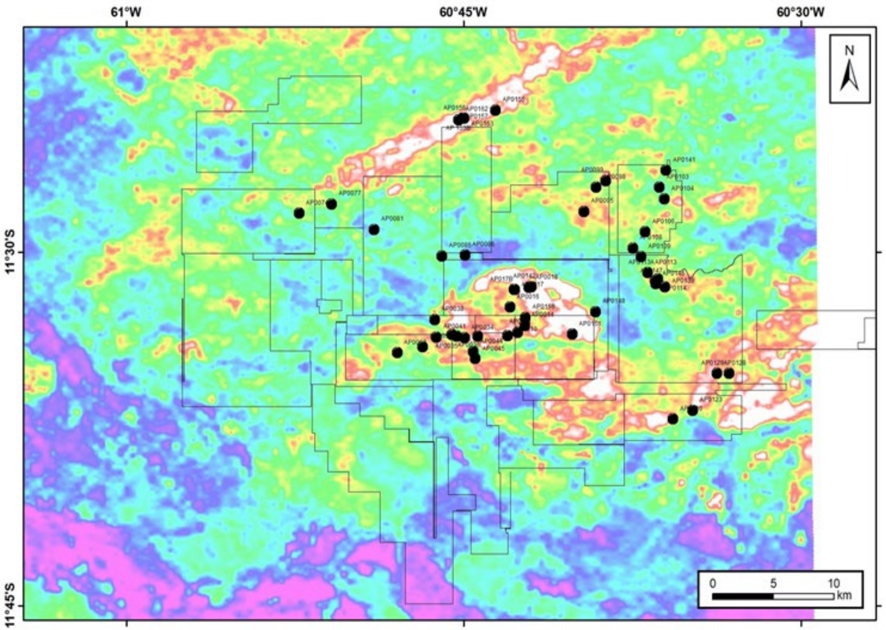
The Company has conducted provisional evaluation of the host rock succession, with 52 samples from the fresher granitoid outcrops sent to ALS Canada for lithogeochemistry.

The study is not definitive, with opportunities to extend coverage and integrate further geochemistry with petrography / geochronology.

The available samples are associated with more resistant silica rick units – more feldspathic units that are recessively weathered may be under-represented; areas in lateritic highlands are affected been deeper weathering and also under-represented.

It is noted that the samples represent the host rock cut by the vein systems, rather than necessarily an intrusive phase directly linked to mineralization (although the possibility remains open that there is a related underpinning evolved late stage intrusive phase).

Some provisional plots of the data are provided, whilst noting that more work is required to confirm genetic relationships.

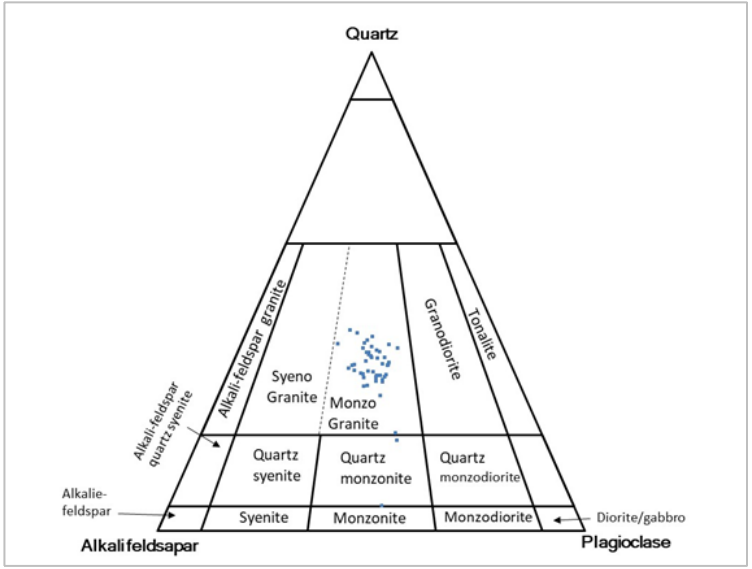


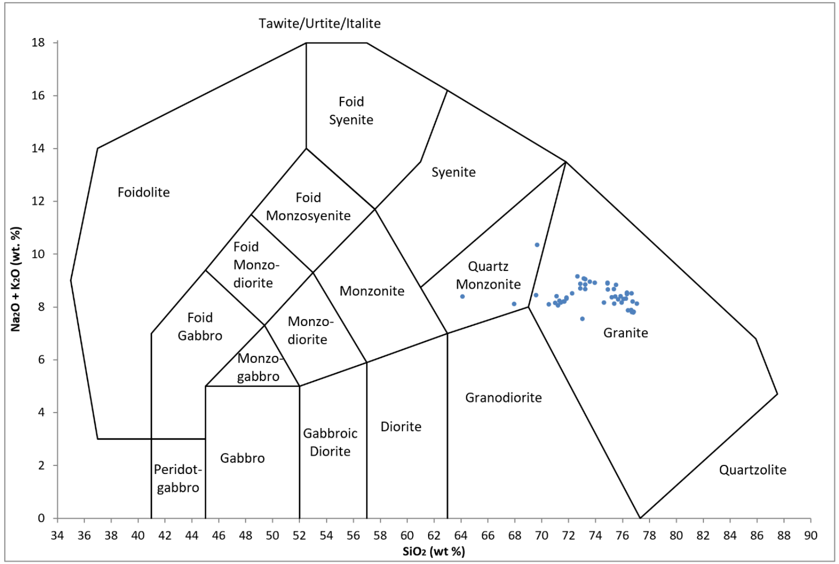
Host Rock Geochemistry

The samples collected plot as monzo-granites to quartz monozites, based on calculation of CIPW norms from whole rock chemistry

Using the TAS classification approach, the samples similarly plot in the granite – quartz monazite field.

Petrographic / mineralogical work would be required as a cross-check for definitive verification based on modal mineralogy.

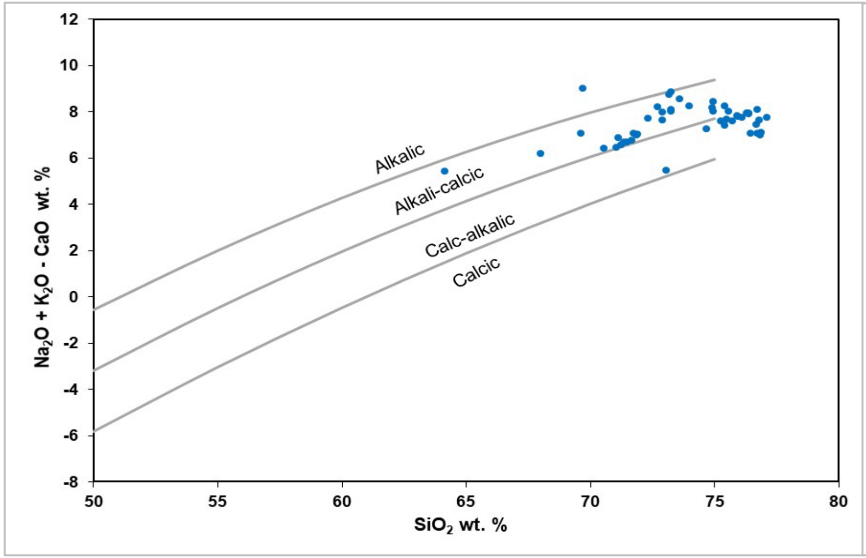


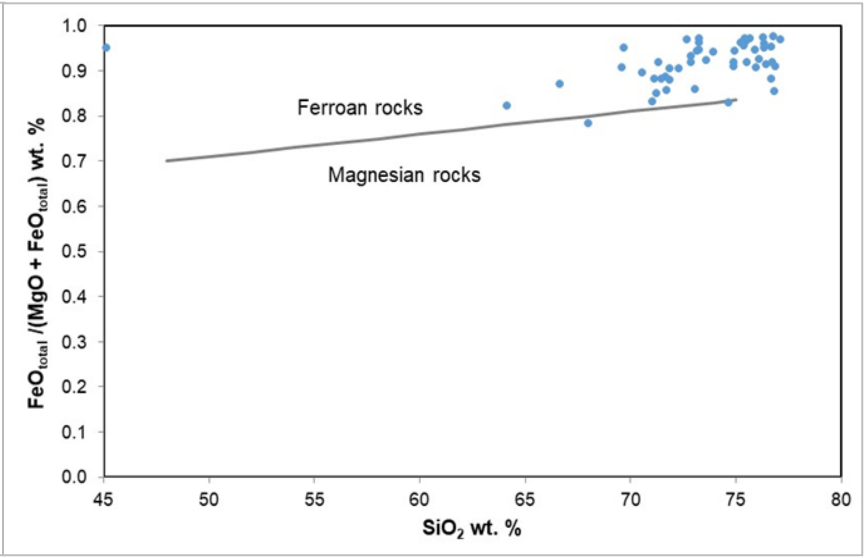


Host Rock Geochemistry

The samples predominantly span the calc-alkalic / alkali-calcic fields, based on the SiO_2 vs. Na_2O+K_2-CaO plot.
Frost, B. Ronald, et al. "A geochemical classification for granitic rocks."Journal of petrology 42.11 (2001): 2033-2048.

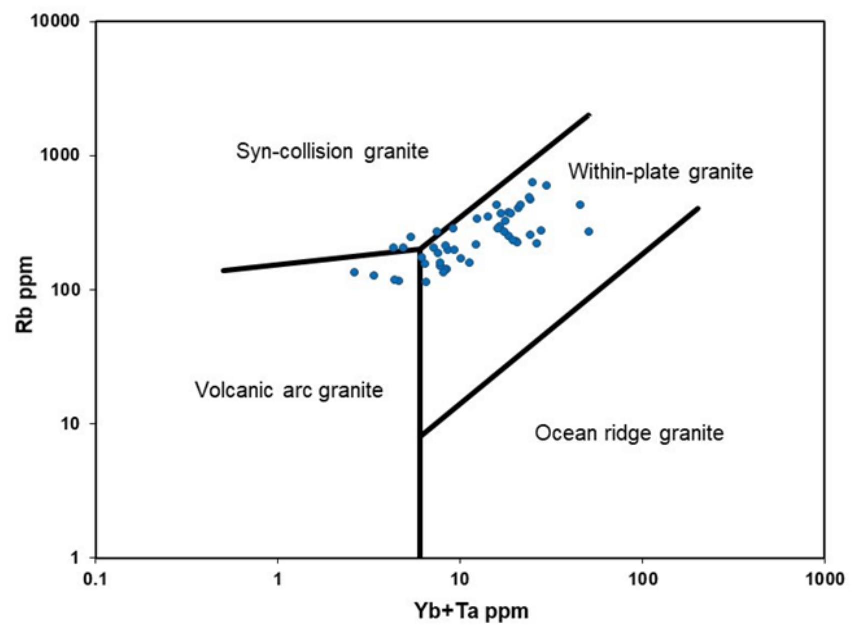
The samples predominantly lie in the Ferroan field, based on the SiO2 vs. FeOtotal /(MgO + FeOtotal) wt. % plot.
Frost, BR and Frost CD. "A geochemical classification for feldspathic igneous rocks." Journal of Petrology 49.11 (2008): 1955-1969.

