

# Freehill Mining Limited (ASX: FHS)

*The global role of Yerbas Buenas magnetite*

Investor Stream Webinar Update - April 2020

Peter Hinner – Chief Executive Officer



# Important Information and Disclaimer



The information contained in this Presentation is of a general nature and does not purport to include or summarise all information that an investor should consider when making an investment decision. The Presentation does not contain all the information which would be required in a product disclosure statement, prospectus or other disclosure document prepared in accordance with the requirements of the *Corporations Act 2001* (Cth) (Corporations Act).

This Presentation does not constitute investment or financial product advice, is not a recommendation to acquire New Shares and does not and will not form the basis of any contract or commitment for the acquisition of New Shares.

Before making an investment decision, prospective investors should consider the appropriateness of the information (including but not limited to the assumptions, uncertainties and contingencies which may affect future operations of the Company and the values and the impact that different future outcomes may have on the Company) having regard to their own investment objectives, financial situation and needs and should seek legal, accounting and taxation advice appropriate to their jurisdiction.

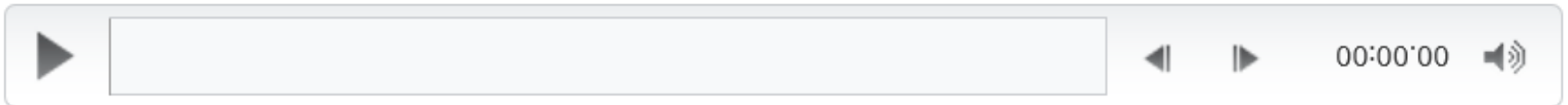
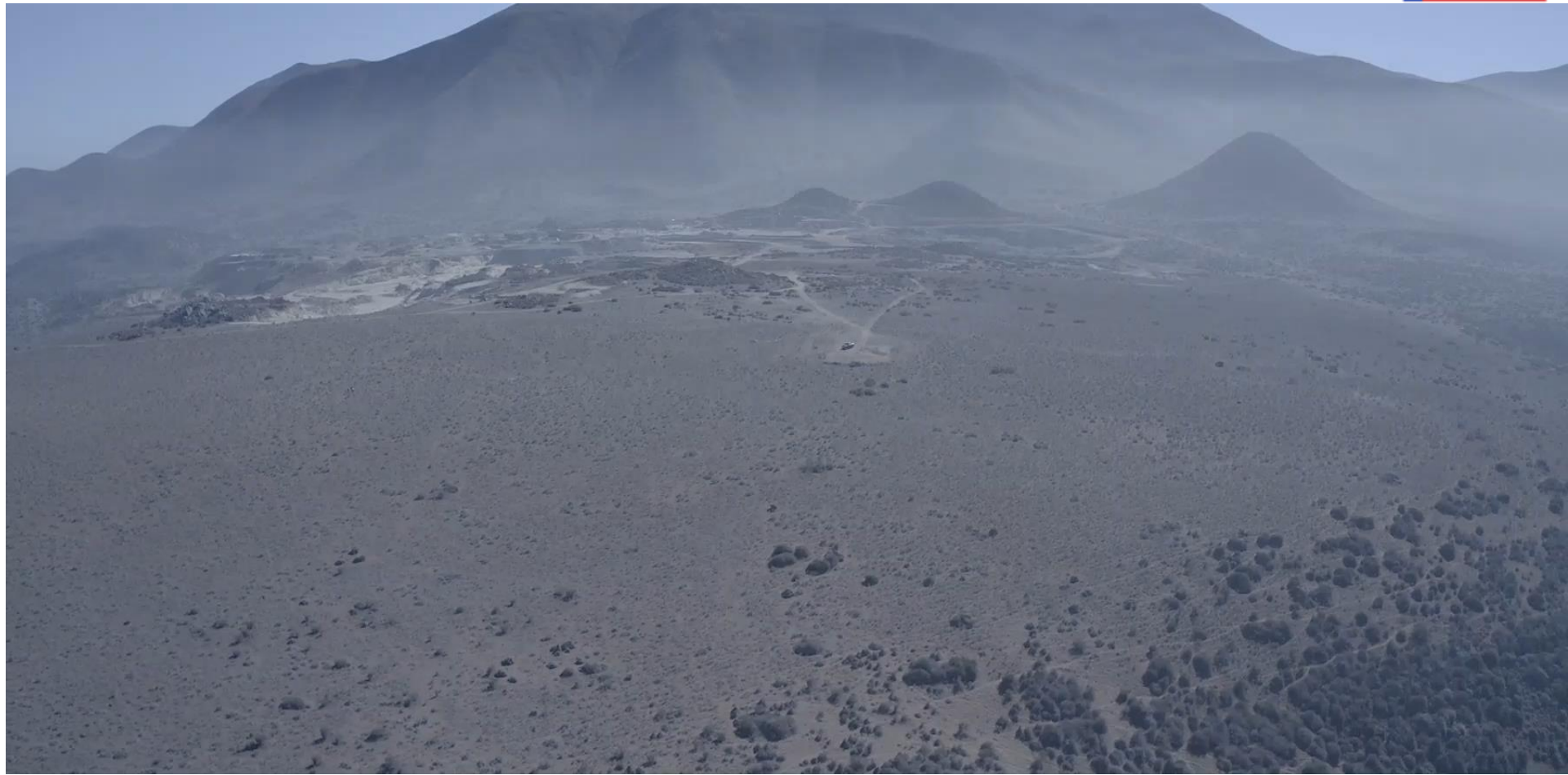
## **Future performance and forward-looking statements**

This Presentation contains certain forward-looking statements and comments about future events, including the Company's expectations about the performance of its businesses, the effect of the funds raised under the Offer on those businesses, and the future performance of the Company. Forward looking statements can generally be identified by the use of forward looking words such as, "expect", "anticipate", "likely", "intend", "should", "could", "may", "predict", "plan", "propose", "will", "believe", "forecast", "estimate", "target" and other similar expressions.

