

Discovery History of Sierra Gorda, Antofagasta Province, Chile:

**Implications for
Successful Exploration in
Mature Terranes.**

Patrick Fahey – Quadra Mining, Ltd (Currently Copper Discovery Ventures, Ltd)

Jack Currie – KGHM International

Jorge Maya-Marin – KGHM International

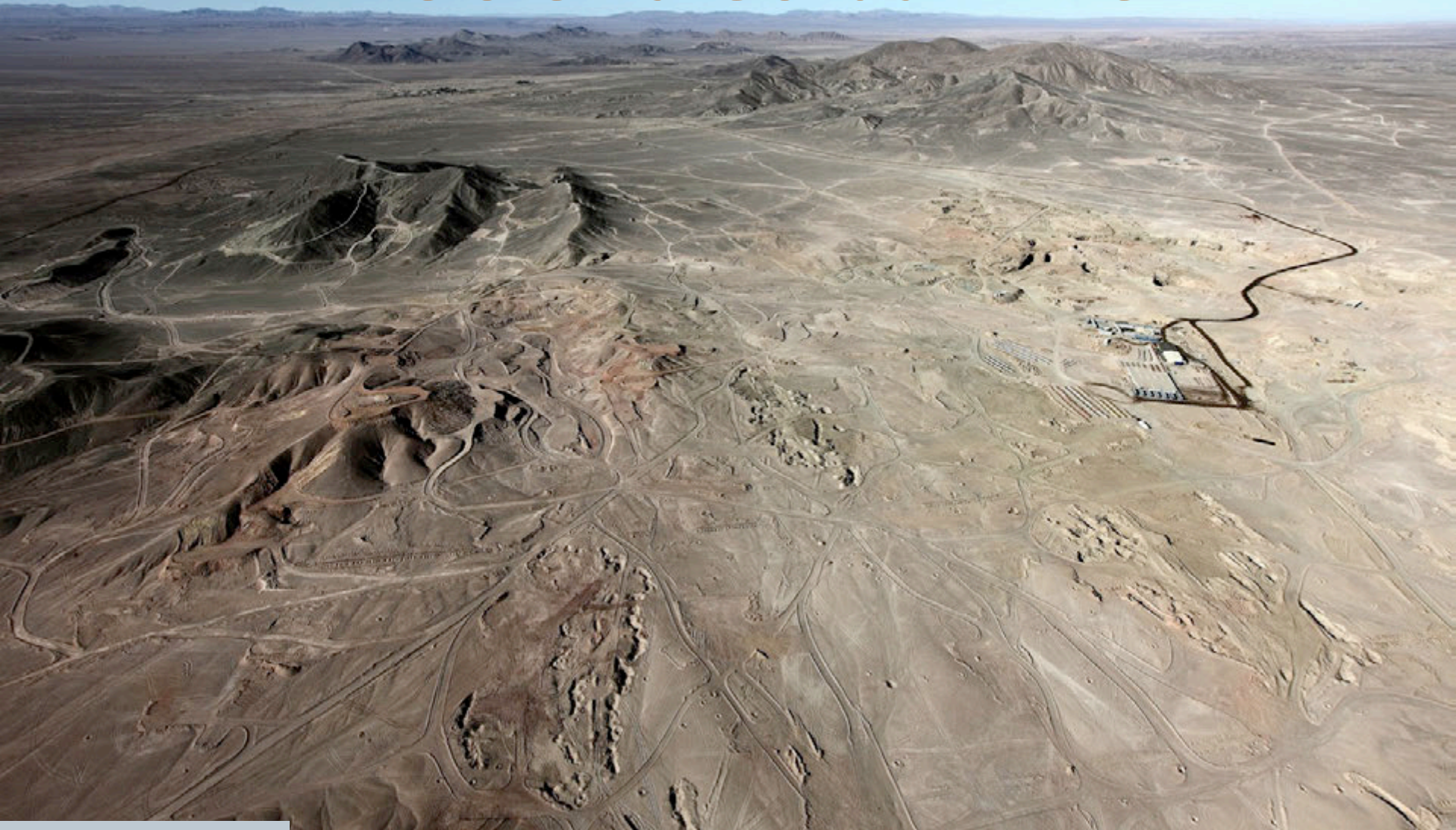
Jaime Diaz- – KGHM International

Gregory McKelvey – Copper Discovery Ventures, Ltd

KGHM
INTERNATIONAL

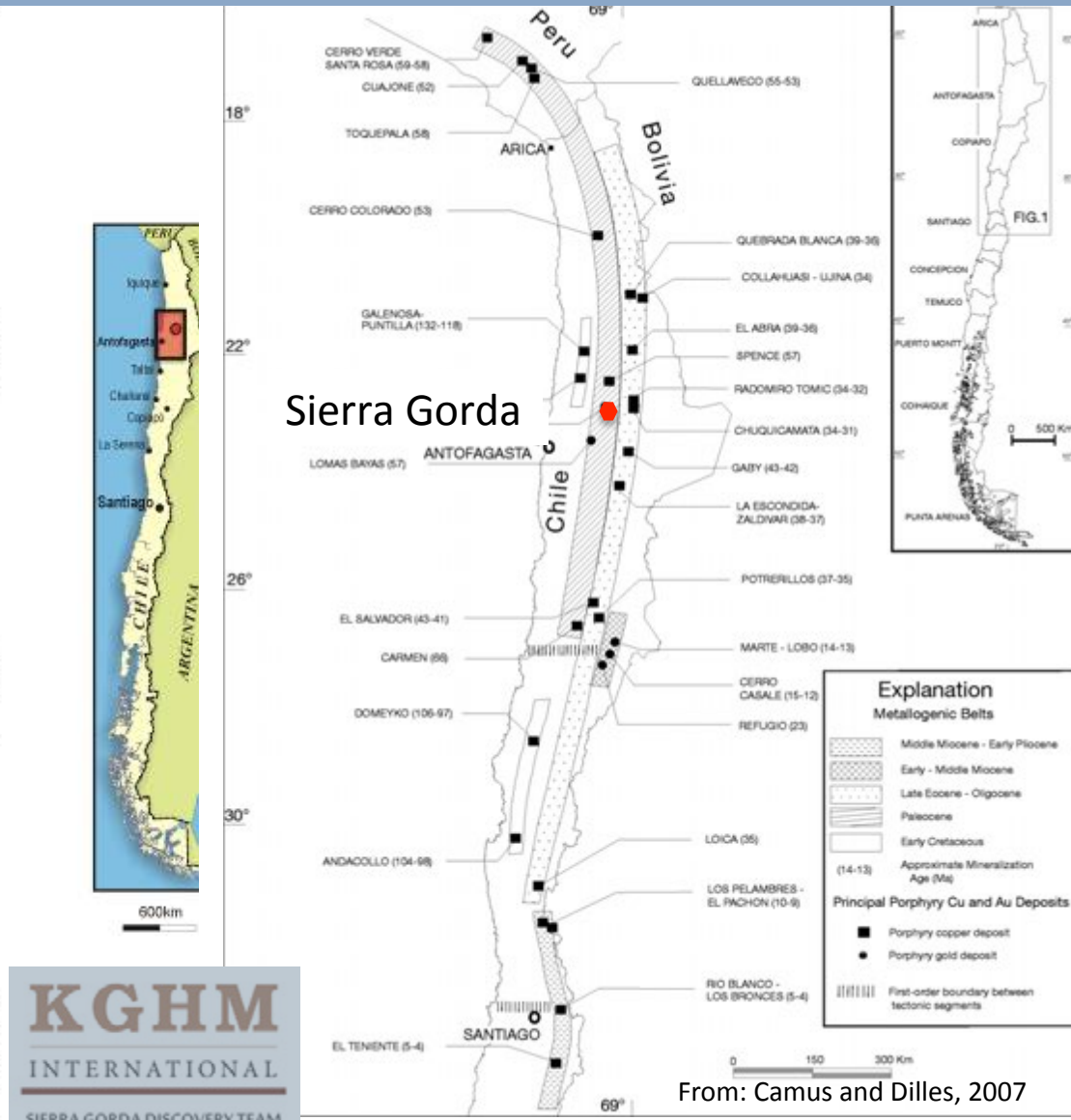
SIERRA GORDA DISCOVERY TEAM

The Sierra Gorda Mine



Discovered in July 2006 by Quadra Mining Ltd. (now KGHM Intl, Ltd)
Current reserve: 1,270 M tonnes at 0.52% CuEQ at 0.2% CuEQ
M, I, and I: 2,917 M tonnes at 0.2% CuEQ

Sierra Gorda Project



From: Camus and Dilles, 2007

Spence from Sierra Gorda.

Mature terranes are the future of exploration;
and for all practical purposes the future is now...