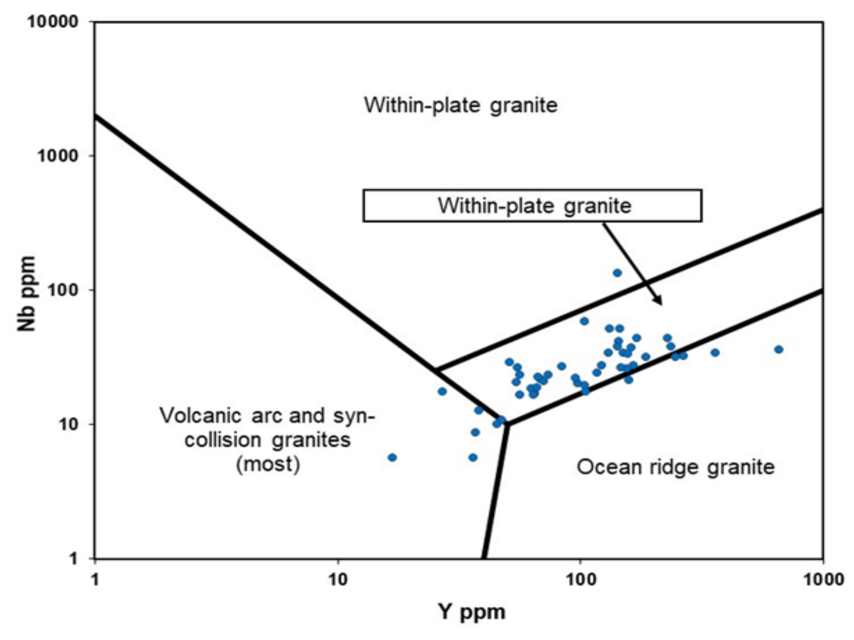




Host Rock Geochemistry

Tectonc discrimination diagram plot the samples mostly in the "within-plate" granite field.
Pearce, J.A., Harris, N.B.W., and Tindle, A.G., 1984, Trace element discrimination diagrams for the tectonic interpretation of granitic rocks: Journal of Petrology, v. 25, p. 956-983.





Host Rock Geochemistry

The K/Rb vs SiO_2 Ratio Plot is useful for showing the evolution and degree of fractionation of granite suites.

Samples from the Espigão collection plot in the range generally taken to reflect a moderate to strong degree of igneous evolution.

The steep decrease in K/Rb ratio with increasing silica is also consistent with fractional crystallisation.

Suites that show classic petrographic and compositional behaviour consistent with fractional crystallisation processes are most commonly those that are associated with significant mineralisation.

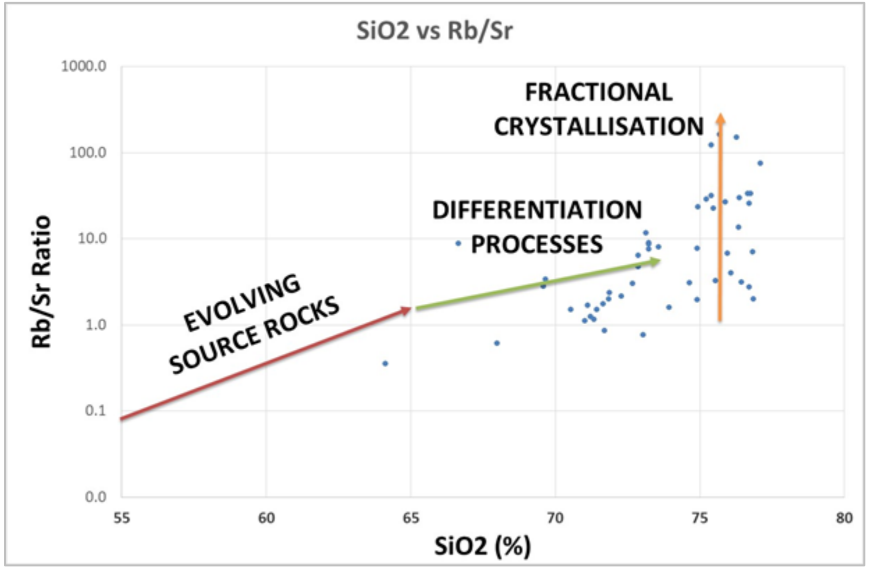
Host Rock Geochemistry

The Rb/Sr ratio also provides an indicator of fractional crystallisation processes, reflecting the partitioning of compatible/incompatible element ratios.

Samples from the Espigão collection show a spread of values, most clustering with a Rb/Sr ratio above 1.0

The data is again consistent with a suite of intrusives generated through fractional crystallisation processes.

Relationships are further supported by Harker diagrams, showing the relationship between silica, major oxides, and minor elements.



Host Rock Geochemistry

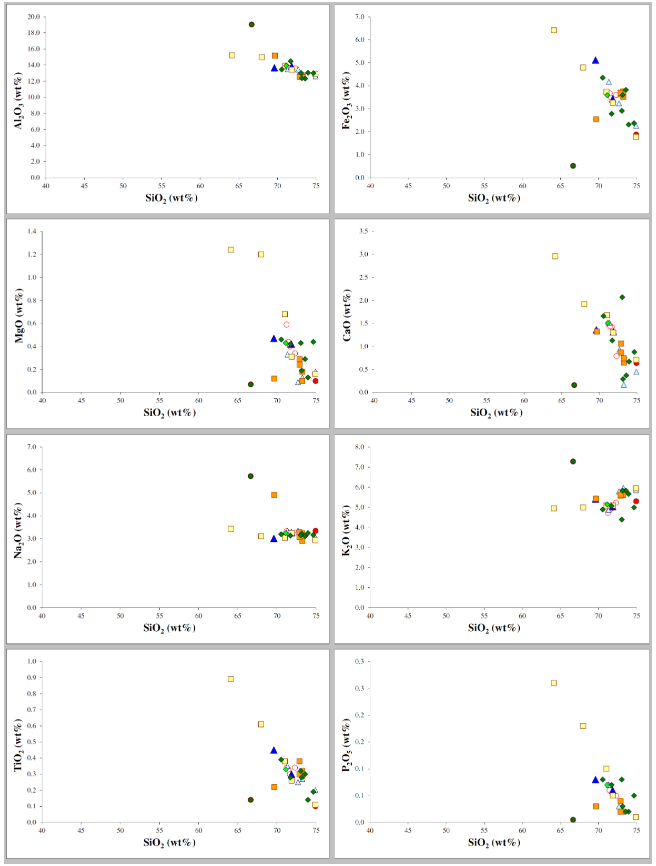
Harker Diagrams

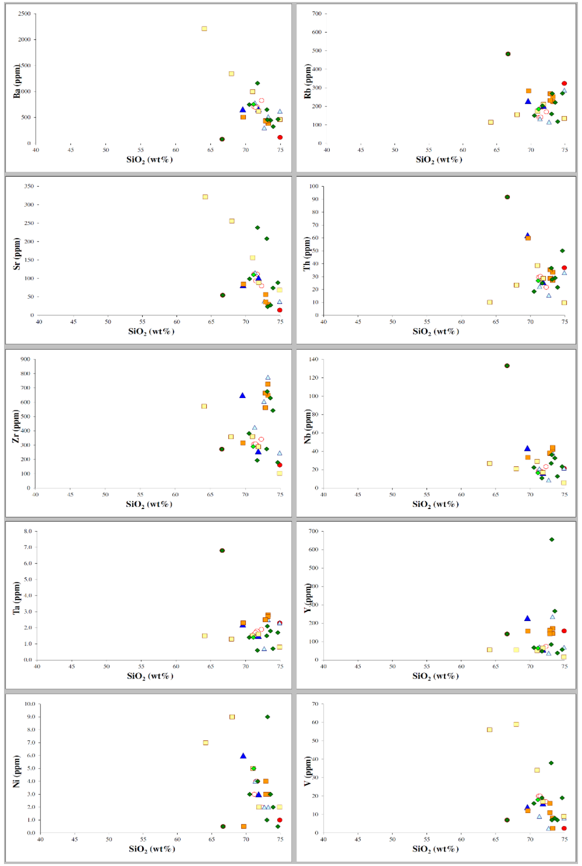
Samples loosely grouped based on field characteristics.

Left: Major Oxides

Right: Minor Elements

Clusters are generally consistent with fractionation trends (two possible outliers in the major oxide field)

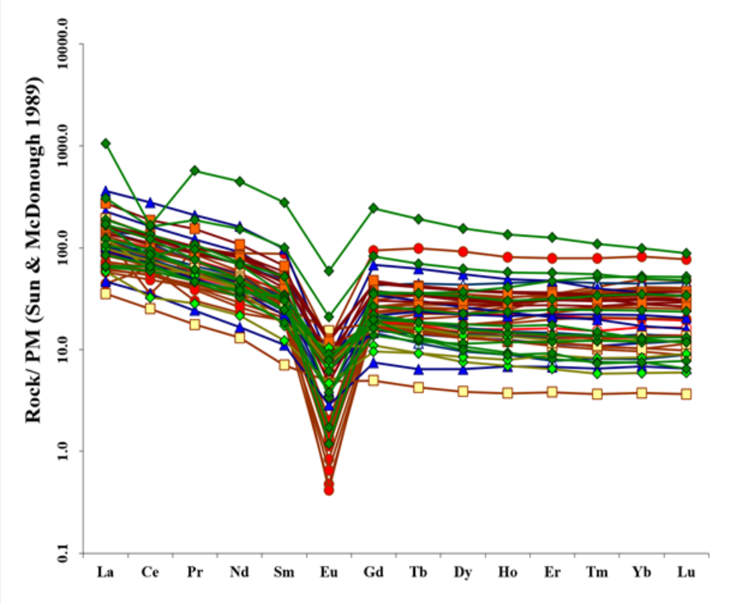


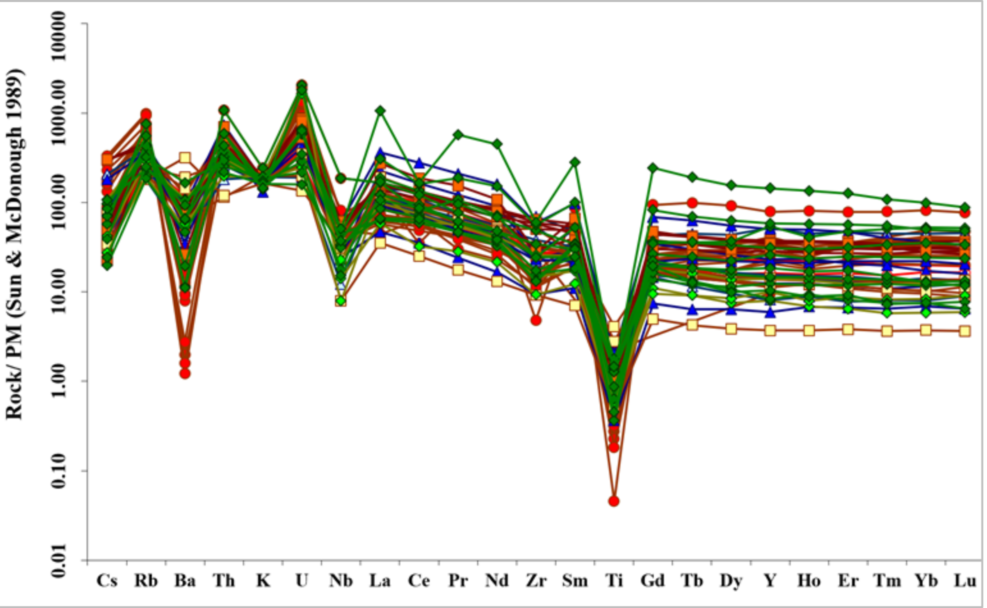


HOST ROCK GEOCHEMISTRY

Spider diagrams normalized against primitive mantle show that feldspars and iron oxides were fractionated from the magmas