Indications of, and guidance or outlooks on, future earnings, financial position or performance are also forward-looking statements and include statements in this Presentation regarding the conduct and outcome of the Offer, the use of proceeds, the future performance of the Company and the Company's outstanding debt. In making the forward-looking information or statements contained in this Presentation, assumptions have been made regarding, among other things:

## **Competent Persons Statement**

The information contained in the report that relates to Mineral Resources, Exploration Targets and Exploration Results is based on information compiled or reviewed by Peter Hinner, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Hinner is a consultant of the company and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Hinner consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



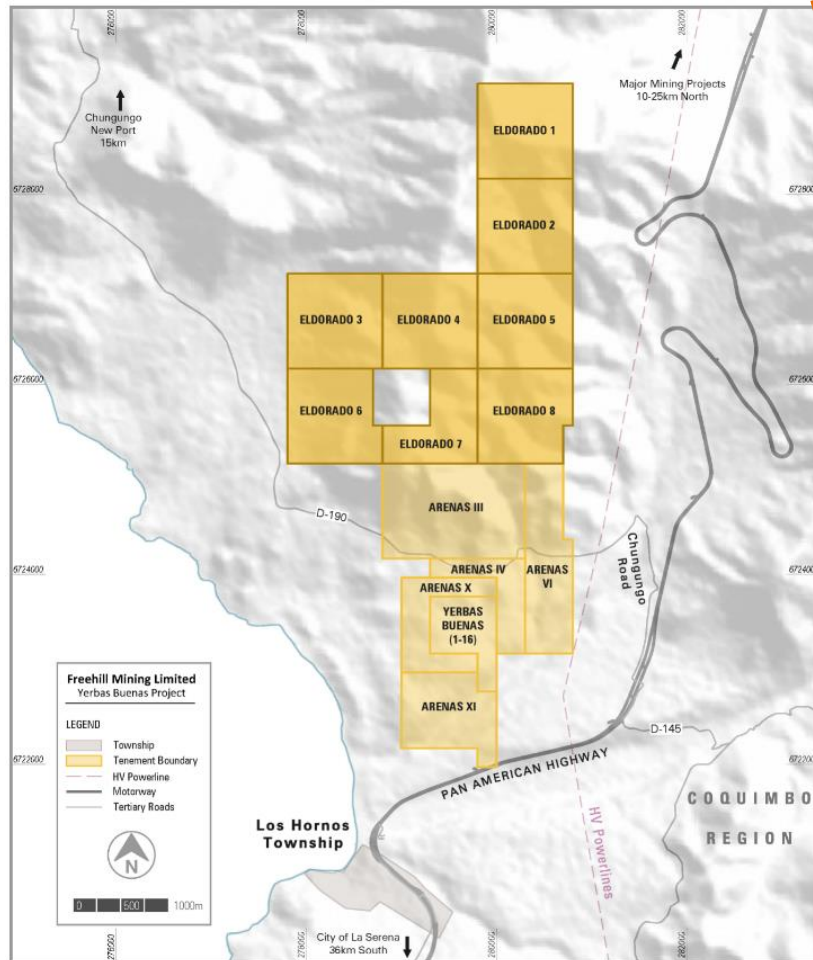
*Drone video looking north. The 2019/20 drilling area shown in foreground just prior to drill lines being cut, trial mine and processing plant in mid picture left of centre, three conical intrusives and in background is the start of the mountain range that has El Tofo, Tofo Norte and Dominga projects. El Dorado tenements begin half way up visible side of mountain*

# Project Highlights

- ✓ Low capital cost
- ✓ Low operating cost
- ✓ Quick path to production
- ✓ Scaleable production
- ✓ Excellent location
- ✓ Excellent infrastructure
- ✓ Local & unique buyer
- ✓ Already trial mined and produced
- ✓ High quality magnetite of 62% or +68% Fe
- ✓ Existing local offtake agreement
- ✓ Significant Copper potential
- ✓ Maiden JORC resource completed



# Extensive concession area



Concession Area	Status	Area (Hectares)
Yerbos Buenas	100% Ownership through Yerbos Buenas SpA & San Patricio SpA	394
Arenas XI	100% Ownership through San Patricio SpA	80
Eldorado	Under negotiation for 100% ownership through San Patricio	750
<b>TOTAL</b>		<b>1224</b>

# Project location



Project located close to all major infrastructure:

- 50 mins flying time from Santiago with up to 9 commercial flights per day
- City of 400,000 people with all modern commercial services
- Pan American highway within 2km of project site
- 2 major operating ports and a third planned within 18kms of project



*After grade, location & infrastructure are king*

*Some great resources in the world but they're 'stranded assets'*

*Proximity to a market or buyer*

*Ports, roads, power, water, labour and mining friendly jurisdiction*



# Highlights since listing



- ✓ Operating trial mining & processing plant
- ✓ Sale of magnetite concentrates to CMP/CAP for +2 years
- ✓ Phase 1 drilling, trial mine pit area – RC 23 holes – 4300m
- ✓ Maiden JORC Mineral Resource Estimate for magnetite
- ✓ Acquisition of 80 Hec block containing extension to magnetite structure
- ✓ Phase 2 drilling, YB06 structure – Diamond drilling 18 holes – 4800m
- ✓ HOA to acquire 750 Hec of iron-copper-gold prospective ground

*Freehill has delivered on all its planned tasks since finishing the trial mining operation*

