# Hannanmetals





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Qualified Person: The qualified person for Hannan's projects, Michael Hudson, CEO for Hannan, and a Fellow of the Australasian Institute of Mining and Metallurgy, has reviewed and verified the contents of this presentation.

October 2021



## **Overview**

- 1. Hannan is a first mover in the highly prospective sub-Andean region of Peru
- 2. Secured dominant land positions in:
  - Huallaga Basin San Martin Project for sediment hosted copper-silver, and
  - Pachitea Basin Previsto Project for porphyry coppergold
- 3. Top 10 tenure holder in Peru
- 4. US\$35M joint venture agreement with JOGMEC on one third of ground position at San Martin
- 5. Looking to repeat plans for 2021 exploring 1,357 sq km in own right



# **SOCIAL MANAGEMENT/ESG**



➤ Mission Critical

# **Capital Structure**

TMX | TSX Venture Exchange HAN

OTEPink HANNF

INSIDERS: 16%

SHARES ON ISSUE: 91.2 M

**FULLY DILUTED:** 111.4 M

**RECENT PRICE:** C\$0.285 (5 Oct 21)

MARKET CAP: C\$26.0 M

**CASH:** C\$2.6 M

**ENTERPRISE VALUE:** C\$23.4 M



	Price	No. of Securities	Total Securitie
Stock Options			
Expiring November 14, 2021	\$0.10	701,000	
Expiring November 15, 2021	\$0.10	60,000	
Expiring January 23, 2023	\$0.25	3,545,000	
Expiring May 28, 2023	\$0.28	100,000	
Expiring July 21, 2023	\$0.44	250,000	
Expiring August 11, 2023	\$0.455	250,000	
Expiring September 4, 2023	\$0.13	250,000	
Expiring October 8, 2023	\$0.365	100,000	
Expiring December 1, 2023	\$0.435	100,000	
Expiring June 14, 2024	\$0.285	275,000	5,631,000
Warrants			
Expiring February 18, 2022	\$0.30	12,517,429	
Expiring July 13, 2022	\$0.35	2,000,000	14,517,429



#### **Directors & Officers**





Michael Hudson (Chairman & CEO): B.Sc. (Hons), GDipAppFin, FAusIMM, MAIG



Lars Dahlenborg (President): MSc. MAIG



David Henstridge (Director): B.Sc. (Hons), FAUSIMM, MAIG, MGSAUST



Georgina Carnegie (Director): B.Com, AM Harvard



Ciara Talbot (Director): B.Sc. (Honours)



Nick DeMare (Director): CPA, CA



Mariana Bermudez (Corporate Secretary)

Hannan is managed by a group with careers built in the exploration industry.

In recent years, the group has raised more than US\$100M for European and Peruvian exploration and development.

Hannan management is highly experienced with a long history of working in Peru.

#### **Peru Top 10 Tenure Holder**



#### "Some of the world's largest mining companies share our belief that big grassroots discoveries are best made within big land positions"

Rank	Owner	sq km	Market Cap US\$M
1	FRESNILLO PERU S.A.C.	6816	5 800
2	SOCIEDAD MINERA VICUS EXPLORACIONES S.A.C. (AURANIA RESOURCES LTD)	4319	125
3	COMPANIA MINERA ARES S.A.C. (HOCHSCHILD MINING PLC)	4080	1 060
7	NEXA RESOURCES PERU S.A.A (incl COMPANIA MINERAL MILPO S.A.A)	3819	1 002
4	VALE EXPLORATION PERU S.A.C.	3776	110 340
5	COMPANIA DE MINAS BUENAVENTURA S.A.A.	3047	1 816
6	BHP BILLITON WORLD EXPLORATION INC. SUCURSAL DEL PERU	2968	194 164
8	NEWMONT PERU S.R.L.	2185	46 629
9	HANNAN METALS LTD	2154	27
10	MINERA BARRICK MISQUICHILCA S.A.	2151	35 674
11	RIO TINTO MINING AND EXPLORATION S.A.C.	1874	128 167

The top ten Peruvian tenure holders average US\$50B market capitalization and combined hold 18.0% of the tenure held in Peru