Negative barium, europium – fractionation of feldspar
Negative titanium – fractionation of iron – titanium oxides

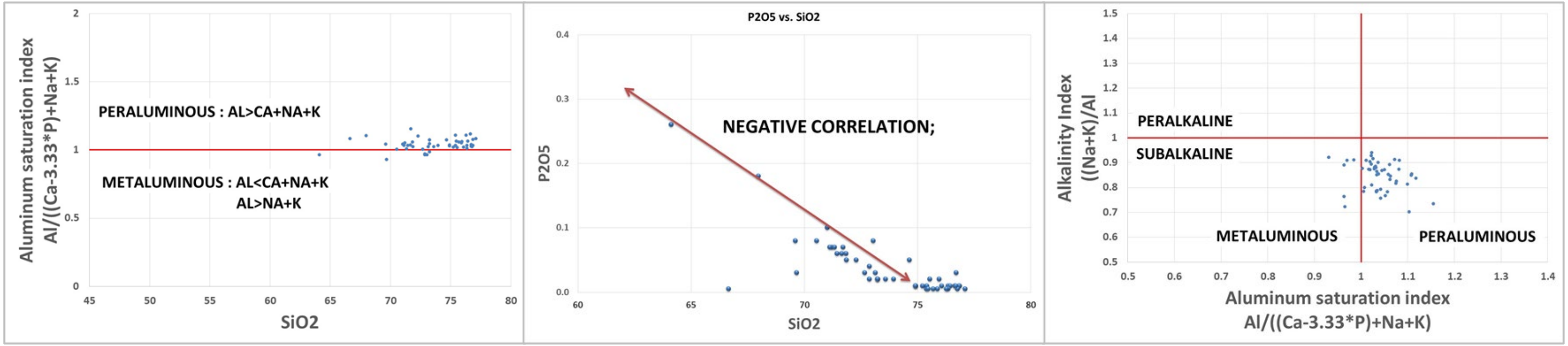




Host Rock Geochemistry

The granites are mainly peraluminous, a characteristic are normally associated with S-type granites.

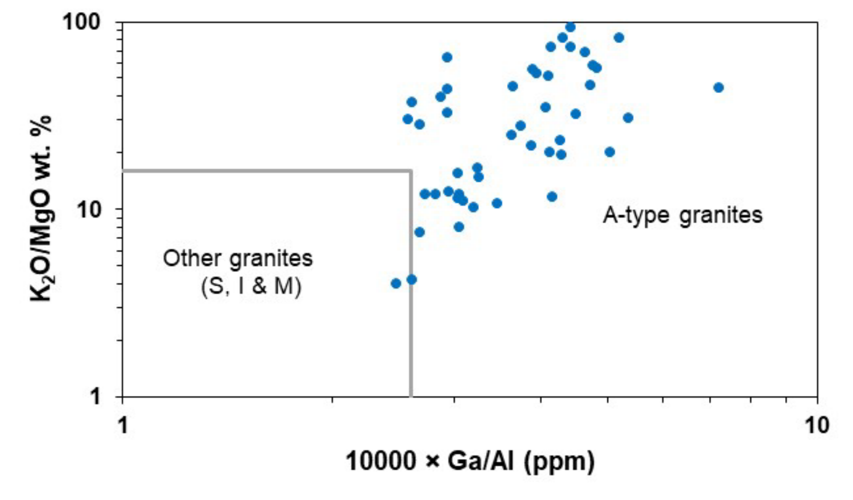
However, a plot of P_2O_5 vs. SiO_2 shows a negative correlation between the two - a characteristic of metaluminous suites.

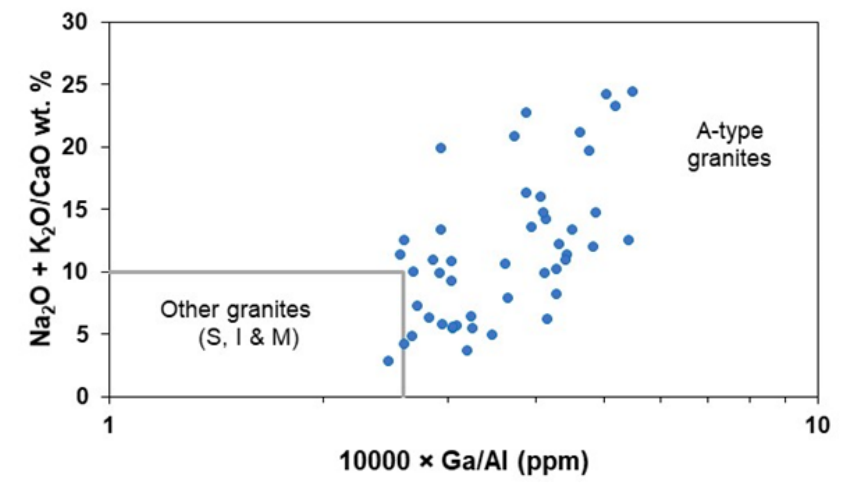


Host Rock Geochemistry

Plots based on Ga/Al ratio vs. alkali metals and K/Mg ratios place the granites in the "A-type" field.

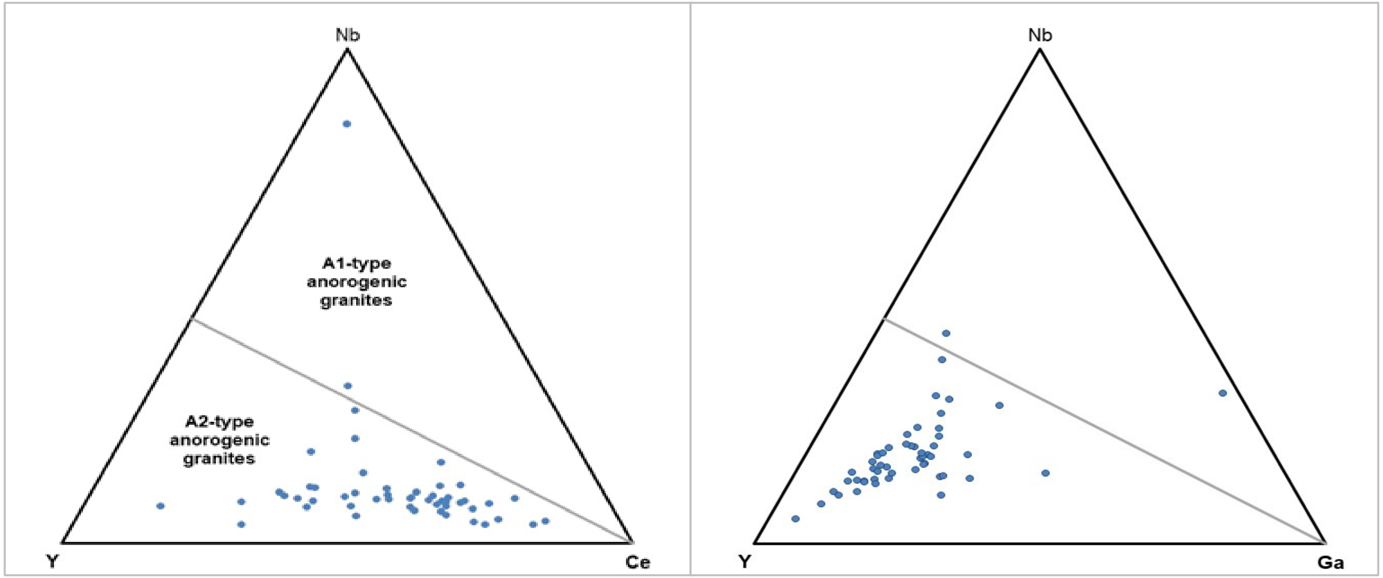
Whalen, Joseph B., Kenneth L. Currie, and Bruce W. Chappell. "A-type granites: geochemical characteristics, discrimination and petrogenesis."Contributions to mineralogy and petrology 95.4 (1987): 407-419.





A type granites have been divided into two types - A1-type anorogenic granites, related to sources that are like ocean island basalt. A2-type anorogenic granites, related to arc-type sources or average continental crust. The samples of the Espigão project are distributed predominantly in the A2 type field. A2 granitoids are know to include a greater diversity of compositions, from metaluminous to peraluminous to peralkaline, and from alkalic to calc-alkalic.

Eby, G. Nelson. "Chemical subdivision of the A-type granitoids: petrogenetic and tectonic implications." Geology 20.7 (1992): 641-644.



Host Rock Geochemistry

A type granites are crystallization products of high temperature melts, at levels not normally achieved in the crust.

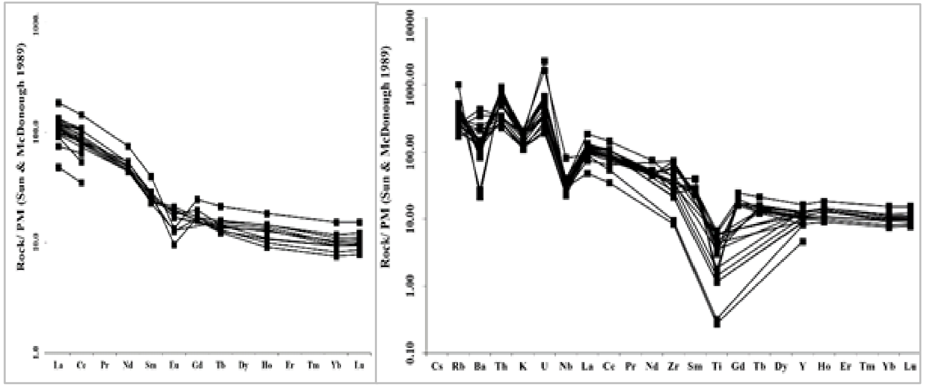
The involvement of mafic magmas, or high mantle heat flow, is considered a necessary factor to achieve these conditions

The data is consistent was derivation of the granitic bodies by fractional crystallization of feldspars, apatite, and Fe-Ti oxide.