*CMP, Compañía Minera Del Pacífico is the iron ore mining division of CAP*



# What's the difference between hematite and magnetite?

*There are several forms of iron ore, including magnetite, hematite, goethite, limonite and siderite however the last three are generally of low economic use.*



Fortescue Hematite mine W.A

- Predominantly Hematite  $\text{Fe}_2\text{O}_3$
- Typically red looking ores
- Usually DSO – direct shipping ore because in-ground concentration can be high – 40-67% Fe



Savage River magnetite mine Tasmania

- Predominantly Magnetite  $\text{Fe}_3\text{O}_4$
- Typically black looking ores
- Generally lower in-ground concentrations – 10-40% Fe
- Pure magnetite contains up to 70-72% Fe



# Global Magnetite & Hematite Producers

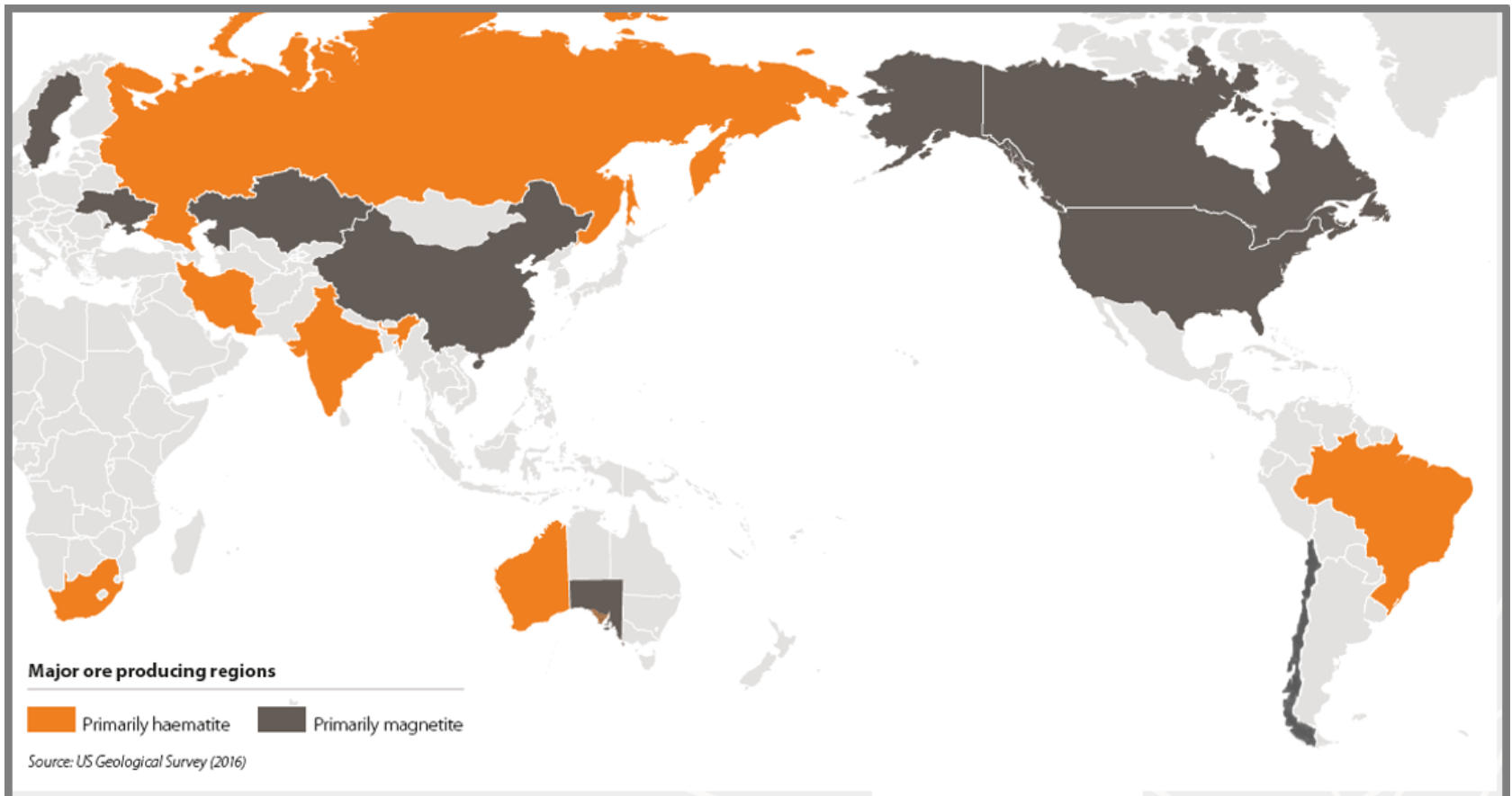


Why magnetite ?

Is it a good commodity to be in?

What are the alternatives?

Who are the big producers?



# Global Magnetite Drivers



- China accounts for 81% of Australian iron ore exports
- Chinese blast furnace capacity being consolidated, smaller uneconomic ones shut
- Mills demanding higher grade and quality iron ore feedstocks
- structural changes taking place in the Chinese steel industry leading to increased demand for higher-quality iron ore. Creates opportunities for companies looking to export pellet feed.

Three distinctly different markets for iron ores:

- below 58% Fe;
- around 62% Fe; and high-grade
- low impurity ore (>65% Fe)

Concentrates with a grain size <75  $\mu\text{m}$  are used as pellet feed.