Sierra Gorda & Surroundings

Major discoveries since 90's



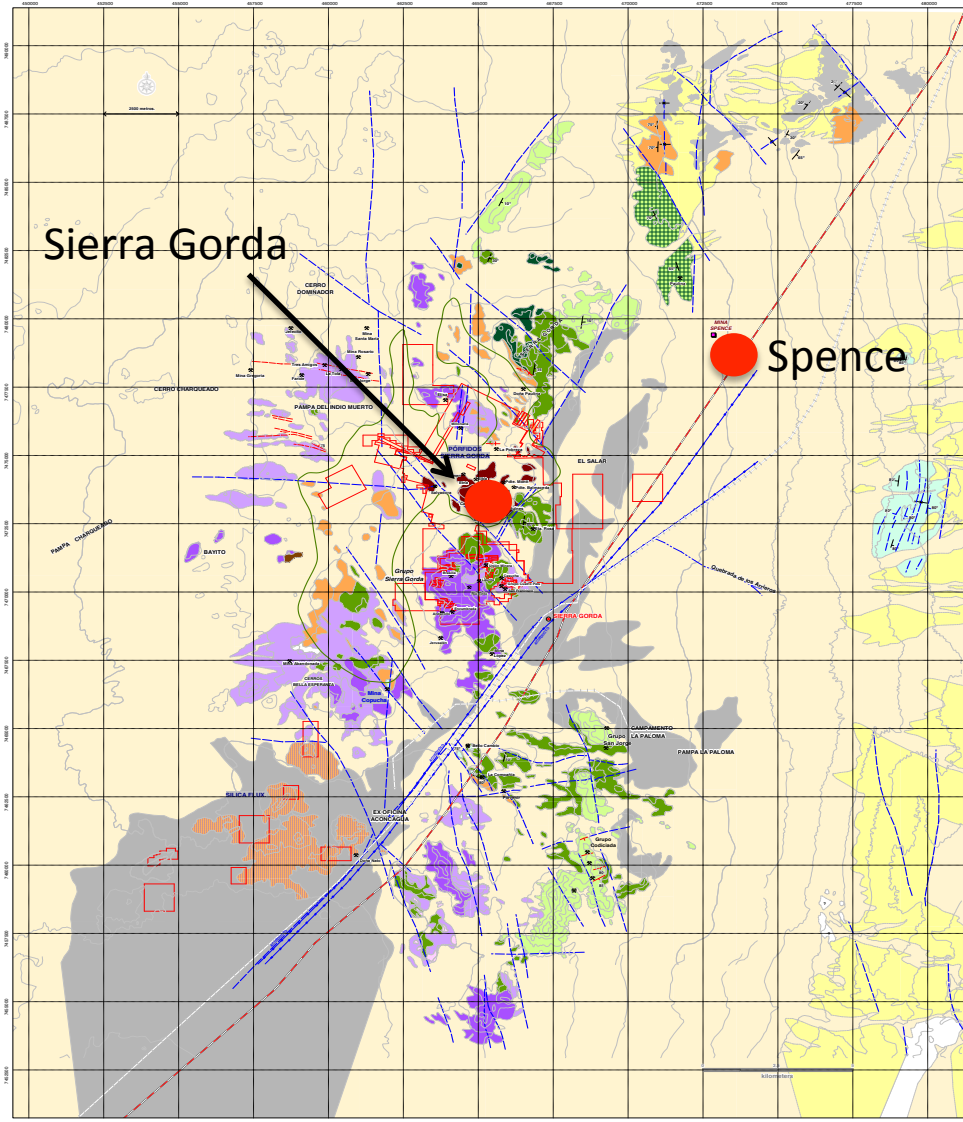
- **Paleocene-Eocene:**

- Lomas Bayas - Oxide
- Spence - Supergene sulfide/oxide
- **Sierra Gorda – Hypogene sulfide**

- **Late Eocene-Oligocene:**

- Tesoro – Exotic
- Esperanza - Hypogene
- Esperanza Sur (Telegrafo) – Hypogene and supergene
- Encuentro - Oxide
- Polo Sur – Hypogene

Sierra Gorda District



- Located on E side of batholith against Mz andesites
- Late stage porphyries and tourmaline breccias cut batholith and wall rocks
- Much of the project area was covered by colluvium
- Mineralization is 57.5 to 60 Ma
- Spence is slightly younger & shorter lived