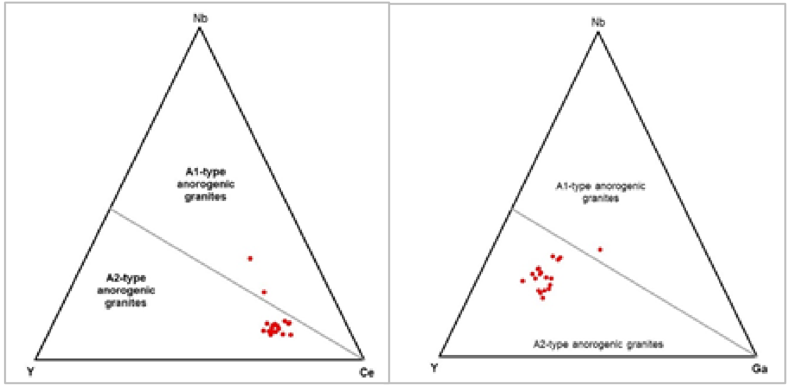
Partial melting of tonalitic to granodioritic crust is considered to contribute to alkali-calcic to calc-alkalic granitoids that are metaluminous at low pressures and peraluminous at higher pressures. Relatively low-pressure conditions are required to obtain metaluminous to slightly peraluminous ferroan compositions; higher pressures produce strongly peraluminous melts.

Other terranes noted to have compositions spanning these fields include the Gawler Ranges - Hiltaba Volcano-Plutonic Association, where IOCG mineralisation is spatially associated with associated with high temperature fractionated A-type magmas.

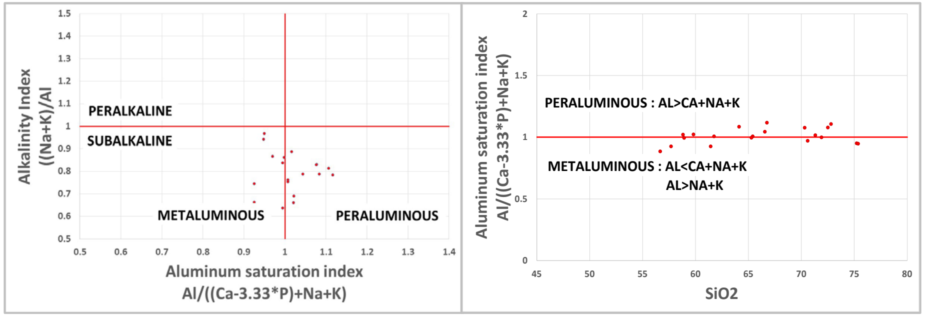
COMPARISON PLOTS OF GRANITOID SAMPLES FROM ROXBY DOWNS



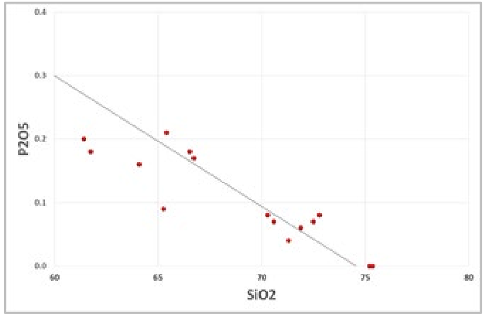
Spider Diagrams; showing similar patterns in Eu, Ti, Ba, Nb



Samples plotting in the A2 field of Eby, 1992



Roxby Granites ASI / AI Indexes

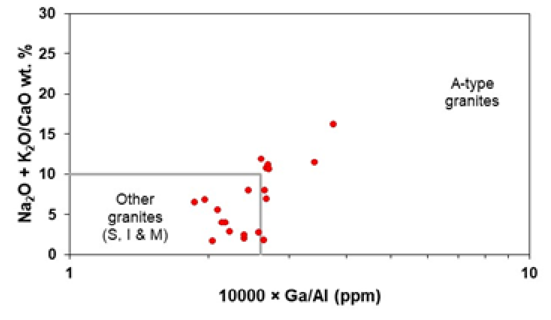


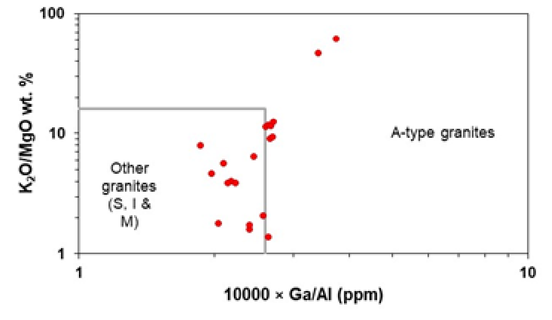
SiO_2 – $P2O_5$: Negative correlation

(Data of Creaser, 1996)

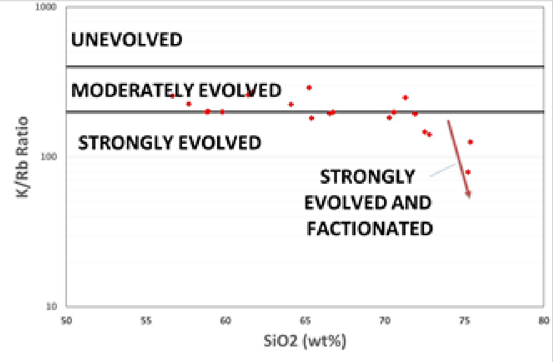
COMPARISON PLOTS OF GRANITOID SAMPLES FROM ROXBY DOWNS

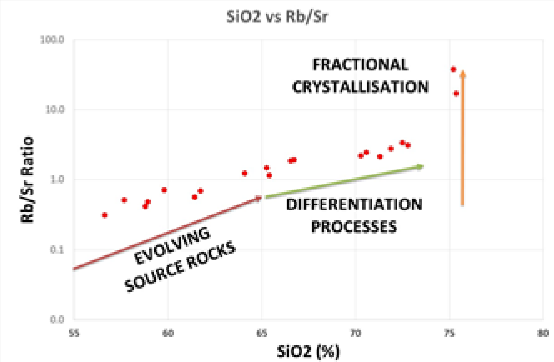
(Data of Creaser, 1996)





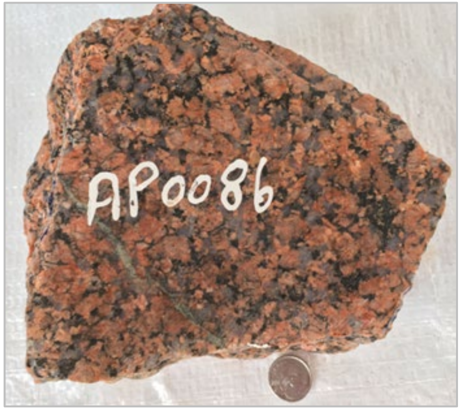
Granites Transitional from A to I field on Whelan et al plot.

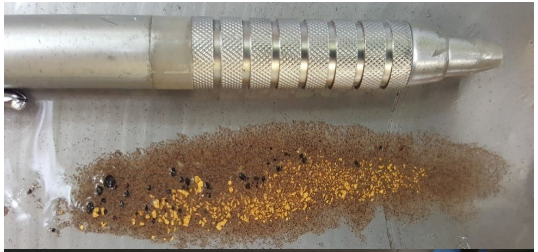




Samples plotting in the A2 field of Eby, 1992

Examples of Espigão Granite Specimens






HYDOTHERMAL SYSTEMS & MINERALIZATION

- Overview of assemblages and zonation
- Iron oxide breccias
- Manganese veins
- Gold-bearing quartz-pyrite veins
- Quartz veins
- Greisen

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VEIN SYSTEMS – DIVERSE METAL ASSEMBLAGE

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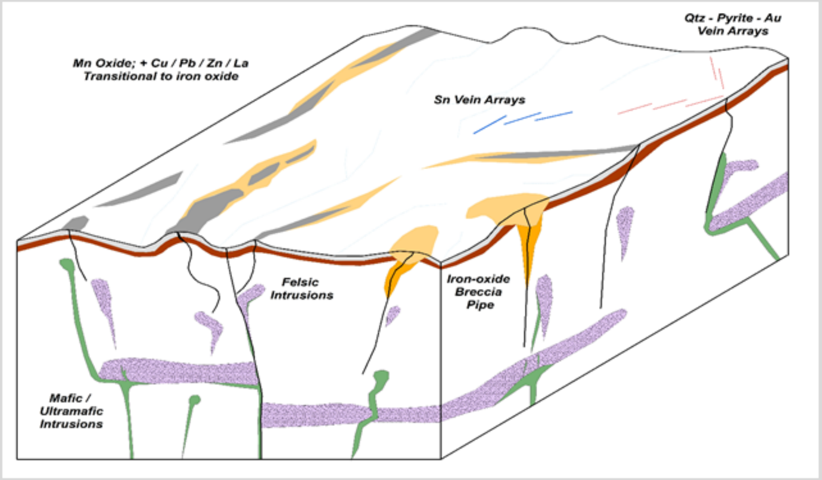
A diversity of vein styles and hydrothermal alteration is evident across the project

Metal assemblages show variation from site to site. The Company's preferred model is that the metals form part of a progressive event, assemblages reflecting differences in pressure / temperature / redox conditions. Further technical studies may test the timing, and whether multiple events are superimposed. Components of the system include:

- Early formed quartz veins: mesothermal (transitional to later epithermal).
- Widespread manganese veins & iron oxide breccias
    - Transitional from and overprinting quartz vein event.
    - Includes base metal (Cu-Pb-Zn) / REE / locally gold-anomalous.
    - Mineralized structures also exploited by mafic/felsic dykes
- Tin-bearing greisen - locally recognized.
- Gold-bearing quartz-pyrite veins
    - mineralization recognized in the east and west of the project area.

Feox / Mnox / base metal / Au / REE



Schematic illustration of vein / hydrothermal systems

Vein Systems – Metal Zonation

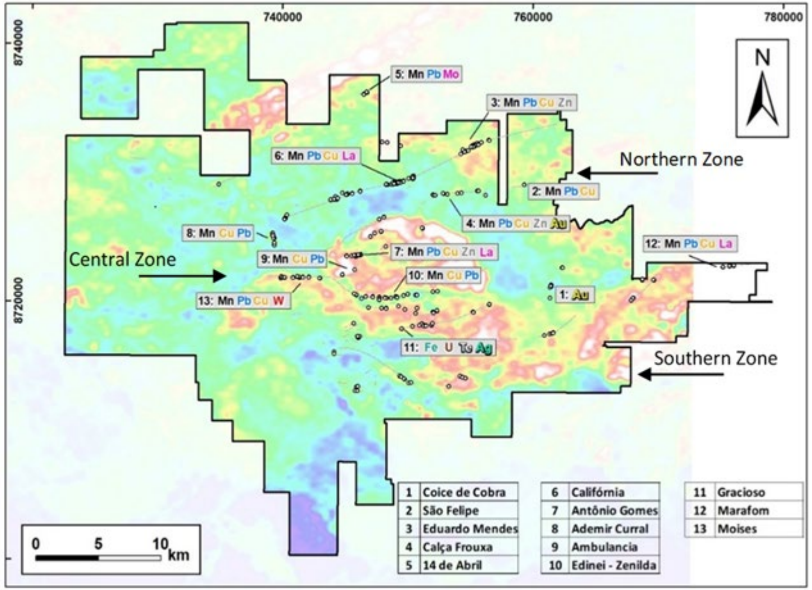
Although polymetallic potential has been recognized, exploration by Meridian to date has been largely focussed on shallow definition of the manganese oxide component of the vein systems (to support production of a niche high-grade Mn oxide product).

Average drill hole depth is ~40 mbs (depth of weathered extends to ~20-30mbs).