Concentrates ranging from 150  $\mu\text{m}$  to 6.3 mm are considered suitable for processing to an agglomerate (sinter)

Intermediate grain sizes have various uses, often being blended with other feedstock

The premium paid for high-grade concentrates (>65% Fe) has steadily increased over the last decade

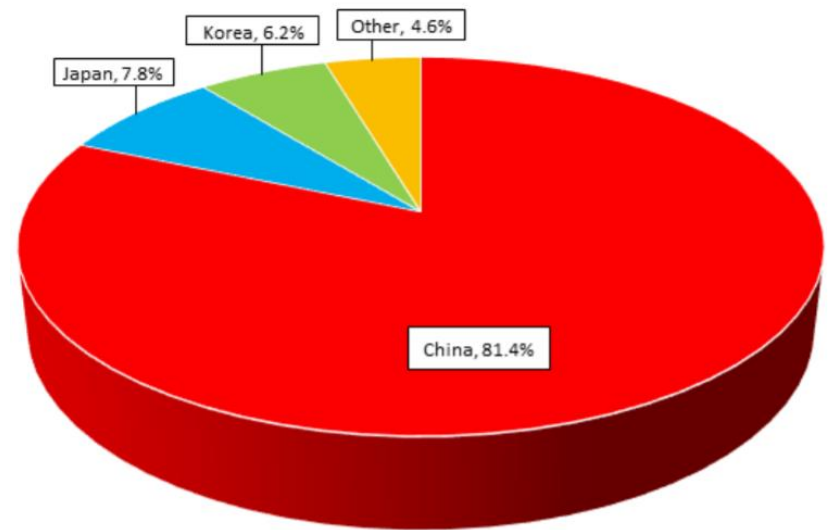
# Global Magnetite Drivers

Global iron ore production in 2015 was ~2 Bt of which 28% or 560Mt was magnetite. *source CRU*

Australia produced ~27 Mt of magnetite concentrate production in 2017

China, the largest global producer, consumer and importer of iron ore, is in the process of restructuring its steelmaking industry to reduce pollution, cut excess steelmaking capacity and improve efficiency and safety. Operational efficiency in steelmaking requires the use of higher-quality feedstock. Quality highergrade, lower-impurity feedstock produces more steel for each tonne used, with the added benefit of reducing steelmaking costs and emissions.

China's government-led initiative of reducing emissions from low-tech steelmaking practices has led to the escalation of price differentials for quality between high- and low-grade iron ore products. This is resulting in what could be a structural shift in the price gap between high and low-grade iron ore products. China's shift towards higher-quality feedstock presents an opportunity for suppliers of magnetite products to China's steelmaking sector



# Price premiums

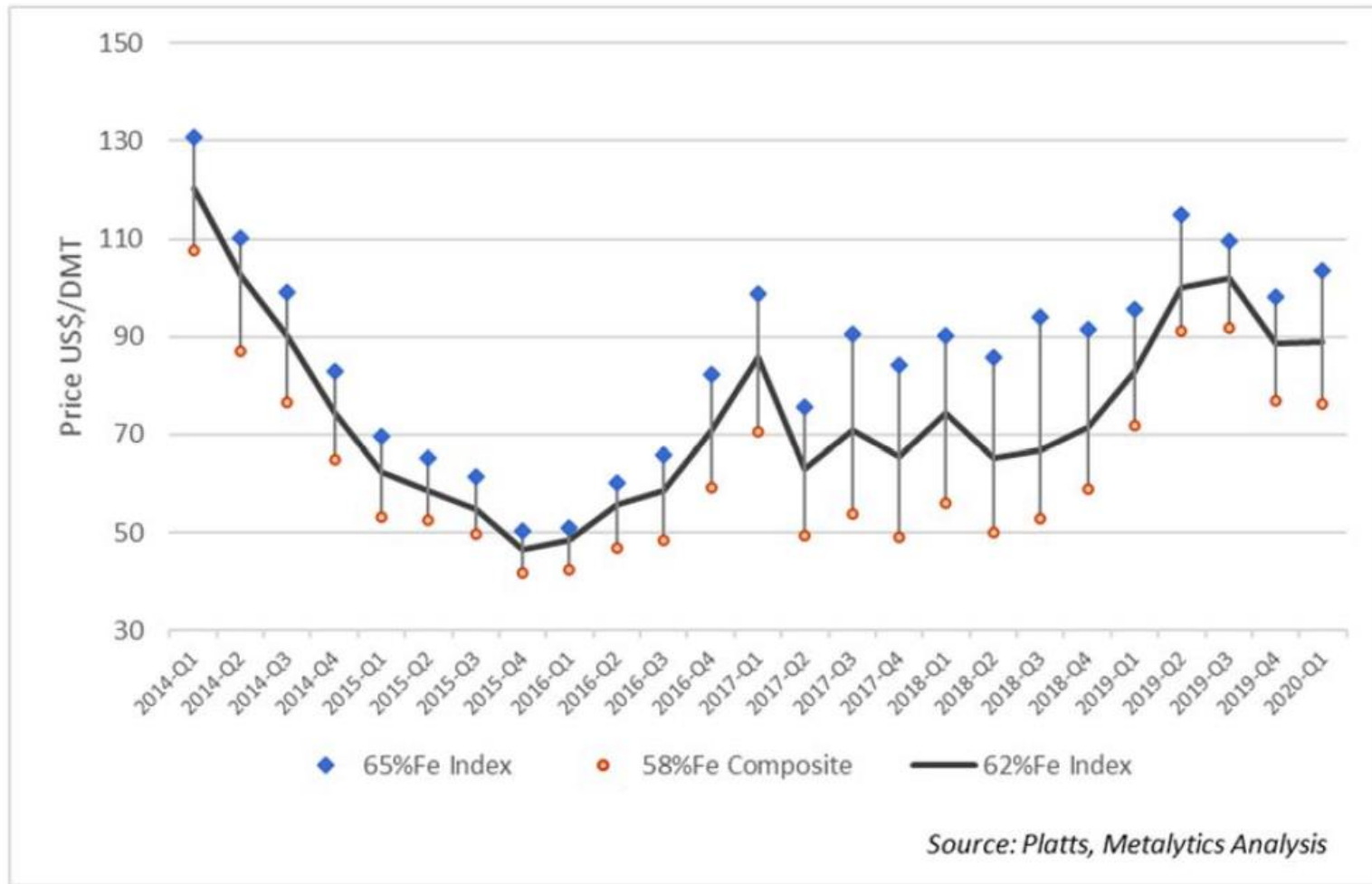


Chart shows illustrates how the selling price of Iron ores varies significantly by differing grades. Higher grade concentrates attract a disproportionately greater premium



# Types of magnetite sold

Magnetites sold primarily by their grade and grain size according to end use.