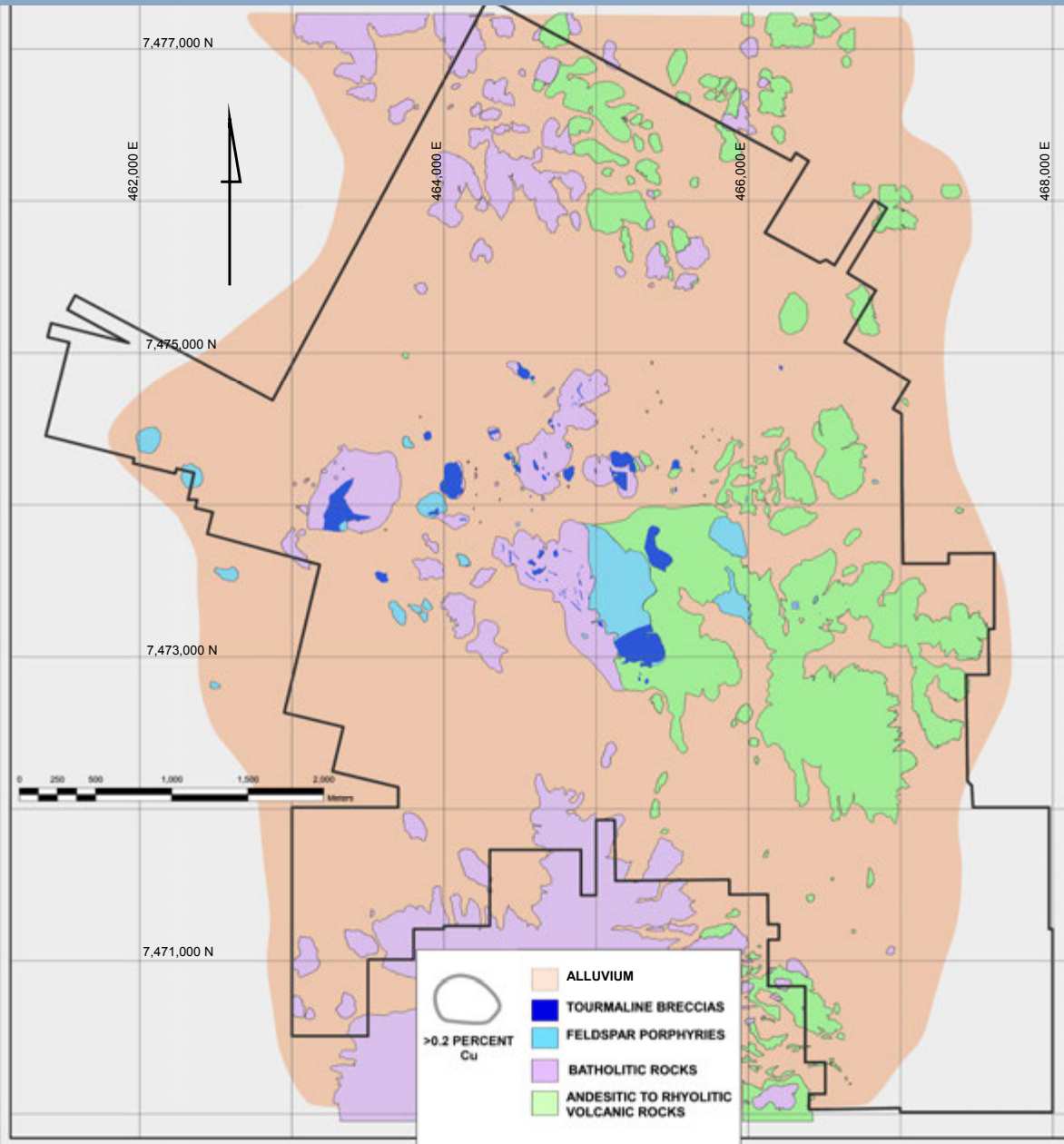
Sierra Gorda Pre-2000

~220 M tonnes @0.53%

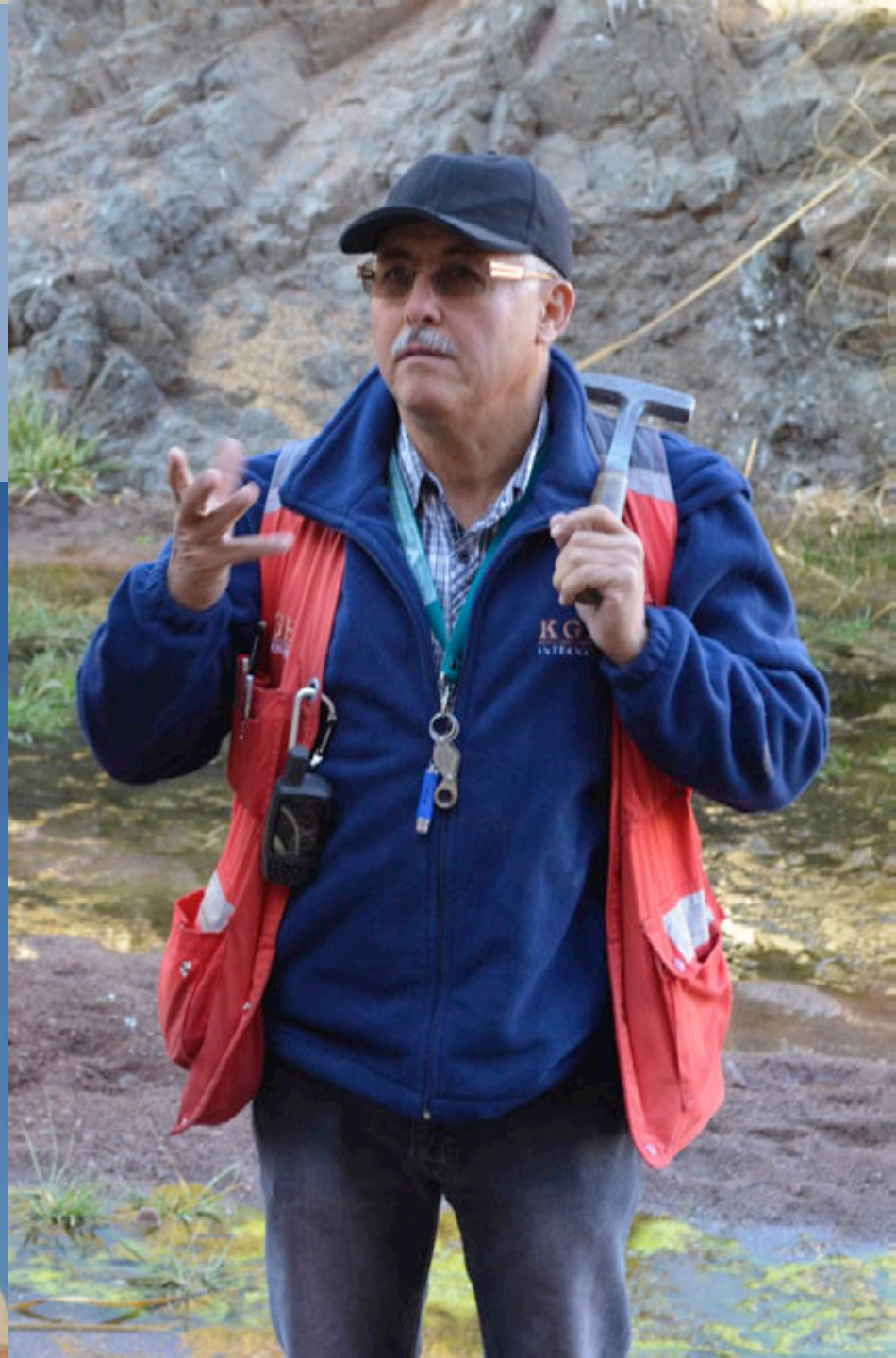