Top ranked Peruvian tenure holders at the end of April 2021, considering granted mining concession and application. The table highlights ranked area under tenure and market capitalization. Source: <a href="https://geocatmin.ingemmet.gob.pe/geocatmin/">https://geocatmin.ingemmet.gob.pe/geocatmin/</a>



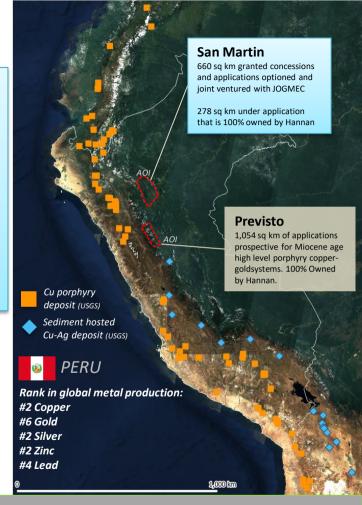
#### Hannan in Peru

#### SAN MARTIN

- 2020 deal with Japan Oil, Gas and Metals National Corporation ("JOGMEC")
- JOGMEC has the option to earn up to a 75% beneficial interest in the San Martin Project by spending up to US\$35,000,000 to deliver to the joint venture a feasibility study on 660 sq km

#### **PREVISTO**

At Previsto, 1,054 square kilometres of mining concession applications prospective for back-arc Miocene age porphyry copper-gold systems in central Peru







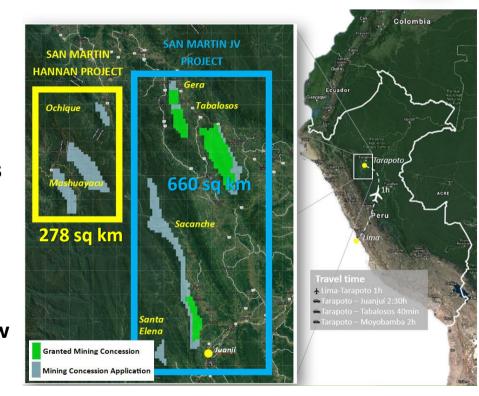
## WHY SED-HOSTED COPPER IN THE ANDES?

- Multiple failed rift basins formed during the breakup Pangea.
- Overlain by intramountain and foreland basins of Tertiary age.
   Now exposed due to Andean inversion.
- **Cu-Ag mineralization** focus at the J-C boundary, a basin redox boundary and unconformity.
- The mineralized window is ~500m wide
- Target styles include all sub-classes of SSC deposits
- At San Martin Project the mineralization has been basin wide.
- Historically very little exploration.

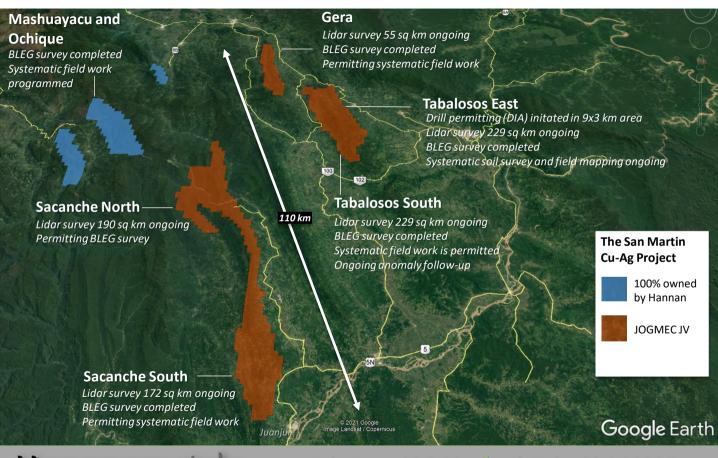
## San Martin Sediment Hosted Copper-Silver



- Well defined search space
- **Basin** wide mineralizing process
- **High grade Cu-Ag** mineralization in 500m wide stratigraphic window