- Lump
- Concentrate fines -6.3mm to 0.150mm
- Sinter feed or sinter
- Pellet feed
- Pellets

65% Fe is considered a premium product  
Pellet feeds are generally +67% Fe



# Magnetite in Chile



- Chile is one of the fastest-growing economies in Latin America over the past 20 years
- Much of the international attraction to Chile's mining industry is attributed to its extensive mineral endowment that is home to large deposits, as well as the nation's investor-friendly regulations
- Dominated by CAP/CMP, Chile's largest iron ore miner and producer
- CAP have multiple magnetite mines, pellet plants, pellet feed plant, steel plants & ports
- More than a dozen magnetite operations within 400km of Yerbos Buenas
- Chile produces about 9Mt per year of Iron ore, most of which is magnetite.
- Could increase to +33Mt by 2026 because Dominga will produce 12Mt and CAP plan to ramp up to 18Mt
- Majority of CAP production of pellets and pellet feed go to China, Korea and Japan mirroring Australian exports.

# Development Concept



“Our development strategy will be to keep the processing to a minimum to reduce upfront capital costs and minimise operating costs”

- Drill, blast, crush and magnetically separate – all done dry
- Crushing size anticipated to be nominally 4-6mm to achieve 62% Fe
- Need to await results of metallurgical testing from YB06 structure to confirm recoveries
- Product will be a concentrate suitable for a pellet feed plant or sinter plant
- Wet processing could be added to the back end at a later date to increase concentrate grades but this is a significant upgrade and shift in approach

Metallurgical testing of the drill core will confirm over the next several months whether we can achieve target concentrate Fe grades through a dry process whilst crush coarsely or whether a finer wet process will be required.

Initial testing of small samples suggests that our magnetite has the potential if sized reduced to pellet feed to have very low in impurities as this Davis Tube Recovery test shows.

%Fe DTR	%Al <sub>2</sub> O <sub>3</sub>	%SiO <sub>2</sub>	P	S
69.63	1.30	0.47	0.020	0.006

# A Simple process to Produce 62% Fe Concentrate



- Drill & blast ore in open pit
- Load into trucks and cart 500m to a crushing plant
- Crush to nominally - 6mm
- Screen
- Separate magnetite iron ore using dry magnets
- Sell a 62% Fe concentrate



In the past Freehills magnetite concentrate has been converted to 69% Fe Pellet feed by our customer CMP/CAP at their Romeral Pellet Feed plant



# Product Sales



## The options:

- Deliver pellet feed at 58-62% to the Romeral plant 30 km south by highway
- Export pellet feed or sinter feed via the public port at Coquimbo 52km south by highway
- Export pellet feed or sinter feed under agreement via the CAP dedicated iron ore port, Guayacan, 53km south by highway
- Export pellet feed or sinter feed via the planned new CAP port of Cruz Grande 18km north under a third party access agreement



# Next steps for Freehills magnetite project

- Commence Block modelling using recent drilling data underway
- Issue JORC Mineral Resource Estimate during May
- Commence metallurgical testing of drill core to develop a processing flowsheet
- Use processing flowsheet to start plant design to enable capital and operating cost model
- Develop conceptual mine plan
- Commence DIA ( environmental approvals study to apply for mining licence
- Commence Pre-feasibility study

“The YB06 structure drilled in 2019/20 must be characterised through a number of months of metallurgical testing to establish optimum crushing size, iron recovery and various other design parameters. These will allow project costs to be determined as well what product to produce.”

# A 1mtpa magnetite plant



This image shows a budget 400 tph plant that would have a nominal 1Mtpa concentrate output. Consists of 2 parallel circuits that could be built in 2 phases if necessary. The detail of the magnetic separation plant is not shown