The Company has collected multi-element assay, and identified zonation patterns

In northern and central areas, Mn oxide veins often have Cu / Pb assays in excess of 0.1%. Base metal contents locally at percent levels in the northern areas. The southern Mn vein systems have more subdued values, but still commonly anomalous at several hundred ppm.

The Company believes the Mn oxdes represent a high-level hydrothermal component of a zoned metal system, with potential to encounter other metals partitioned at depth (or along strike).



Mineralized Trends,
superimposed on total count radiometrics

“Zoned pattern, suggesting broad magmatic / hydrothermal partitioning”

IRON – OXIDE BRECCIAS

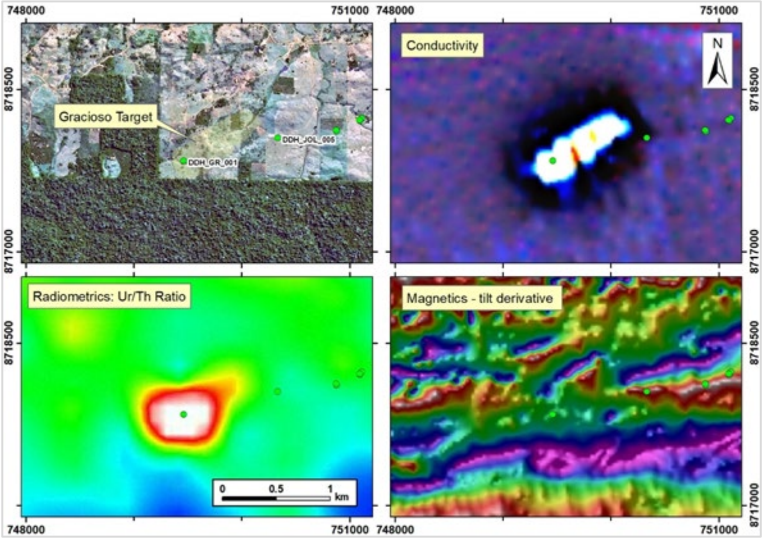
Drilling w historically focused on the manganese mineralization, but one drill site encountering a system of iron-oxide breccias is the “Gracioso” target. In this position, a single hole was located at the SE end of a large conductivity anomaly (900m strike length).

Some float of manganese, chalcedonic silica breccia, and ferruginous material was scattered in on the surface, but the target is otherwise poorly exposed.

A co-incident radiometric anomaly is also evident, marked by elevated total count, with a notably high U/Th ratio (alteration associated with hydrothermal systems can preferentially concentrate uranium compared to thorium, whereas secondary weathering and lateritization concentrates thorium).

The hole DDH_GR_001 was drilled to the NE, and due to constraints at the time, did not transect the full footprint of the geophysical anomaly. An unexpectedly wide package of iron-rich breccias were encountered, with the hole being collared in a zone of anomalous pathfinder elements.

There is a prime opportunity to conduct follow-up drilling, supported by soil geochemistry and ground/down-hole geophysics for targeting, to properly explain the source of the anomaly and test for base metal / gold potential.



Composite image of the Gracioso Target
Aerial Image – Conductivity
Radiomtrics (U/Th Ratio) – Magnetics (Tilt-Derivative)

“Evolving geological understanding”

IRON – OXIDE BRECCIAS

Gracioso Core and Rock Sampes

Left: DDH_GR_001: 15.85m @ 0.9% MnO_2, 5.2% Fe_2O_3, 130ppm U, 0.13ppm Te, 3.4ppm Ag, 91 ppm La from 4.55m

Below: Continuation of breccia system: Tray 36: 101.5 – 104.3m:

Iron – Oxide Breccias

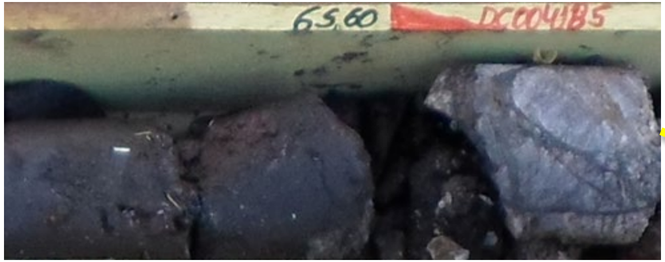
Within the Gracioso package, an interval of fine laminated material was unexpectedly encountered, with the flinty appearance of an ash horizon. Possibly this could represent a fluidised fine grained horizon within a phreatic breccia pipe, or more likely a bedded sediment or ash-fall horizon.

The host rocks of the southern part of the project area are generally finer (microgranites / subvolcanic intrusions); It may be that the southern part of the project area preserves a higher stratigraphic panel, with sub-volvanic /shallow intrusive to locally volcanic / diatreme facies preserved.

DDH_GR_001; Tray 29: 81.47 – 84.33m

Iron – Oxide Breccias

Iron oxides breccias project along the strike-extensions of the manganiferous structures. At times, the ferruginous breccia zones are also seen to envelop the Mn oxide veins (Left, DDH_VT_014: - 55.15 - 69m, and below).



Manganese oxides, overprinting and brecciating earlier quartz

Manganese oxides, overprinting and brecciating earlier quartz

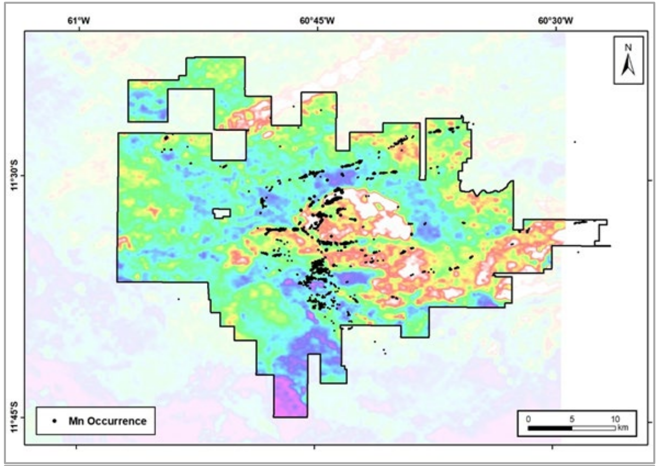
MANGANESE OXIDE VEIN / BRECCIA SYSTEMS

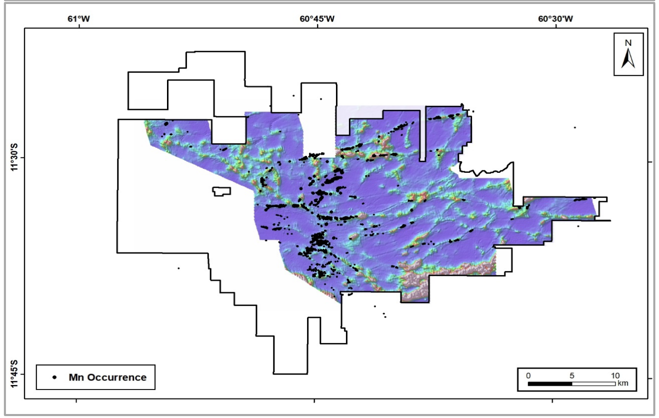
The distribution of Mn oxide occurrences has been outlined by mapping of colluvial boulder trails, coupled with pitting, auger drilling and trenching define areas for extraction (the district has produced over 200,000t of Mn oxide concentrates since 2007 for sale to the steel and fertilizer industries).

In some areas , the occurrences show a spatial association with the margins of radiometric highs, marking structural contacts of different granite phases.

The manganese oxide vein systems also follow conductivity trends (outlined in a 2015 HeliTEM survey). However, it is noted that not all manganese trends exhibit conductivity anomalies, and not all conductivity anomalies are manganiferous (some correlating with ferruginous zones that have yet to be tested for base metal / gold potential).

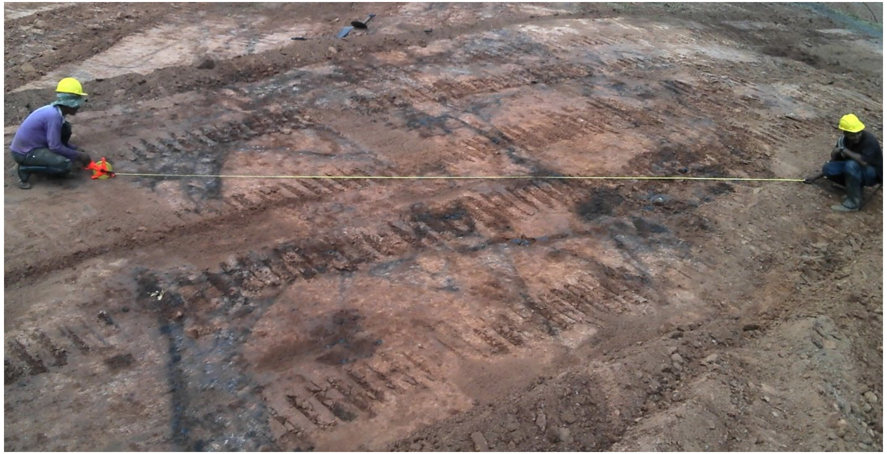
The oxide vein structures were emplaced in a brittle regime, with fragmentation / brecciation of the country rock. The manganese oxide vein fill varies from fine to coarsely crystalline (open-space filling), and massive to banded / laminated. Textures are indicative of high-level emplacement.

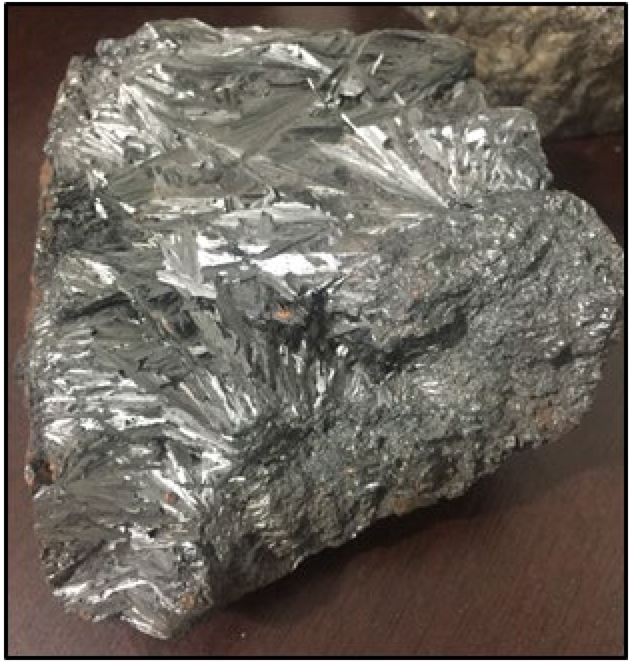




Top : Manganese oxide occurrences over Total Count Radiometric Image
Bottom: Manganese oxide occurrences over HeliTEM conductivity

MANGANESE VEINS





Clockwise from bottom left: Antônio Gomes prospect (vein and stockwork), Eduardo Mendes Prospect (stockwork) and of acicular manganese oxide crystal morphology. Fans are typically nucleated on vein walls, or internal breccia fragments.