# Overview of ongoing exploration 2021



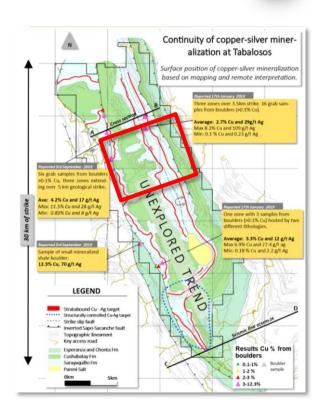


#### **Tabalosos Cu-Ag mineralization**



#### CHANNEL RESULTS

- **2.0** metres @ **4.9%** copper and **62** g/t silver (partially sampled);
- 6.2 metres @ 0.8% copper and 19 g/t silver (full sample); including 1.3 metres @ 3.5% copper and 86 g/t silver;
- **0.4 metres @ 6.3% copper, 152 g/t silver** (partially sampled);
- **0.4 metres @ 7.2% copper, 163 g/t silver** (partially sampled);
- **1.0 metre @ 6.3% copper and 101 g/t silver** (partially sampled);
- **1.8 metres @ 3.7% copper and 42 g/t silver** (partially sampled);
  - including 1.2 metres @ 5.4% copper and 62 g/t silver
- 2.2 metres @ 2.4% copper and 29 g/t silver (full sample); including 0.7 metres @ 5.9% copper and 70 g/t silver





## Style of mineralization





Photo of the mineralized outcrop reported here. Both zones are partially sampled and assay results from the full zone are pending. The outcrop was discovered in a recent landslide and have previously been covered by a thin soil layer. Distance from A to B is 10 meters and the total length of the exposed zone is > 30 meters.

Characterized by "sulfur poor" copper minerals such as chalcocite and cuprite.

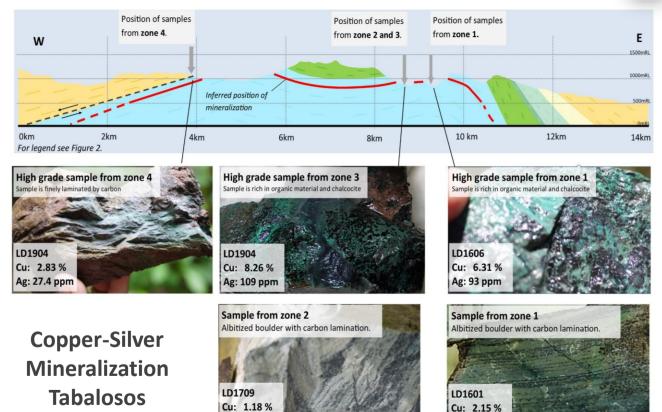
The oxidizing Cu-Ag bearing fluids have precipitated within reduced organic rich shale facies with minor diagenetic pyrite. Strong evidence of a basin wide mineralizing process with high grades see in the same stratigraphic package over 100km.

The host rock is of the upper part of the Jurassic age Sarayaquillo Fm.

The Cu-Ag shale is controlled by a facies change were the typical red Sarayaquillo sandstone transitions to a finely laminated organic rich shale facies within a fine-grained altered/bleached (Fe3+->Fe2+) rock package. Grades can be impressive, with the thickness of the higher-grade mineralized shale >3-4% Cu varying between 0.2-2m. The entire copper anomalous/bleached package is up to 5m thick.