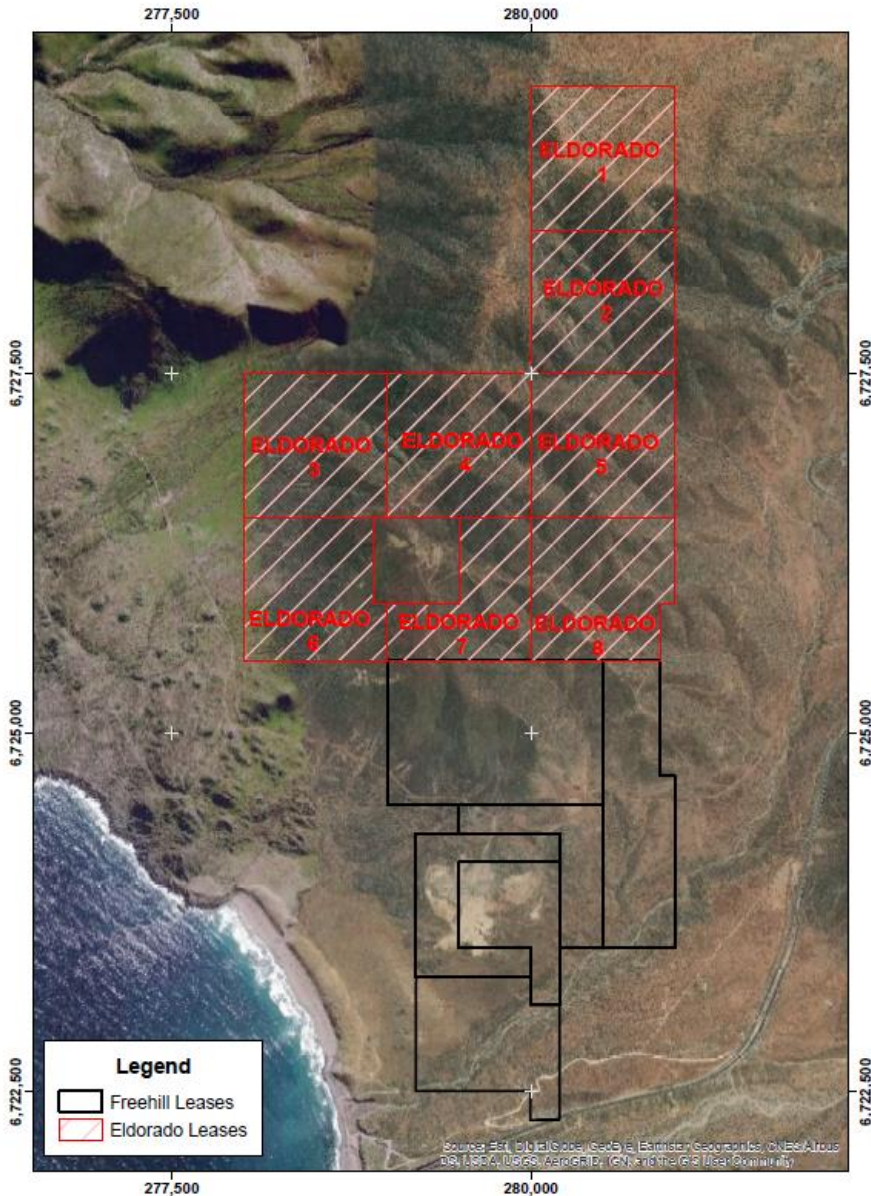




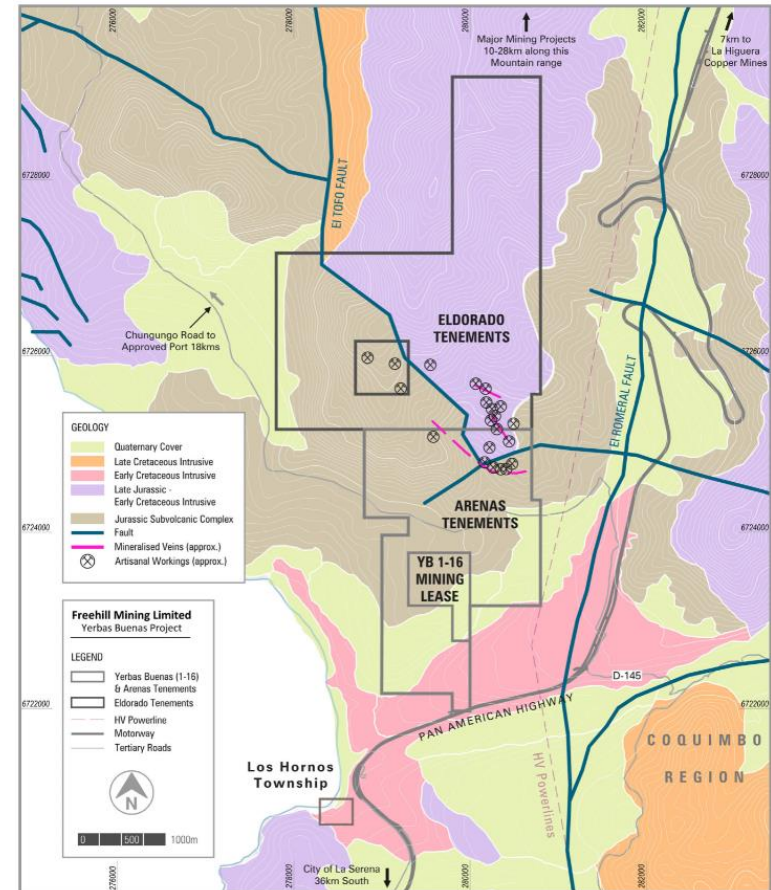
Magnetite project  
270kms north of  
Yerbas Buenas that  
produces a sinter  
feed for direct  
export



# HOA to acquire El Dorado tenements



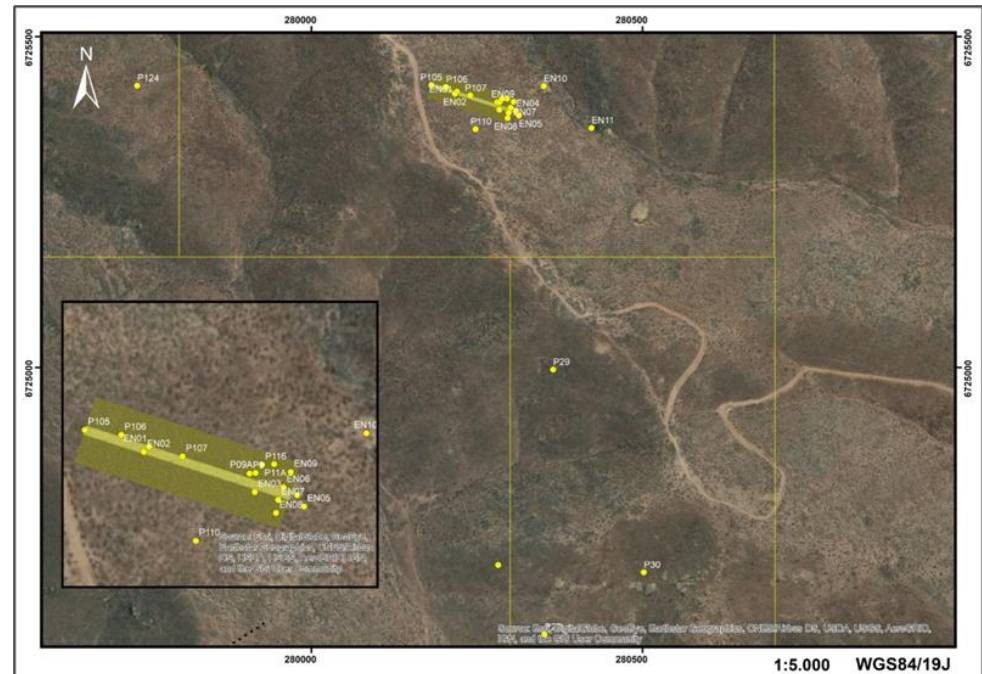
- Magnetite potential
- Copper potential
- Gold potential
- Located on 2 major fault systems