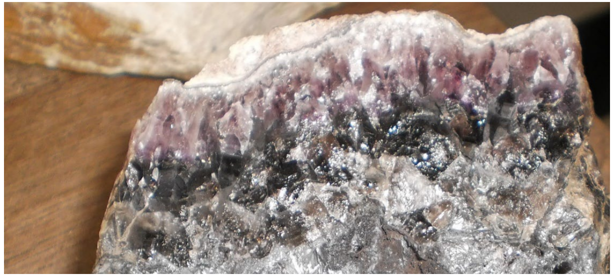
Quartz Veining

Although quartz veins also occupy the same structure as the oxide phases, there are indications of a chemical / temporal transition between the mineral phases.

In some areas, the manganese in seen be deposited interstitially in voids in the quartz – infilling laminated bands with dog-tooth morphology , or druzy cavities. Sometimes the quartz with this association is amethystine in character.

The oxide veins also overprint and brecciate earlier formed quartz (but quartz veins are not seen to overprint the oxide veins).

Relationships indicates a compositional switch in the fluids, and suggest also a transition to a more dilational higher-level setting (perhaps associated with an uplift or decompression event).



From Top down:
- Mn oxide infilling void in laminated quartz vein.
- Multi-stage breccia, with manganese oxide veining overprinting earlier generating of quartz veins and breccia.
- Mn oxide associated with amethyst quartz.

Link to Igneous Trigger ?

In addition to multi-phase mineral assemblages, the host structures are also at times occupied by mafic (to ultramafic?) dykes and felsic dykes. Alteration and weathering often overprint these units.

It may be that these dykes are simply exploiting lines of weakness, but it is noted that magma-mixing is one mechanism to force a metal saturation event.

Chloritized dyke (green-brown)

Manganese veins in argillic zone

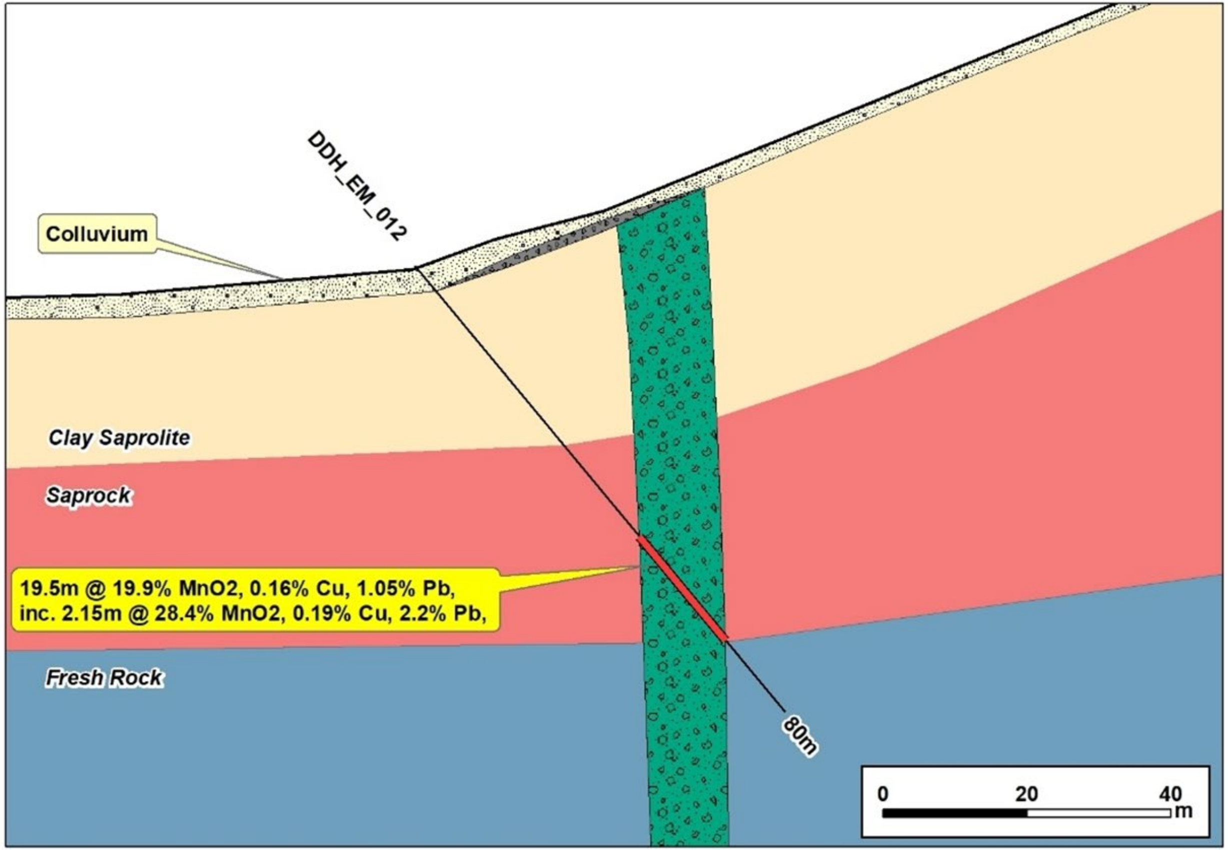
LINK TO IGNEOUS TRIGGER ?

In one diamond drill hole with better textural preservation, (DDH_EM_012 shown here from 44.85 - 69.71m), the assays (next page) and textural intergrowths suggest a possible link between the manganese and system of dykes.

Magma-mixing is one mechanism to force a metal saturation event.

Link to Igneous Trigger ?

Cross section from
DDH_EM_012



LINK TO IGNEOUS TRIGGER ?

Assay table from DDH_EM_012: 11.45 to 59.55m

HOLE_ID	MFROM	MTO	MnO_2 pct	Pb pct	Cu pct	MgO pct	CaO pct	Fe_2O_3 pct	BaO pct	P_2O_5 pct	TiO_2 pct	Sr ppm	Ni ppm	Cr ppm	SiO_2 pct	Al_2O_3 pct	K_2O pct	Na_2O pct	LOI pct
DDH_EM_012	11.45	12.5	1.2	0.00	0.01	0.31	0.0	3.3	0.1	0.05	0.27	22	4	4	70.2	15.3	5.2	0.2	3.9
DDH_EM_012	45.65	47.65	0.2	0.01	0.02	5.9	3.5	15.5	0.0	0.23	2.00	126	7	117			2.2	1.7	
DDH_EM_012	47.65	47.9	21.2	1.08	0.15	7.1	0.7	7.5	3.4	0.12	0.97	580	7	44	45.0	6.8	1.1	0.2	7.6
DDH_EM_012	47.9	48.4	0.6	0.04	0.11	8.49	1.7	18.7	0.1	0.18	2.00	70	13	52			2.5	0.4	
DDH_EM_012	48.4	49.4	34.2	1.93	0.24	4.81	14.0	5.1	3.5	0.05	0.66	1067	6	11	15.4	4.3	1.6	0.1	18.0
DDH_EM_012	49.4	50.4	25.3	1.25	0.18	4.8	16.2	6.8	2.6	0.05	0.85	732	7	11	19.7	5.7	2.2	0.1	17.9
DDH_EM_012	50.4	51.4	17.2	1.11	0.16	6.1	8.3	11.9	1.9	0.14	1.42	620	13	19	28.0	10.0	3.6	0.1	12.3
DDH_EM_012	51.4	52.4	43.8	1.96	0.20	2.62	11.4	5.3	3.9	0.06	0.68	1232	7	15	13.5	4.8	2.1	0.6	16.0
DDH_EM_012	52.4	53.4	36.9	1.30	0.20	5.38	20.9	1.6	2.6	0.01	0.24	908	1.5	9	7.0	1.9	1.0	0.1	24.5
DDH_EM_012	53.4	54.4	32.8	2.34	0.19	3.45	18.7	3.0	4.1	0.04	0.39	1048	4	10	15.4	3.4	1.1	0.2	19.9
DDH_EM_012	54.4	55.55	24.5	2.08	0.18	6.47	9.4	8.2	3.2	0.10	1.04	961	8	20	26.9	7.0	2.2	0.1	13.4
DDH_EM_012	55.55	56	10.4	1.05	0.15	7.93	2.0	14.8	1.4	0.19	1.94	388	11	13	39.6	11.6	2.8	1.1	7.1
DDH_EM_012	56	57	7.0	0.37	0.10	7.29	2.1	14.9	0.6	0.20	2.01	190	11	28	44.1	13.1	1.4	2.0	6.8
DDH_EM_012	57	57.2	24.8	1.70	0.19	8.33	1.6	8.2	2.9	0.11	1.05	854	11	33	34.0	8.4	2.1	0.5	8.8
DDH_EM_012	57.2	58	3.2	0.32	0.13	8.78	1.1	16.6	0.3	0.22	2.18	116	13	17	44.3	13.5	2.8	1.5	5.6
DDH_EM_012	58	59	5.5	0.50	0.13	9.44	1.2	13.5	0.6	0.21	1.95	161	10	33	45.4	13.1	3.0	1.2	6.2
DDH_EM_012	59	59.55	24.2	0.30	0.12	6.32	4.0	9.1	1.2	0.15	1.32	190	7	77	35.9	9.3	1.4	1.0	9.4

Link to Igneous Trigger ?

Assay table from DDH_EM_012: 59.55 to 71.25 m

HOLE_ID	MFROM	MTO	MnO_2 pct	Pb pct	Cu pct	MgO pct	CaO pct	Fe_2O_3 pct	BaO pct	P_2O_5 pct	TiO_2 pct	Sr ppm	Ni ppm	Cr ppm	SiO_2 pct	Al_2O_3 pct	K_2O pct	Na_2O pct	LOI pct
DDH_EM_012	59.55	60.6	1.6	0.19	0.11	9.47	2.4	14.6	0.2	0.23	2.16	115	11	33	47.0	14.2	2.4	1.5	6.2
DDH_EM_012	60.6	61.6	1.6	0.15	0.09	8.39	2.5	14.4	0.1	0.26	2.19	121	9	32	47.3	14.4	2.1	1.5	5.9
DDH_EM_012	61.6	61.8	57.8	1.40	0.18	3.91	1.9	3.8	5.3	0.07	0.60	923	8	25	17.4	4.4	1.4	0.1	10.4
DDH_EM_012	61.8	62.1	5.7	0.59	0.13	9.66	1.3	14.1	0.7	0.27	2.08	187	9	35	42.4	14.2	3.6	0.9	6.4
DDH_EM_012	62.1	62.3	13.9	1.24	0.17	9.06	1.4	12.5	1.2	0.20	1.84	460	9	43	36.4	12.5	4.0	0.7	7.4
DDH_EM_012	62.3	62.5	2.8	0.18	0.14	9.63	1.1	16.0	0.3	0.25	2.05	106	9	60			4.1	0.9	
DDH_EM_012	62.5	62.75	44.3	1.20	0.18	5.42	2.6	6.2	2.8	0.10	0.91	716	8	36	22.8	6.4	2.2	0.1	10.2
DDH_EM_012	62.75	63.4	4.0	0.38	0.12	9.45	3.0	14.6	0.5	0.24	2.15	209	8	71	41.8	14.1	2.5	1.0	7.6
DDH_EM_012	63.4	63.75	16.3	1.28	0.21	10.9	3.0	9.7	2.0	0.17	1.44	684	7	66	36.7	9.5	1.8	0.2	9.5
DDH_EM_012	63.75	64.2	2.4	0.22	0.10	8.83	2.6	14.4	0.3	0.24	2.16	157	10	78	44.3	14.2	2.2	1.1	6.8
DDH_EM_012	64.2	64.45	12.4	0.73	0.17	9.76	3.2	11.8	0.8	0.17	1.71	302	8	67	37.6	11.0	2.7	0.5	8.5
DDH_EM_012	64.45	65	0.4	0.05	0.11	9.33	5.1	14.6	0.0	0.22	2.02	65	8	88	42.5	13.3	2.0	1.4	8.3
DDH_EM_012	65	66	27.4	2.14	0.22	6.99	10.4	4.6	3.5	0.09	0.64	987	5	40	24.0	5.5	0.8	0.1	15.0
DDH_EM_012	66	66.6	72.3	1.59	0.27	1.97	1.7	0.8	3.0	0.02	0.15	840	5	14	10.1	2.7	0.7	0.1	11.3
DDH_EM_012	66.6	66.95	3.5	0.27	0.05	2.19	1.8	2.5	0.5	0.08	0.25	172	1.5	4	69.6	10.3	4.0	1.9	3.1
DDH_EM_012	66.95	67.15	47.2	0.96	0.41	4.26	0.5	1.2	2.1	0.04	0.15	607	3	9	32.3	4.7	2.1	0.3	8.0
DDH_EM_012	67.15	67.45	5.1	0.35	0.06	2.15	2.2	2.5	0.7	0.04	0.23	205	1.5	7	68.7	9.5	4.1	1.6	3.8
DDH_EM_012	67.45	69.45	0.1	0.01	0.00	0.83	0.5	3.6	0.1	0.07	0.28	84	1.5	1.5			6.3	3.4	
DDH_EM_012	71.15	71.25	40.4	0.04	0.08	0.77	0.6	1.6	2.1	0.02	0.14	301	1.5	6	40.7	7.0	3.1	1.4	6.0