KGHM
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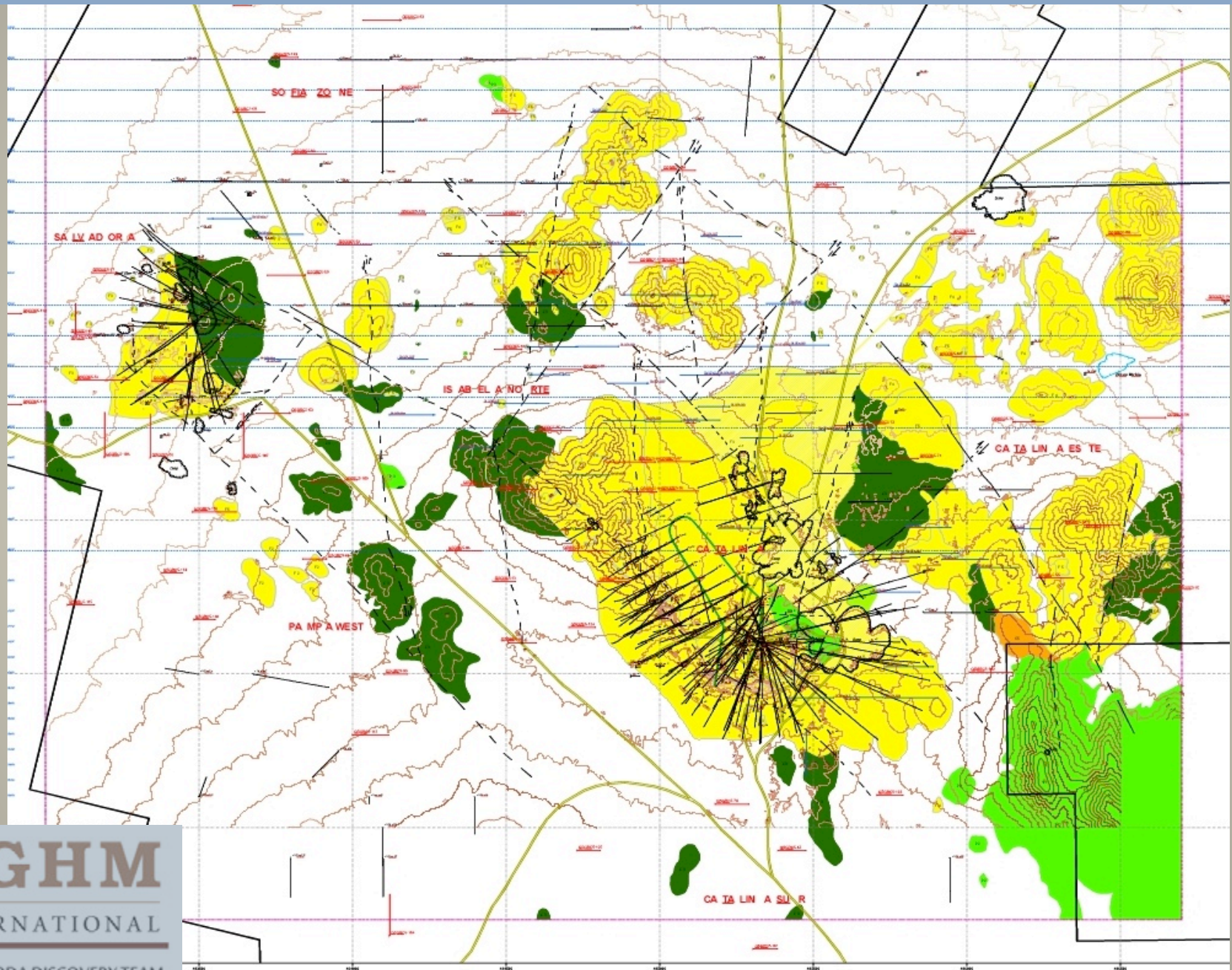
Sierra Gorda - Before Quadra