Sample Code	North	East	RL	Datum	Fe %	Au g/t	Cu%
P106	6725424	280203		WGS84	19.93	22.8	0.65
P105	6725427	280181		WGS84	9.88	9	3.3
P11A	6725406	280288		WGS84	20.81	11.4	0.55
P107	6725411	280240		WGS84	16.33	9.6	1.55
P9	6725401	280284		WGS84	32.15	9.6	0.39
P110	6725360	280248		WGS84	13.01	10.2	0.65
P09A	6725401	280284		WGS84	50.28	2.1	0.23
P116	6725406	280288		WGS84	24.47	0.31	1.59
P6A	6725347	279226		WGS84	34.58	0.26	0.36
P6A	6725347	279226		WGS84	22.06	0.4	4.85
P105A	6785427	280181		WGS84	26.34	20.3	0.88
P120	6728780	280405		WGS84	38.51	0.09	1.12
P124	6725426	279737		WGS84	7.22	3.3	4.53
P118	6725129	280743		WGS84	18.4	0.55	0.46
P30	6724691	280502		WGS84	29.36	0.27	0.2
P33	6724702	280282		WGS84	35.71	0.28	0.1
P27	6724597	280352		WGS84	45.81	0.05	0.3

Freehill geologists have done basic rockchip sampling to independently confirm presence of gold and followup sampling has been arranged

Sample Code	North	East	RL	Datum	Au g/t
EN01	6725408	280216	328	WGS84	0.78
EN02	6725408	280216	328	WGS84	10.98
EN03	6725394	280283	299	WGS84	0.08
EN04	6725387	280300	296	WGS84	0.03
EN05	6725387	280300	296	WGS84	4.29
EN06	6725387	280300	296	WGS84	0.17
EN07	6725387	280300	296	WGS84	1.77
EN08	6725387	280300	296	WGS84	2.28
EN09	6725387	280300	296	WGS84	0.02
EN10	6725425	280351	354	WGS84	4.01
EN11	6725362	280423	342	WGS84	0.62







Assays from historical drilling within 700-1500m showed :

- CAB-006 -82m @ 0.35% Cu, 19.24% Fe.
- CB-01 -10m @ 0.49% Cu,  
-40m @ 0.40% Cu, 18.5% Fe,  
-38m @ 0.22% Cu, 19.72% Fe  
(with 12m at 0.40% Cu),  
-6m@ 0.62% Cu, 19.7% Fe,  
-8m@ 0.62% Cu, 21.9% Fe.

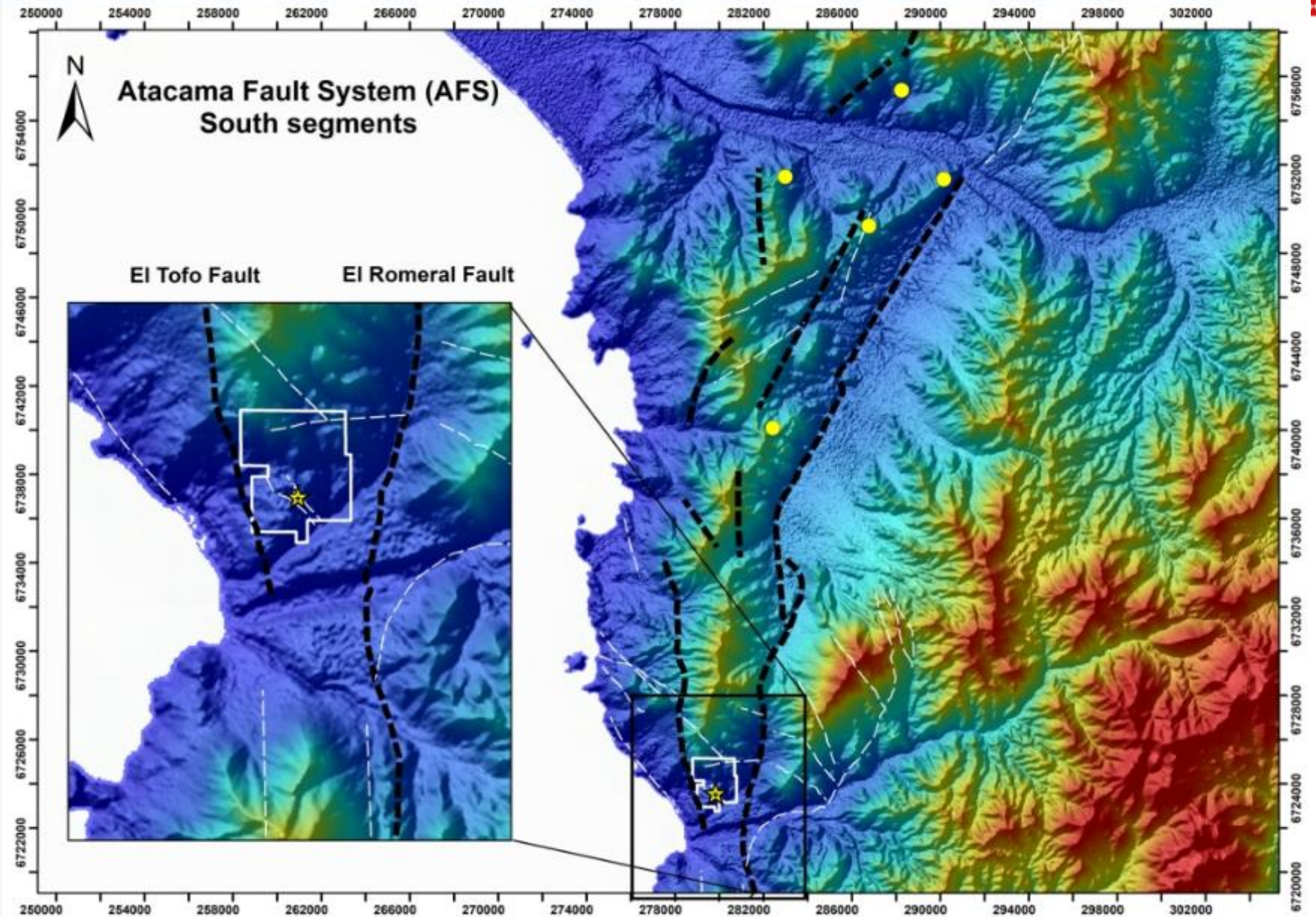
Exploration highlights of La Higuera RC and diamond drilling (4,088m) in May 2012 include:

