Qtz vein stockworking in the Discovery Outcrop.

DISCOVERY AND GEOLOGY OF THE NUEVO CHAQUIRO CU-AU (AG-MO) PORPHYRY DEPOSIT

A HIGH GRADE COPPER-GOLD PORPHYRY DISCOVERY IN COLOMBIA

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Nuevo Chaquiro deposit

*A high grade copper-gold porphyry system.*

Mineral Resource*.

604Mt @ 0.65% Cu, 0.32g/t Au, 4.4g/t Ag, 116ppm Mo

- containing 3.95Mt copper, 6.1Moz gold, 85Moz silver and 70kt molybdenum

- **Ownership:** AngloGold Ashanti (c. 92%)
  B2Gold (c. 8%), diluting
- **Location:** Middle Cauca region approx. 60km south of Medellin.
- **Deposit type:** Multiphase quartz diorite porphyry
- **Potential Mine type:** Underground, block cave, two lifts, 1000m, 1400m asl.
- **District potential:** Nuevo Chaquiro is one of 5 porphyry centers identified in the Quebradona district

…*high grade core, excellent mineral continuity, clean metallurgy, good infrastructure.*

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* Maiden inferred mineral resource, Nov 2014. (JORC)
** based on 48.600m drilling to Sept 8th 2014, 6m composites, 0.45% Cu shell for resource limits, no cut-off applied
Neuvo Chaquiro Deposit – Quebradona district.

Discoveries are a long chain of events, with some key decision points, that result in the first economic intersection of what later becomes a significant deposit.

Key to this discovery was multidisciplinary teamwork.

AGA formed 1st JV in Colombia

AGA office established B2Gold JV

B2Gold cease activities

AGA takes over management

Initial visits to Colombia

Prospect visits, GIS database, Operational practicality

Regional SS programs & follow-up

Soil Sampling Target Identification

Drilling 13,600m Target testing (2,2,2)

Drilling 27,427m (Strategy change)

Drilling 17,283m (resource)

Updated Scoping Study

Maiden Resource

Exploration Strategy: 2:2:2

Exploration Strategy: Tier 1

2000

2005

2010

2015
Mid Cauca terrane

*Mid-Cauca: prolific porphyry and epithermal Au province.*

**Cauca belt**
- Miocene aged pull-apart basin running the length of Colombia and into Ecuador.

**Mid-Cauca**
- northern end of the belt, bounded by Mistrato & Romeral fault systems. Oceanic crust to the west and continental crust to the east.
- highly fertile, porphyry gold and epithermal belt, now with a Cu-Au porphyry deposit.

**Quebradona Project**
- lies in the central part between the Marmato and Titiribi mining districts.
- is hosted by flat-lying andesitic tuffs, agglomerates and flows of the Combia Formation (6-11Ma)
- intruded by near-vertical Miocene diorite to quartz diorite dikes and stocks. (6-8.5Ma)

* Maiden inferred mineral resource, Nov 2014. (JORC)
** no outcropping mineralised porphyry or mineralisation

**.... Nuevo Chaquiro is the first Cu dominant porphyry system.**
The Quebradona district

Rolling topography deeply incised by the Rio Cauca...

.... with volcanoclastics masking a large magmatic chamber.
The Quebradona district

From “discovery outcrop” to economic intersection in 10 years …

… privileged location in closed valley.
District Geology

*Extensive chlorite sericite alteration with localized, geochemically anomalous potassic ....*

Quebradona District Surface Geology
- Flat-lying andesitic tuffs, agglomerates and flows of the Combia Formation.
- Localized dacitic porphyry stock & dykes
- 1km² elliptical sericitic alteration zone within extensive chlorite sericite alteration. Local potassic alteration.

Age dating: Nuevo Chaquiro system
- Mineralization: 7.51Ma (Re-Os), 7.6Ma (U-Pb);
- Epithermal veins: 7.53Ma (Re-Os);
- Late Qtz Diorite: 6.10Ma (Re-Os),
- suggests a duration of 1.4 Ma

.... and central, geochemically barren*, phyllic core.

* Maiden inferred mineral resource, Nov 2014. (JORC)
** no outcroping mineralised porphyry or mineralisation
Nuevo Chaquiro deposit

Long, highly continuous mineralization intersections ....

2m sampling interval, half core.
0.5g/t Au equiv. cut-off.
Max 4m (consecutive) internal dilution

Cu by ICP. +10,000ppm Cu re-analysed by AAS

Intervals are drillhole length

.... with internal high grade zones.
Nuevo Chaquito deposit

*Classic preserved multiphase, mineralized porphyry system…*

**Geology & alteration**

- Multiphase; early, quartz diorite (highest grade), intermineral quartz diorite & late diorite, porphyry complex hosted by andesitic tuffs, agglomerates and flows.