# Tabalosos – High grade Cu-Ag



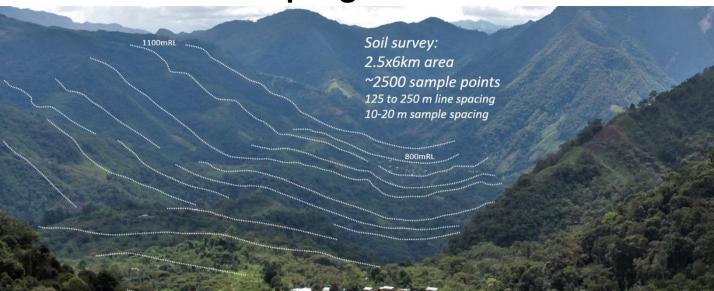




Ag: 14.5 ppm

Ag: 26.2 ppm

**Tabalosos Soil Sampling** 

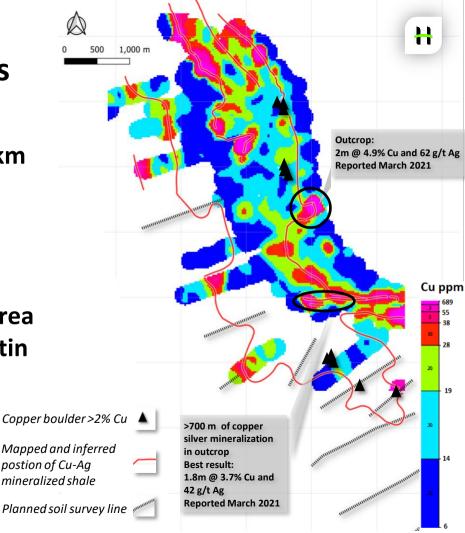


- ✓ Systematic soil survey tracking the Cu-Ag shale under the thin overburden. Less than <1% of the bedrock is estimated to outcrop.
  </p>
- ✓ Rapidly and advancing the project with the best mobile analytical technology available at lower cost compared to commercial laboratories.
- ✓ In-house QAQC programs and multiple analyzer units have doubled the sample rate
  without compromising data integrity.



# **Tabalosos Soil Sampling Results**

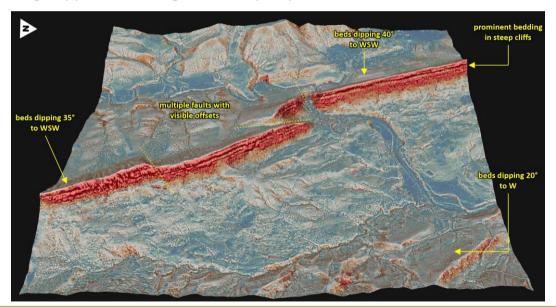
- ✓ Demonstrating continuity over 24km
- <1% outcrop
- ✓ 2-3% of the 815
  square kilometre area under the San Martin JV
- ✓ Discovering new zones undercover



#### Sacanche South – 3D model example (2x2km block)

Surface geochemical sampling (soil and stream) will be complemented with a LiDAR, which uses laser pulses that effectively strip out the vegetation overprint and differentiates rock types and structures.

The combination of LiDAR and surface geochemistry (soil and stream) are critical for delineating copper-silver targets in the prospect area.

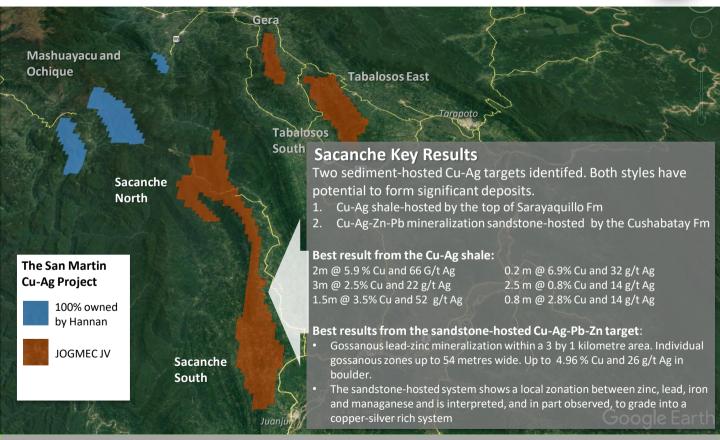






# The Sacanche project area



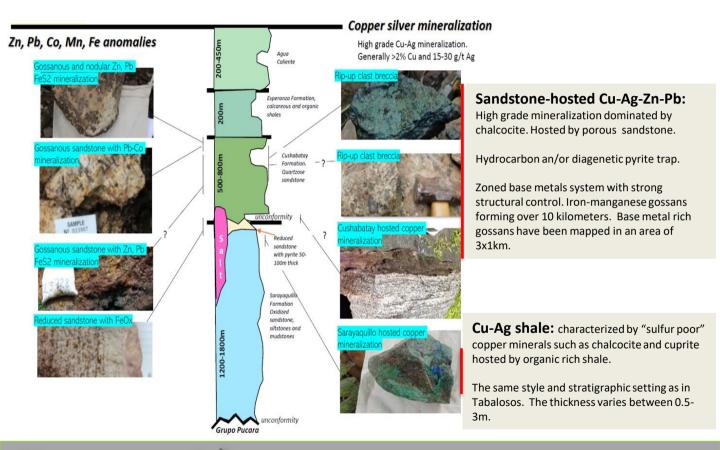




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#### Style of mineralization at Sacanche