- 24.0m of 0.47% Cu and 36.26% Fe
- 9m of 0.97% Cu and 12.07% Fe
- 4.1m of 1.46% Cu and 13.86% Fe

Underground channel sampling (222 samples):

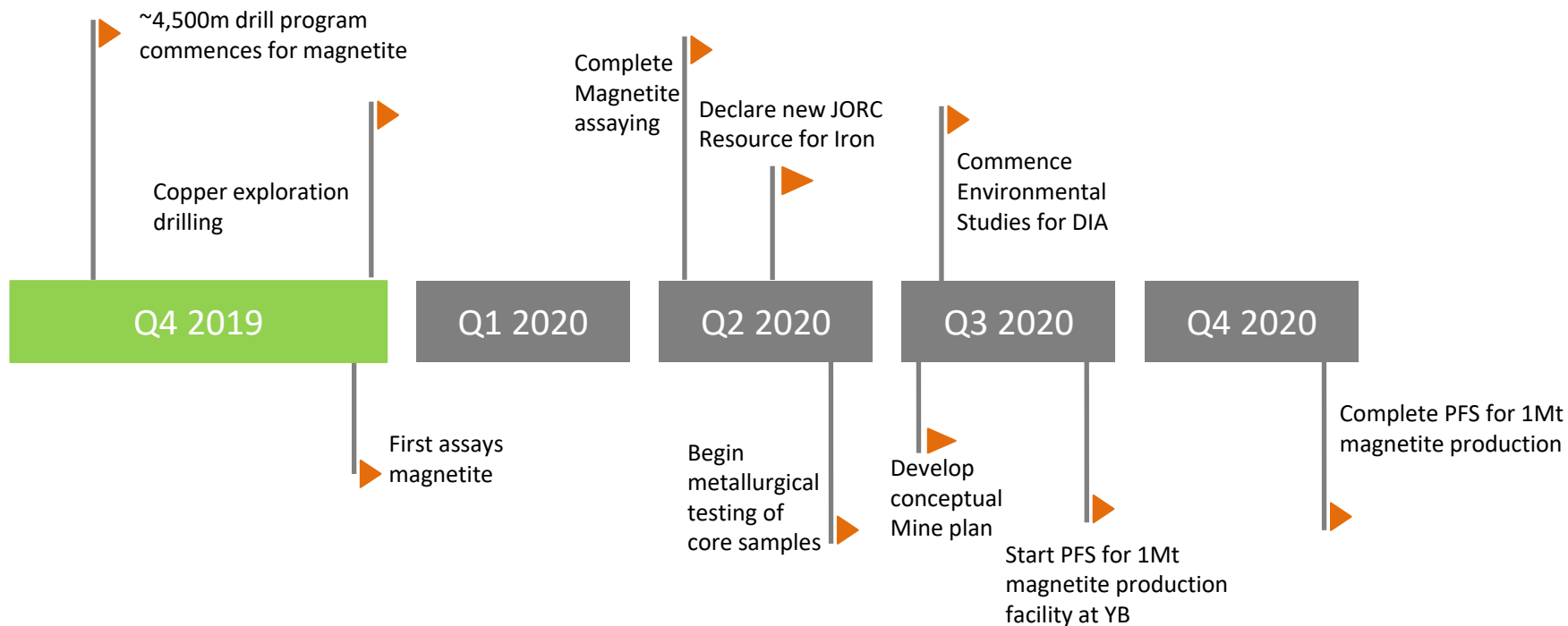
- 23m of 1.20% Cu and 32.7% Fe
- 23m of 0.68% Cu and 35.9% Fe







# Multiple near-term value catalysts



**Contact:**

**Freehill Mining Limited (ASX:FHS)**

**T: 03 8658 5976**

**E: [info@freehillmining.com.au](mailto:info@freehillmining.com.au)**

**W: [www.freehillmining.com.au](http://www.freehillmining.com.au)**