- Classic alteration system with large potassic, (biotite flooding +/- magnetite) and deeper calcic-potassic (actinolite-biotite-epidote) alteration system overprinted by later, chlorite sericite alteration associated with intermineral quartz diorites.

- Surface to 250-400m, overprinted by a phyllic lithocap covering and area of 1400m * 800m.

- Regional structural preparation but minimal faulting, no significant displacements.

- Epithermal ISS / “D” vein zone on western boundary.

*… not so obvious from the surface.*
Key discovery factors: Part 1 - Technical

*Effective use of the resources at hand …*

- Surface alteration mapping – geologists on the ground.

**The Model**
- Multi-element geochemistry: mapping and discrimination of lithology & alteration styles.
- Regional aeromagnetics / radiometrics: structural framework & intrusive centers.
- 3D susceptibility models from aeromagnetics.

**Vectoring**
- Hyperspectral logging of core: vectoring → decisions on drill hole.
- Physical property mapping: susceptibilities for constraining the 3D modelling, others as input.

**Understanding**
- Core logging: alteration types & vein density.
- Drill hole multi-element geochemistry: structures, late stage mineralisation, breaks.
- Integration

… team approach, with each providing a clue to the puzzle that became clearer over time.
2004 – 2005: Stream sediment sampling

- 2004 – 2005: Regional stream sediment geochemistry survey: modest localised gold anomaly
- Follow-up led to identification of the intensely stockworked “Discovery Outcrop”
- Outcrops disappointing with a maximum of 169 ppb gold, no anomalous copper - weak anomalies in bismuth and antimony
Rock and C horizon sampling completed from 2006-2009 showing the porphyry centers discovered at surface by B2Gold.

2008 drilling by B2Gold total of 13,319m and discovered 5 porphyry centers.

Best discovery was Aurora with 209m @ 0.9g/t Au and 0.12% Cu.

2005 – 2009: B2Gold regional soil / mapping program and initial drill testing
Regional Aerogeophysics: magnetics, radiometrics, Ztem
Drilling: 58,310m  
Milestones at 13,600m, 41,027m and 58,310m

- Good ground preparation before entry & then NE

- Massive Cpy / magnetite veins: CHA-39

- Banded Qtz-Cpy Veining in cupola zone of CHA-48 (505m)

- Magnetite and Cpy intergrowths in Early Qtz Diorite CHA48 (703m)

- Intense A-B-Magnetite veining in wall rock tuffs : CHA49 (470m)
Hyper spectral modelling used together with 3D susceptibility model.

Geologists / specialists were working well but independently.
Key discovery factors: from the start

Maximization of people and technical recourses…

- Good ground preparation before entry & then “first mover” advantage.
- Regional focus and dominant land position
- Change in exploration strategy to Tier 1 & budget availability → decision to drill deep.
- Early project champions: Sergei / Timo.
- Harnessing the Global GFs team knowledge:
  - Multiple dataset integration and team proposals
  - Access to specialists and experts, working with the team.
  - Peer review and input.
- Clear objective & perseverance heightened by sense of urgency.
- AGA Management involvement and support.

… team approach, with each providing a clue to the puzzle that became clearer over time.
THANK YOU

TO ALL THOSE WHO PARTICIPATED IN, SUPPORTED THE DISCOVERY

The Colombian team

Nick Winer
VP Greenfields Colombia
Nuevo Chaquiro: Key positive aspects

*Potentially the best discovery in 2014 …*

- **Excellent continuity and grades of mineralization.**
  - Very high grade cupola with +2% Cu values.
  - Large high grade +1.2% Cu core with
  - In very large medium grade 0.65% Cu, 0.3g/t Au envelope. (+0.45% Cu resource shell).

- Exploration extension and blue sky potential.

- **Highly competitive, clean Cu concentrate.**
  - Underground operation: potentially block cave.
  - Potentially compact footprint in a single district.

- Reasonable to excellent infrastructure.
  - Favorable topography
  - No fatal flaws to date.

- Early integration of environmental programs with social activities.
  - Well managed and positive local social scenario.
  - No resettlement or issues with Artisanal miners.
  - Positive water balance.

*… but over a decade in the making.*
Nuevo Chaquiro deposit

*Highly continuous mineralization….*

**Mineralisation**

- Very high grade: sheeted vein cupola, Cpy & Mo veins.
- High grade: early quartz diorite with Cpy blebs, fractures, stringers & disseminations
- Medium grade: intermineral quartz diorite and tuffs. Cpy disseminations & fractures & more magnetite.

- Distribution
  - Au and Ag accompany Cu.
  - Mo forms a halo over the top part of the mineralization.
  - Cu is exclusively associated with cpy.

- Mineralisation destruction: late diorite intrusions

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*Photo 1: Potassic alteration of early quartz diorite cut by chalcopyrite +/- quartz veinlets.*
*Photo 2: CHA-048 - Strongly quartz, chalcopyrite veined core from Early quartz diorite cupola zone.*

... *negligible internal waste or presence of contaminants.*