Wall Rock Alteration

MERIDIAN

Wall-rock alteration is variable. Some of the narrower vein systems have a minimal alteration selvedge. In some areas, wall rock show silicification (likely related to the early generation of quartz veining). In other areas, and veins are associated with an argillic alteration envelope (both overprinting the host rock and extending more distally as stockwork veinlets).

The drilling undertaken, where penetrating fresh rock, often only extends a short distance past the host structure (typically 15-20m). Some petrographic work is required to confirm igneous vs. hydrothermal phases.

GOLD +/- COPPER BEARING QUARTZ-PYRITE VEINS

Continuing on the diversity of mineralization styles, two main areas with gold in steam / gold in soil anomalies have been defined in geochemical programs to date.

One on these, the Coice de Cobra target, has been tested with a provisional drilling and trenching program.

One bedrock source was found to be associated with a structure in the brittle-ductile transition. Mafic dykes were exploited as ductile chloritic shear zones in the granite host, and gold-bearing quartz-pyrite (+/- chalcopyrite) veins developed during deformation.

A variety of rock types has been observed in the region, and follow-up work is required to confirm sources to various gold-anomalous catchments, and gold in soil anomalies.

The main surface geochemical anomalies are developed at either end of a sigmoidal feature seen in the magnetics, which is reminiscent of the "Carjas Sigmoid".

The vein set is not manganiferous, although the host structures display a similar orientation (E-NE) to the Mn oxide veins.

DDH_CC_003: 4.35m @ 3.2g/t Au from 20.65m

TR_CC_011: 3.8m@3.88g/t Au

Coice de Cobra Project Lithologies

Porphyritic granite

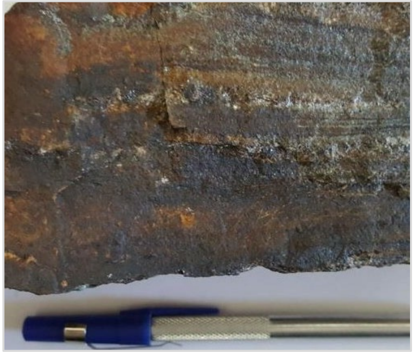
Magnetite-rich granite

Sericite alteration

Symplectitic texture inferruginous matix + prismatic qtz, (open-space fill)

Rhyolite Dkye

Mafic Dyke



Banded dyke with magnetc, mafic minerals

Coarse granite; hematized

Gold Anomalies, Geophysical Setting

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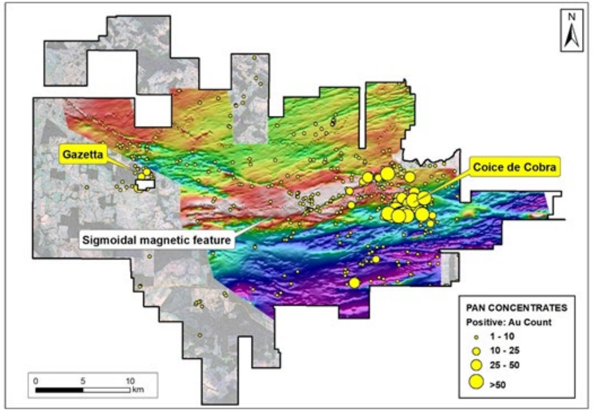

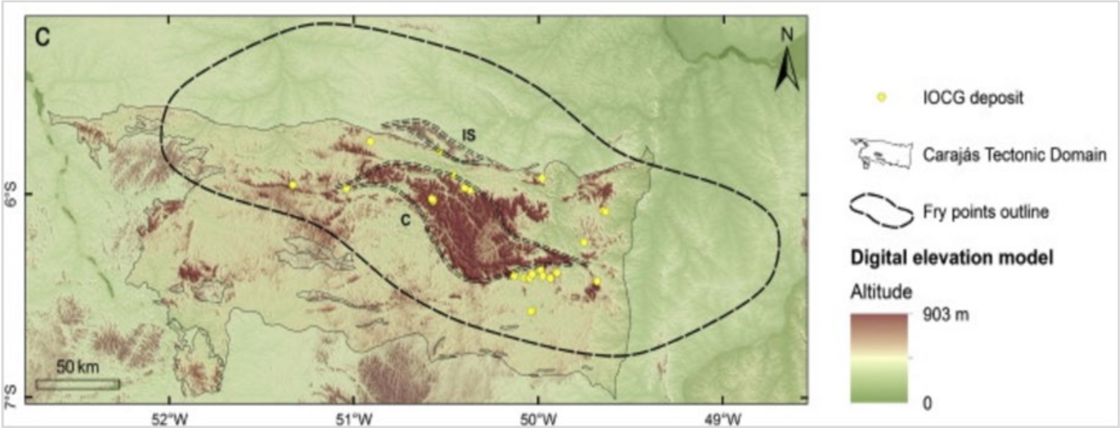

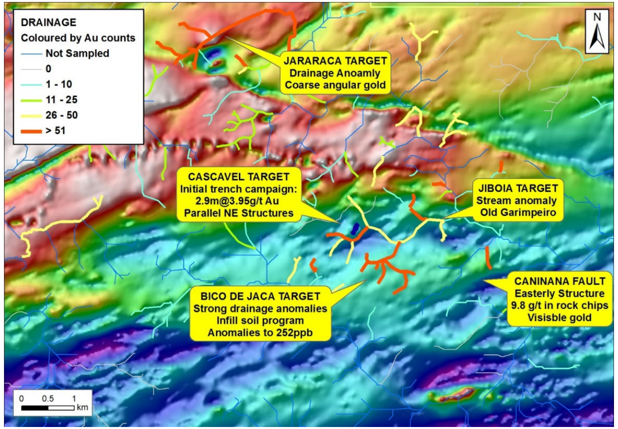

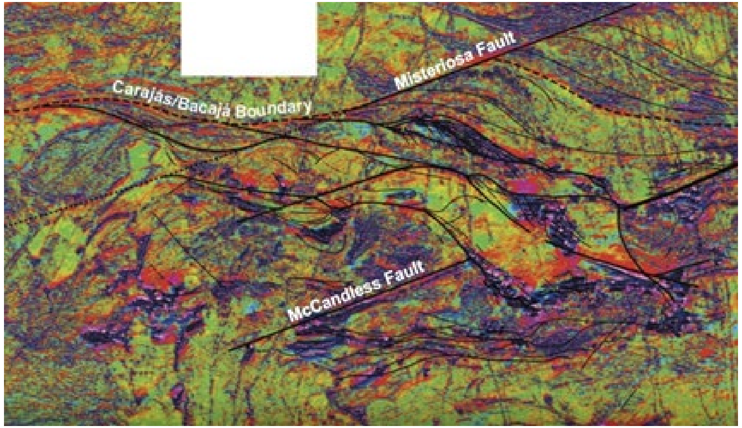

Top Left: Overview of pan-concentrate sampling, superimposed on histogram-equalized HeliTEM magnetics, showing similar sigmoidal pattern.

Top right: Mineral deposits of the Carajas Region, associated with the distinctive sigmoidal structure, expressed here in elevation data.

Lower Left: Detail of the Coice de Cobra target area.

Bottom right: Carajas Sigmoid; magnetics.

Bucky Quartz Veins

The earliest phase interpreted to be occupying the structural vein array in the project area is a generation of milky quartz veins. These are generally massive and appear to represent a precursor, mesothermal vein set.

The Company is commencing a soil XRF program to determine whether there is any mineralization signature associated with this event.

Context of Manganese in Hydrothermal Settings

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Manganese is mobile, travelling to the upper levels of hydrothermal systems (and forming part of exhalative systems along with Fe, Ba, Si, P).

It is a common component of intrusive-related / porphyry / epithermal systems, but zonation patterns are not well documented compared to other metals used in vectoring. In porphyry and intrusive-related systems, it can be present as an accessory mineral or form discrete zones:

Examples of manganese in ore systems include:

- Porphyry / intrusive-related and stockwork deposits of the Alta Floresta and Tapajós Provinces to the east often have manganese as an accessory component, locally forming more concentrated vein zones.
- Manganese lodes are documented from porphyry systems at Butte, Montana (USA), the Karakartal porphyry Au-Cu system in Turkey, and the Cerro Atajo district of Agentina.
- In epithermal systems, manganese is recorded in high levels such as the Wau / Edie Creek deposits of PNG.
- Intra-continental intrusive-related polymetallic systems of Chillagoe include manganiferous zones.
- Manganese breccias have been recorded in the Faina Belt, Brazil, and linked to IOCG systems.

Manganese can be precipitated in oxide or carbonate form, depending on pH and redox conditions of the hydrothermal system, and the activity of sulfate and bicarbonate in the fluids.