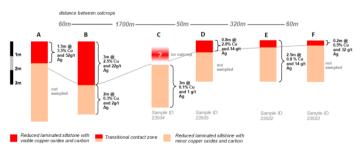


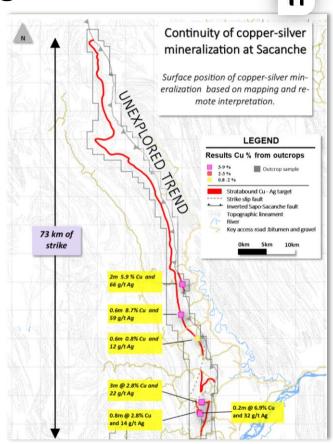
## Sacanche stratiform Cu-Ag mineralization

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- ✓ High grade Cu-Ag shale over 80km.
- ✓ Width 0.5-3 metres
- ✓ Continuity at km-scale

Correlation between stratabound copper sliver mineralized outcrops at Sacanche South

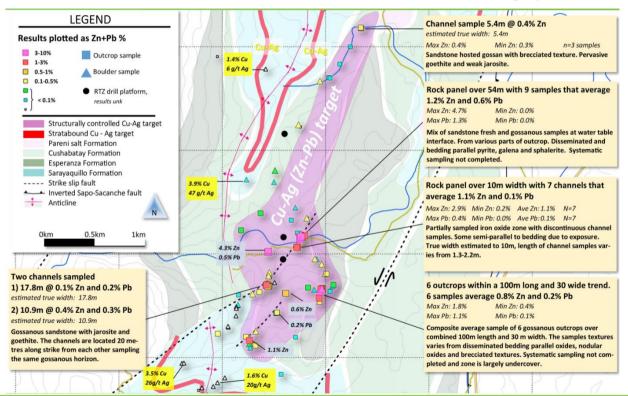






#### Sacanche sandstone-hosted Cu-Ag mineralization

- ✓ Leached system with kilometer scale basemetal gossans on surface.
- ✓ Fluid focus in anticline with both chemical reductants and stratigraphic seals





# PROJECT UPSIDE – BLEG RESULTS

- ✓ Rapidly advancing the vast ground holding with systematic sediment samples from rivers
- ✓ Mapping footprint of a basin wide mineralizing system
- ✓ Anomalies are followed-up by detailed prospecting of rivers



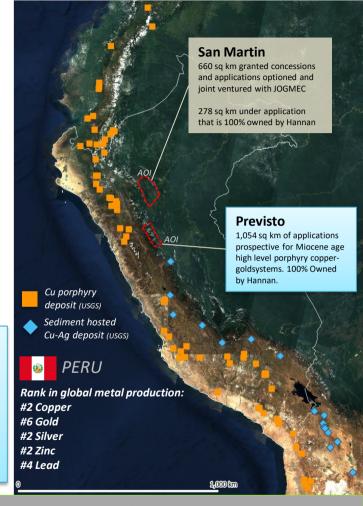
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#### **PREVISTO**

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# WHY BACK-ARC MIOCENE AGE COPPER GOLD PORPHYRY IN PERU?

- Back-arc settings are often overlooked in porphyry exploration due to distance from magmatic arc
- Long-lived crustal scale structures may "funnel" magmas hundreds of kilometers and porphyry deposits develop far inboard of the "conventional" settings.
- These are often high energy systems that can form big deposits such as Bajo de Alumbrera copper-gold porphyry in Argentina.
- The back-arc contains abundant reactive sedimentary rocks such as limestones, shales and evaporites.
- In Central Peru the largest porphyry deposits formed in the late Middle to early Late Miocene, in response to the change of subduction.
- Historically very little exploration.