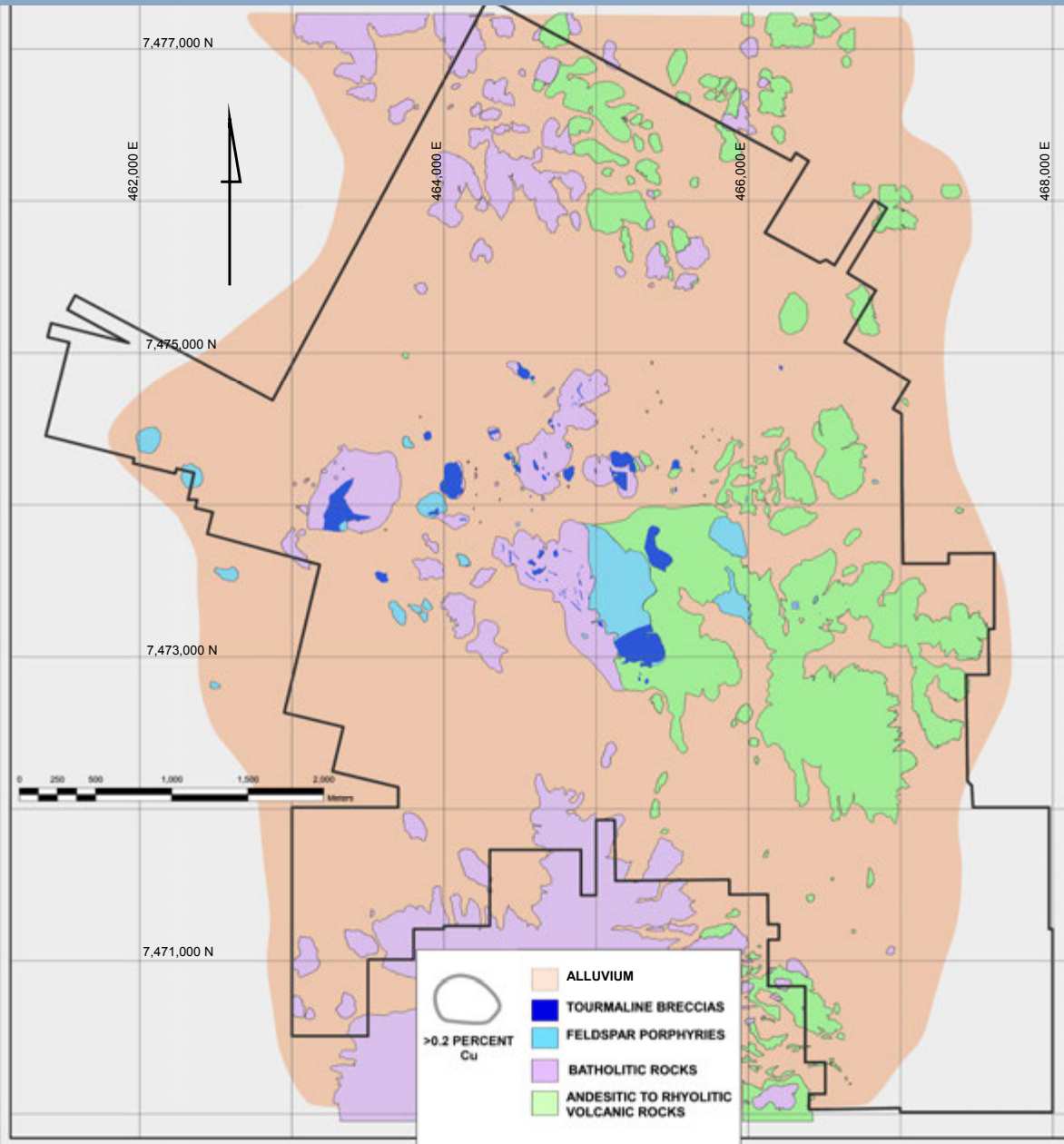
Sierra Gorda Quadra 2004



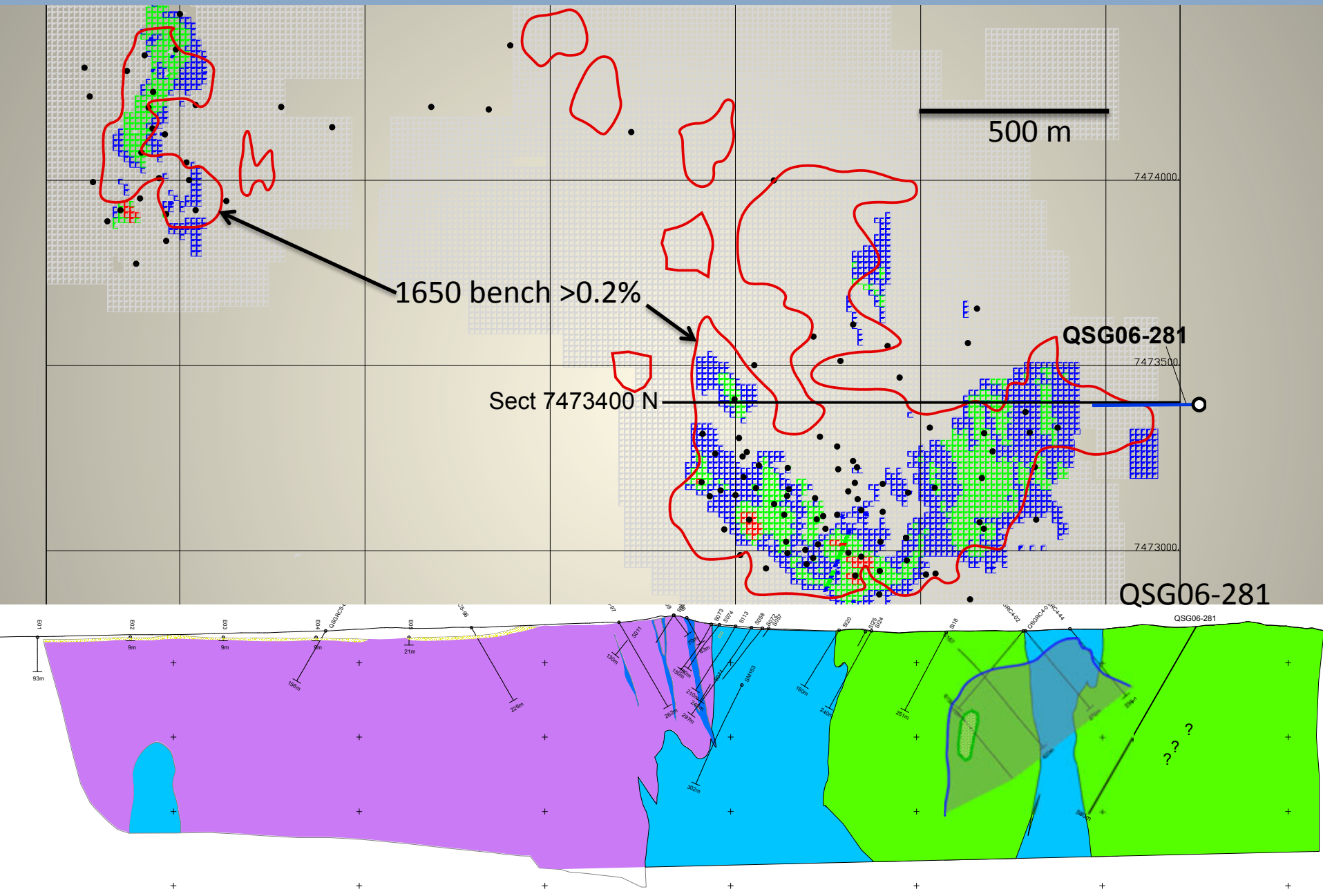
Sierra Gorda-Quadra 2005



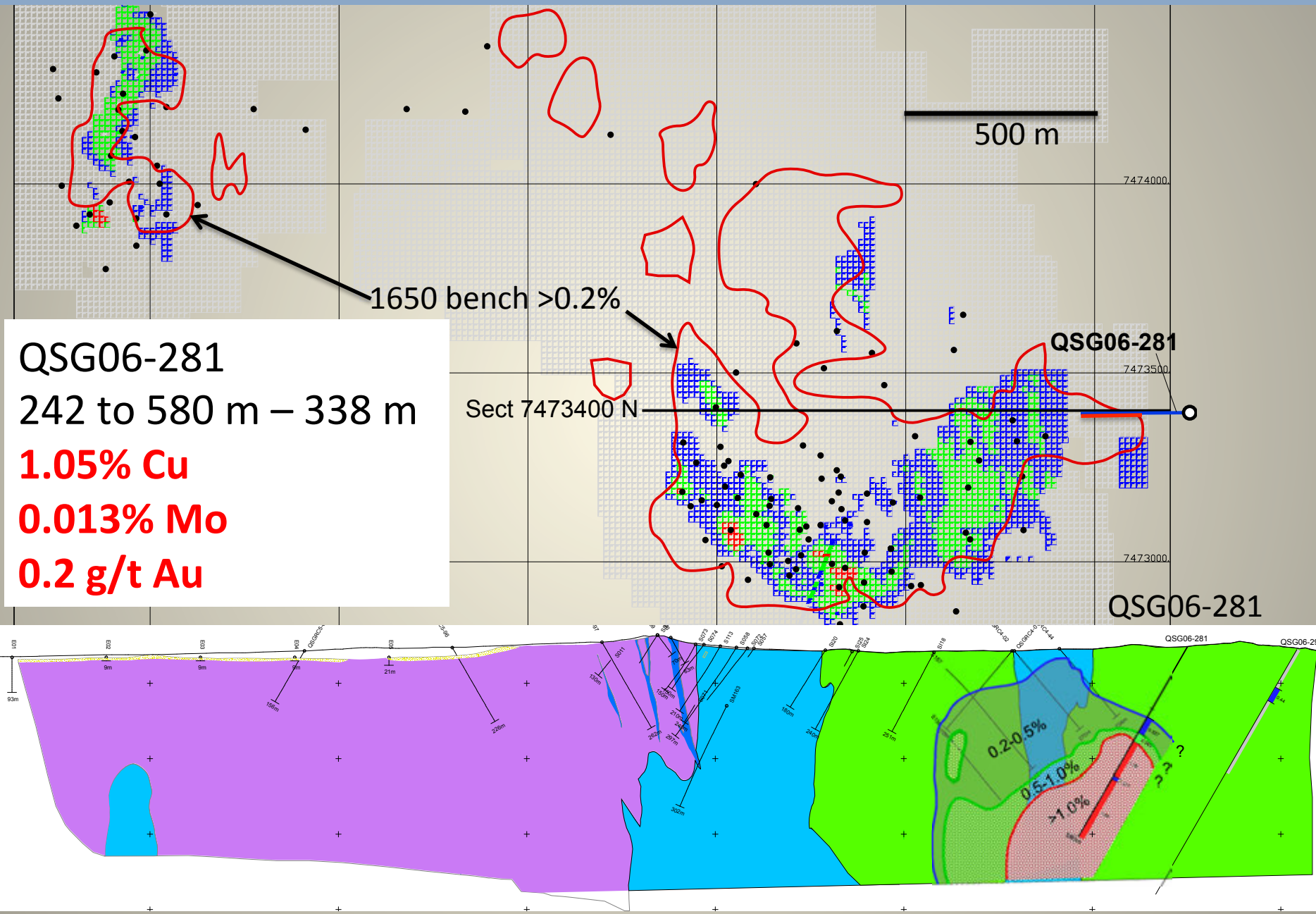
Sierra Gorda - Before Quadra

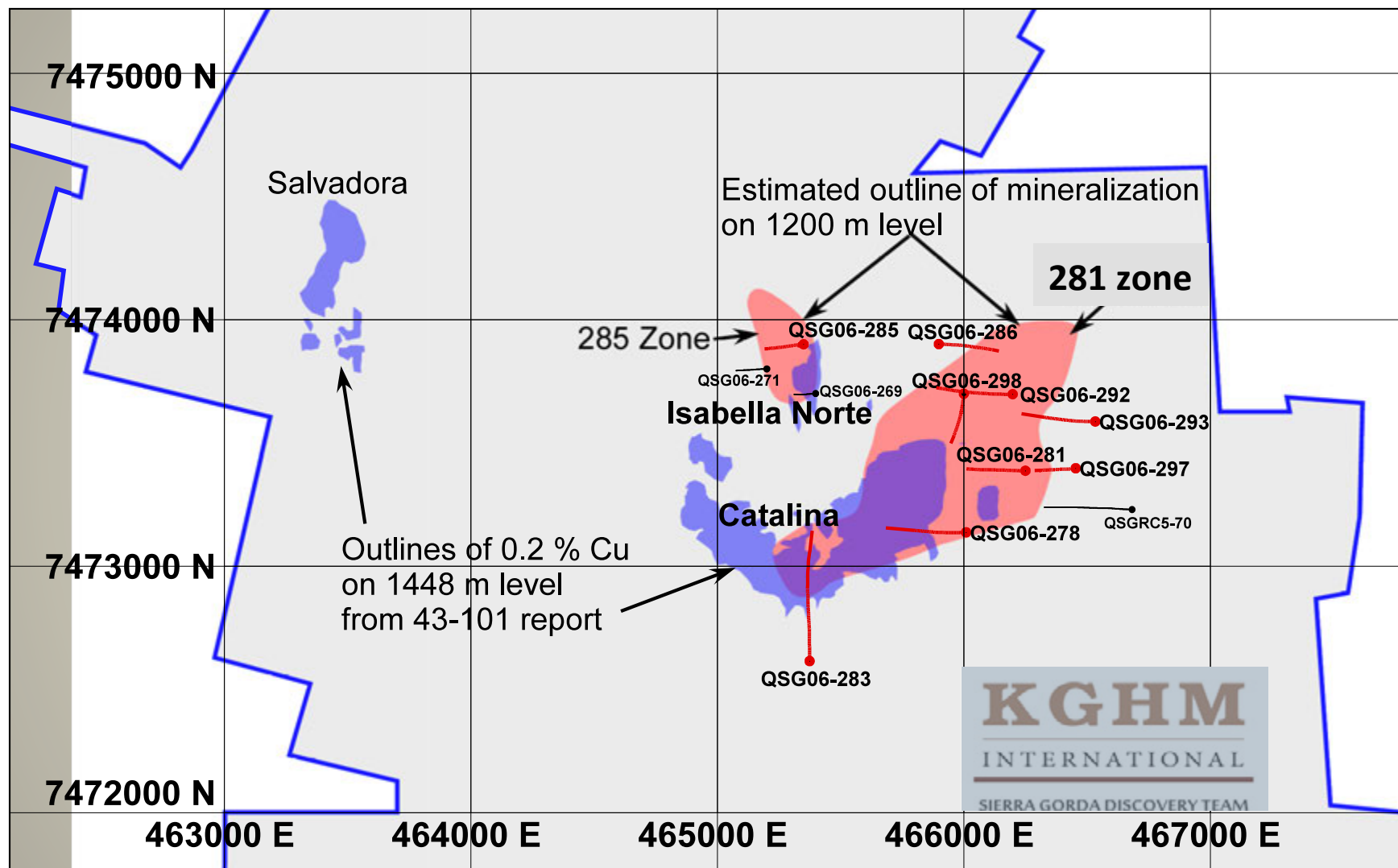


1448 Cu Bench >0.2 % Cu



1448 Cu Bench >0.2 % Cu





Sierra Gorda Project Region II, Chile
2006 Drill Program

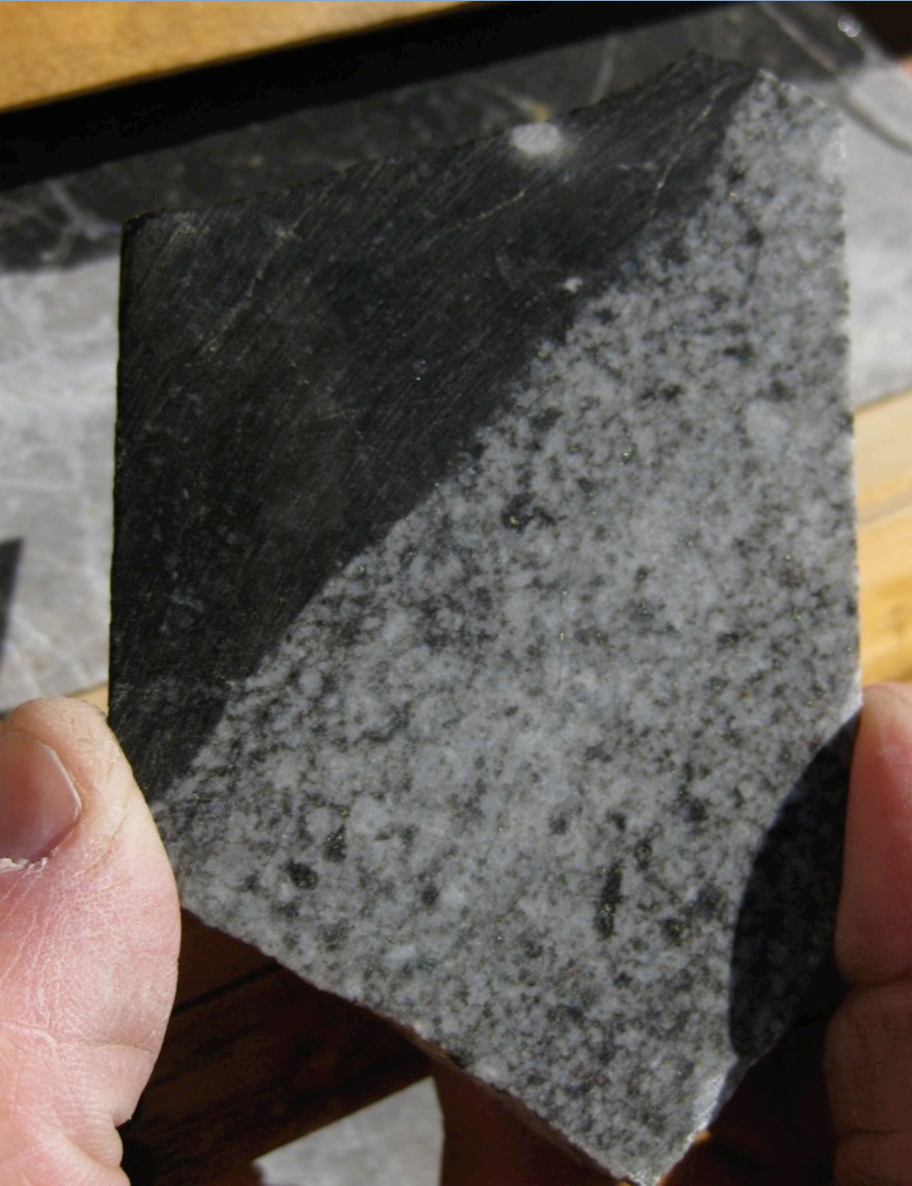
Sierra Gorda

2007-2008



Sierra Gorda

What Worked and Why