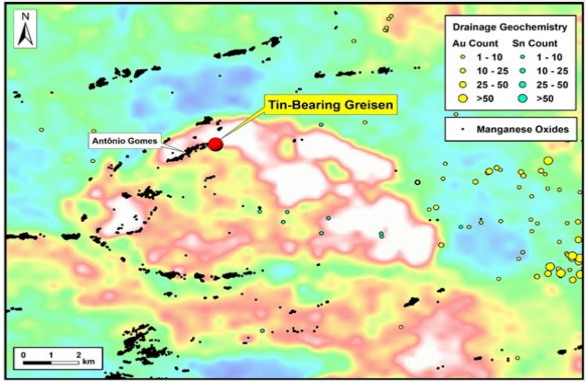
Fe-Mn breccia; Faina Belt, Brazil, Schievano de Campos et al (2017)

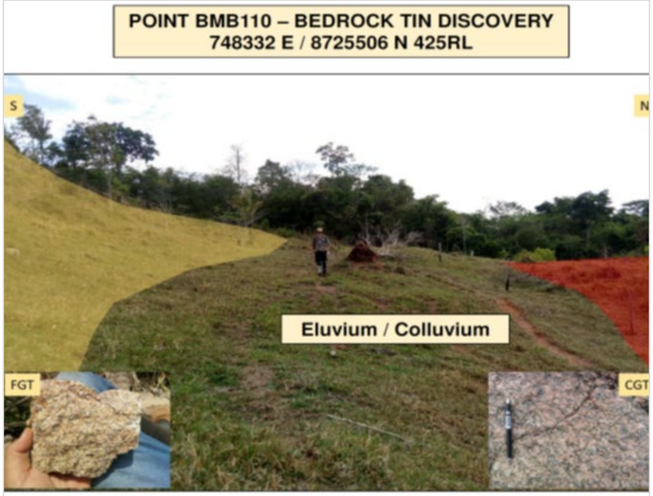
Mn stockwork in argillic envelop; Cerro Atajo district of Agentina Enns & Findlay, 2005

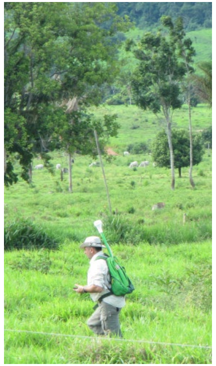
Mn vein associated with gold deposits of the Tapajós province

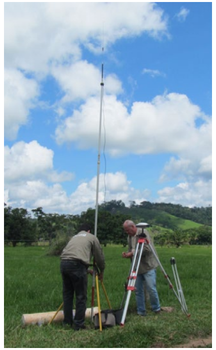
GREISEN DISCOVERY

A number of heavy mineral concentrates in the northern and eastern part of the project area returned cassiterite. The primary source of this mineralization had been elusive, but last year a greisen was located to the east of the Antônio Gomes manganese prospect.







GEOPHYSICS

- Inverse Polarisation.
- Gravity
- Airborne Electromagnetics

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Geophysical Surveys

Project area lies within the CPRM "Rio Machado" survey area – 400m line spaced magnetic-radiometric data, flown in 2009.

In 2015, the CGG / LASA Prospecções S.A. flew a HELITEM survey, covering 61% of the Project area at 100m line spacings.

Select prospect-scale ground orientation surveys have been undertaken using a range of techniques. The company has purchased IP equipment to have the capacity to run in-house surveys.

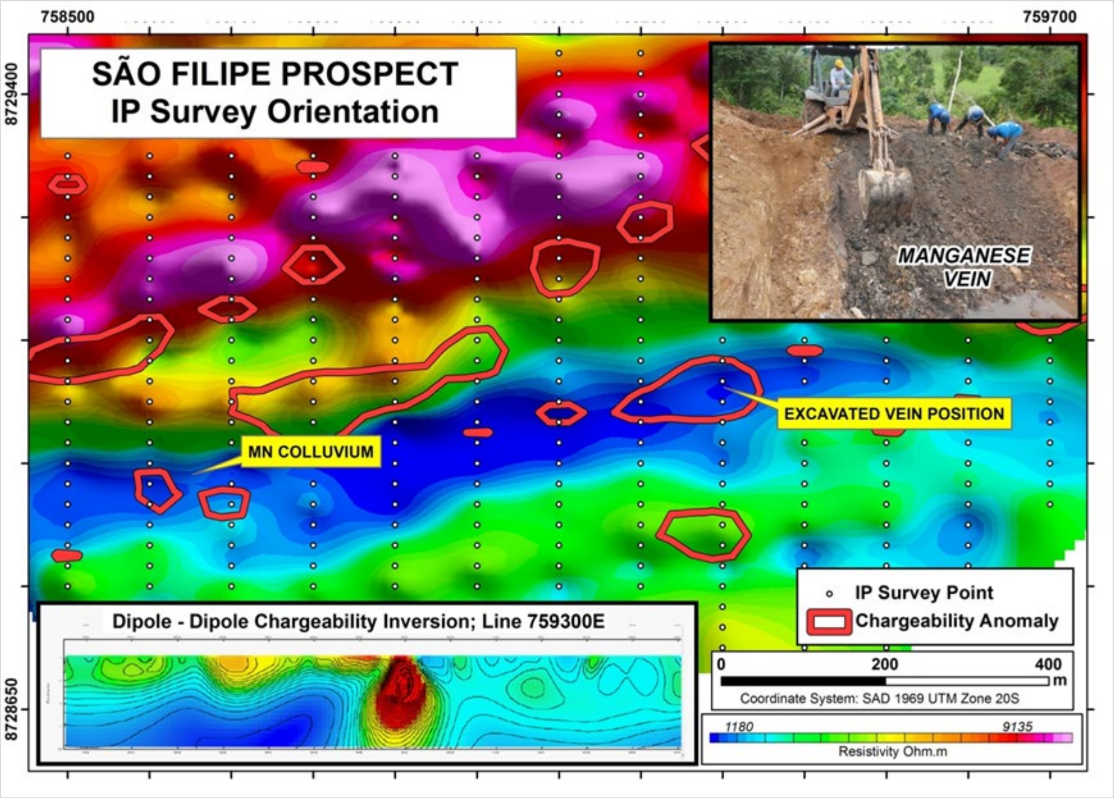
Data has been processed by WA-based consultancy, CoreGPX.

Recent focus has inversion of the magnetic data, to test for the possible signature of underpinning intrusive systems. The review highlights a series of bodies which align with the vein arrays and conductivity anomalies.

GROUND ORIENTATION SURVEYS

Example of IP Survey

- Vein corridors expressed as resistivity lows (conductive zones).
- Chargeability highs developed within corridor and in flanking positions.

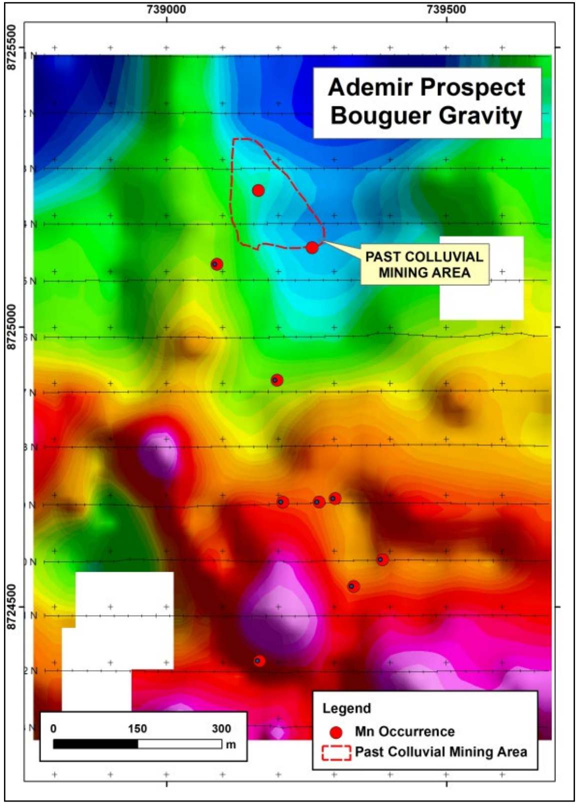


IP orientation survey, Sao Filipe.

Ground Orientation Surveys

Example of Gravity orientation survey

- Variable Bouger response associated with manganese vein propect



Gravity orientation survey, Ademir Curral

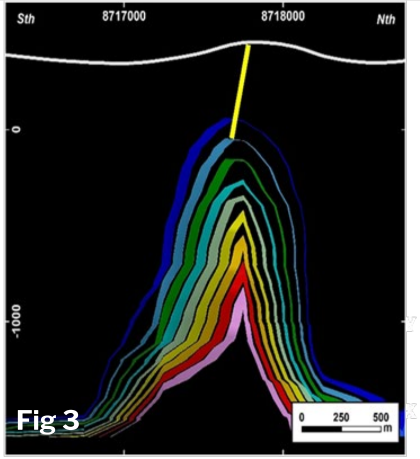
Magnetic Inversion

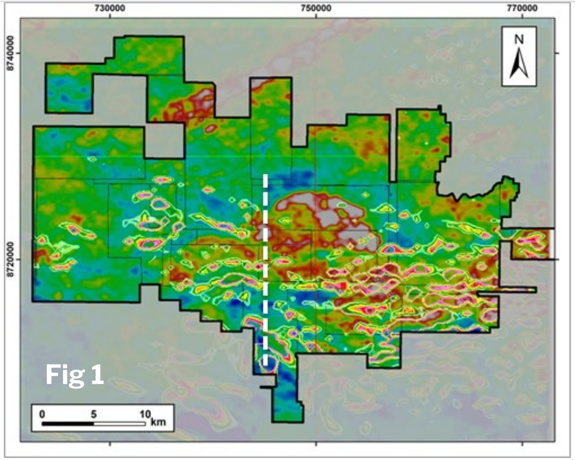
Many anomalies are co-incident with the subsurface projection of conductors modelled from electromagnetic survey data. Results point to a much more intricate architecture to the intrusive system than first thought Figure 1.

Magnetic anomalies are found along the same regional structural corridors hosting polymetallic vein systems Figure 2.

Electromagnetic (EM) plates are positioned above the magnetic anomalies and below the surface mineralisation Figure 3.

The anomalies underly or are in proximity to hydrothermal altered rocks, including haematite breccias, quartz stockworks, and areas of silicification.





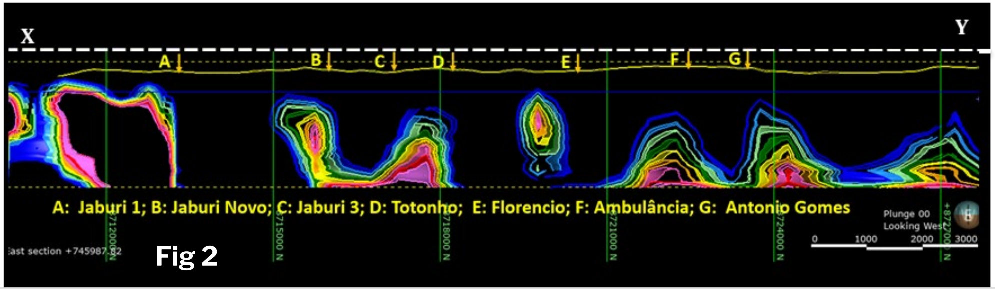


Fig 1 Note: Regional map of magnetic anomalies superimposed on total count radiometrics. The progressively "warmer" colours represent shells of increasing magnetic intensity.

Fig 2 Note: North-south cross section of the Project showing the magnetic anomalies and the location of the known occurrences of Mn ± Cu-Pb-Zn vein mineralisation. No vertical exaggeration has been used on the magnetic data.

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