# Hannan is a first mover and the opportunity is:

First systematic stream sediment survey in a new metalogenic province of Peru covering 140x50 km;

Rapid identification of "low hanging fruit"e.g. mineralizing system which are exposed on surface and with good access;

Avoiding areas with protection overlays such as environmetal or indidgenous title;

Currently building up a porfolio of 5-7 porphyryskarn targets 100% owned by Hannan;

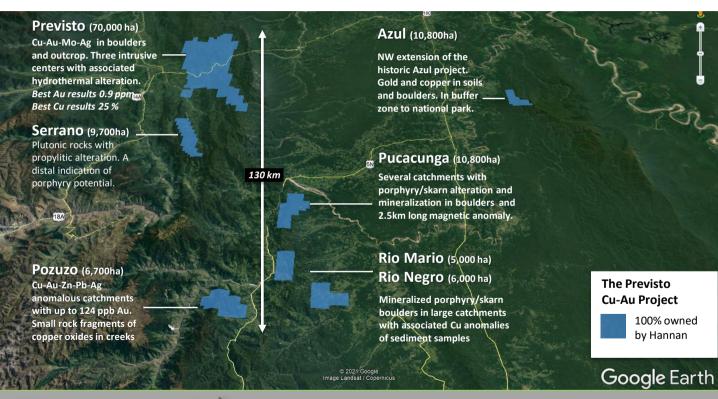
No historic drilling or detailed geophysics known



#### **Overview of the Previsto Cu-Au Project**



All targets are early stage, applications are pending and observations are dominated by boulders with support in regional geophysics and stream sediments.





# Styles of mineralization



Observations are of early nature and mainly based on boulders.

The Previsto project hosts porphyry and porphyry-skarn type mineralization.

Highest grades are currently from Previsto Oeste. Here multiple Cu mineralized boulders have been found which assay 0.05-0.2% Cu. Best results are 25 % Cu from a massive chalcocite float and 0.9 ppm Au was sampled from a hydrothermal breccia boulder at Previsto Este.

One dacitic outcrop with phyllic alteration and trace covellite has been discovered at Previsto Este. It assayed 0.33 % Cu (background photo)

Too date only B-type veins have been observed and the boulders are interpreted to represent the intermediate stages of a multiphase porphyry cluster. Less than 1% of the bedrock outcrops and higher temperature (and higher-grade Cu-Au) mineralization with A-type veins are believed to exists within the area. But may be leached and undercover.



# **Rock photos**





Sample 4106: porphyry float with silicfication and phyllic alteration. With trace of chalcocite. 0.2 g/t Au, 0.09 % Cu



Sample 23573: Porphyry float with hydrothermal magnetite, moderate phyllic and weak argillic alteration. Dissiminated pyrite with trace chalcopyrite and covelite



Sample 23531: Skarn float with retrograde alteration. 477 ppm Cu.



Sample 4105: hydrothermal breccia with porphyry clasts and matrix of iron oxides. 0.9 g/t Au, 0.13 % Cu, 6.7 pp, Ag 106 ppm Mo



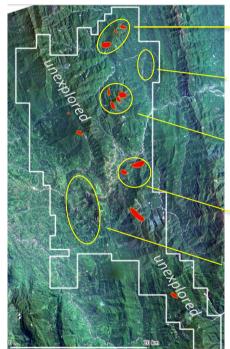
Sample 23566: hydrothermal breccia clasts of cuartzite and matrix of grounded rock. Trace chalcopyrite and copper oxides. 0.16 % Cu



Sample 23597: Dacitic porphyry float with, moderate phyllic and weak silicification. Some malakite and iron oxides. 0.2% Cu

#### **Previsto Exploration Results**

Multiple early stage porphyry targets with confirmed miocen age intrusions and associated Cu-Au mineralization



Discrete magnetic anomaly from regional spaced airborne data. 700 m line spacing and

#### **Previsto Norte**

Porphyry style Cu-Au target inferred from intrusive plutonic boulders with propylitic alteration and magmatic magnetite.

#### Previsto Este

Porphyry style Cu-Au mineralization confirmed. Up to 0.33% Cu from grab sample in outcrop and 0.9 g/t Au in boulder. The area is largely under alluvial cover.

#### **Previsto Oeste**

Porphyry style Cu-Au mineralization confirmed in boulders from all catchments with up to 25% Cu in grab sample from float and up to 0.2 g/t Au. Up to 0.4 ppm Au in stream sediment samples.

#### Previsto Sur

Porphyry style Cu-Au target inferred. Recognizance work has identified intrusive boulders with propylitic alteration in multiple catchments.

#### Belen-Pendencia

Plutonic granodiorites with Cu-Mag veins. Evidence of multiple magmatic events. Skarn alteration have been noted in outcrop. Two catchements anomlous in Cu-Au.

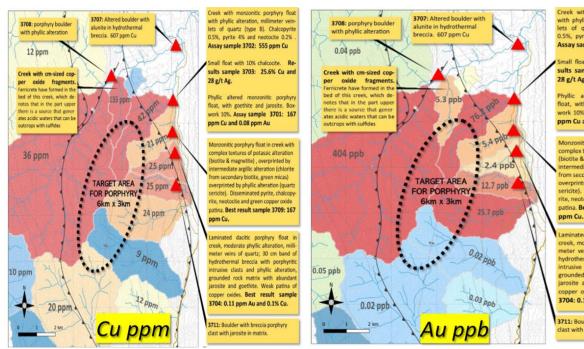
> The localy geology is dominated by Jurassic to Paleogene sedimentary rocks in an East verging trust and fold belt.



#### **Previsto Oeste Exploration Results**



#### **Boulder and stream sediment results:**



Creek with monzonitic porphyry float with phyllic alteration, millimeter veinlets of quartz (type B). Chalcopyrite 0.5% pyrite 4% and neotocite 0.2% Assay sample 3702: 555 ppm Cu

Small float with 10% chalcocite. Results sample 3703: 25.6% Cu and 28 g/t Ag.

Phyllic altered monzonitic porphyry float, with goethite and jarosite, Boxwork 10%, Assay sample 3701: 167 ppm Cu and 0.08 ppm Au

Monzonitic porphyry float in creek with complex textures of potassic alteration (biotite & magnetite), overprinted by intermediate argillic alteration (chlorite from secondary biotite, green micas) overprinted by phyllic alteration (quartz sericite). Disseminated pyrite, chalcopyrite, neotocite and green copper oxide patina. Best result sample 3709: 167

Laminated dacitic porphyry float in creek, moderate phyllic alteration, millimeter veins of quartz; 30 cm band of hydrothermal breccia with porphyritic intrusive clasts and phyllic alteration. grounded rock matrix with abundant iarosite and goethite. Weak patina of copper oxides. Best result sample 3704: 0.11 ppm Au and 0.1% Cu.

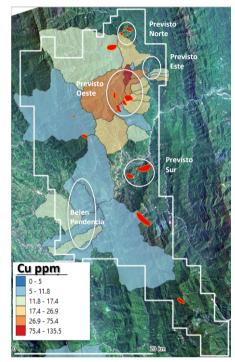
3711: Boulder with breccia porphyry clast with jarosite in matrix.

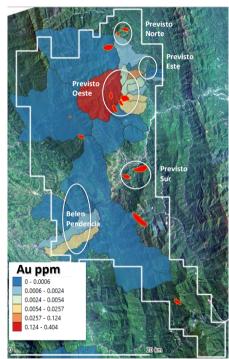


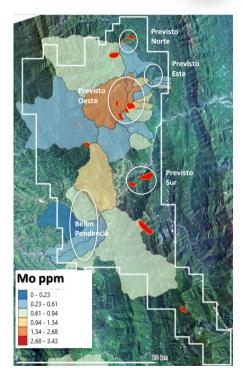
## **Previsto Exploration Results**

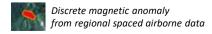
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#### Stream sediment data



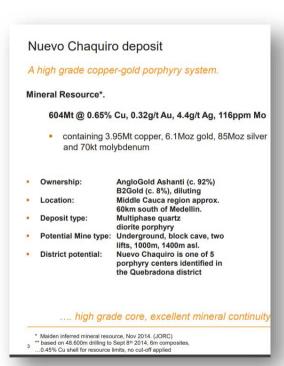


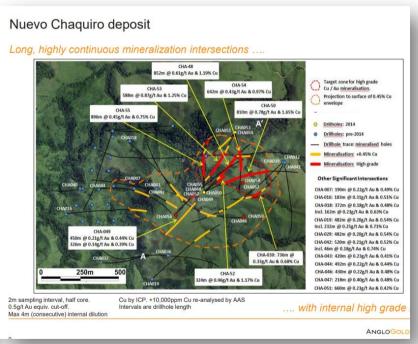






#### **Previsto Oeste Analogue**



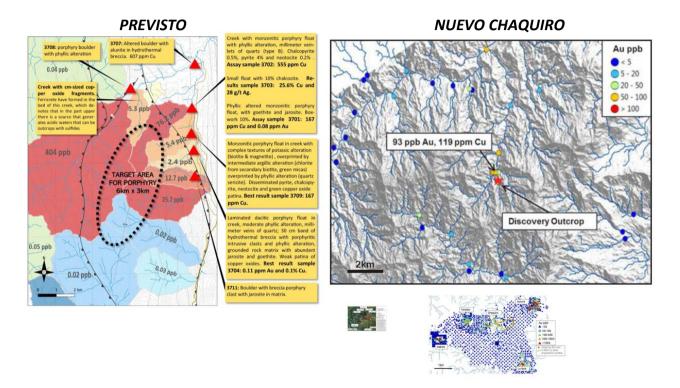


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#### **Previsto Oeste Analogue**

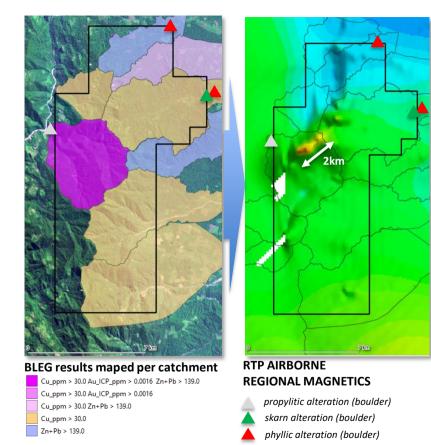
#### GOLD IN STREAMS, MAPS AT THE SAME SCALE





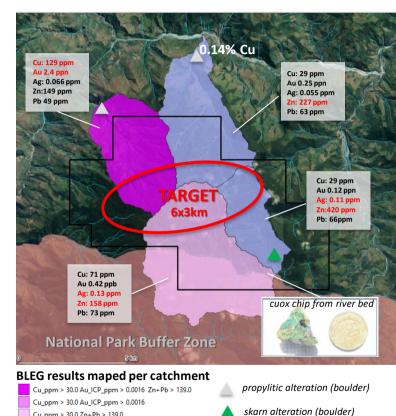
## **Pucacunga Exploration Results**

- Porphyry/skarn target
- 12 km long unexplained magnetic anomaly;
- The peak magnetic anomaly is 2km long and coincides with Cu-Ag-Zn-Pb anomalous BLEG samples
- The localy geology is dominated by Jurassic to Paleogene sedimentary rocks in an East verging trust and fold belt.



#### **Pozuzo Exploration Results**

- Bulls-eye porphyry/skarn target
- All catchments from mountain are anomalous;
  - Up to 129 ppm Cu, 2.4 ppb Au and 420 ppm Zn
- Intrusive boulders with proylitic alteration have been noted.
- No regional magnetic data from the project
- Permian and triassic sediments





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Cu\_ppm > 30.0 Zn+Pb > 139.0 Cu\_ppm > 30.0 Zn+Pb > 139.0

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Previsto Project Work Plan 2021

- Active BLEG program
- Prospecting
- Social permitting
- Aeromagnetics



#### **Budget and Timelines**



# Active COVID-safe field programs underway – 2021 a year of discovery

# SAN MARTIN – JOGMEC JV US\$2M

- ✓ 2021 Aim: Continue to build basin scale project, determine continuity at varying scales
- ✓ Local approval received for initiation of baseline studies and permitting to undertake advanced exploration work, including diamond drilling

# PREVISTO – 100 % HANNAN US \$700K

✓ 2021 Aim: Define significant gold-copper porphyry/epithermal district



## **Summary**



- ✓ Opening up new search spaces via grassroots discovery
- ✓ \$35M JV with JOGMEC
- ✓ Dominant land positions in Peru frontier areas next generation Cu-Ag and Cu-Au deposits
- ✓ Collecting data, making discoveries, creating value

# Hannanmetals

#### A 100% PERUVIAN TEAM DEDICATED TO DISCOVERY



#### **Contact Us**