What Worked and Why: Geology

“Ore deposits are rocks.”
Eric S. Cheney



What Worked and Why: Geologic Team



Luis

Jaime Diaz

Hector Araya

Greg McKelvey

Steve Shaver

Jack Currie

Valdebenedito

Julio Rivera

Jorge Maya

Unknown

Josh Coder

Scott Manske

What Worked and Why: Management

- Bill Mykatyn-CEO
- Paul Blythe-President
- Jack Miller-COO
- Derek White-CFO
- Russell Alley-President, Minera Quadra Ltda.

What Worked and Why:



Regional
Geology/
Project Data
Base

What Worked and Why:

Aggressive Drilling and Quick Followup

“Go big or go home.”

Jack Currie, Project Manager – when he submitted a 2006 budget for \$12 million (we got \$4 million)

“Hmmpf”

Jorge Maya, Chief Geologist – when I told him he could only have 250 meters for hole 281

“Hasta bornita o magma.” (Until bornite or magma)

Jaime Diaz, Senior Geologist, when I asked how deep we should drill after DH 281

“Go metric, it’s much easier to propose a 900 m drill hole without a quaver in your voice than to ask for a 3000 footer.”

Pat Fahey, VP, Exploration

What Worked and Why: Luck

"If you have your choice between being smart or being lucky – take luck – it's way ahead every time."

Stewart R. Wallace, 1974 Jackling Award Lecture

"The Henderson Ore Body-Elements of Discovery, Reflections"



THE MOST Critical Factor: People



“Where oil is first found, in the final analysis, is in the minds of men.”

Wallace Pratt, 1951...

The Point of Cheney “Fest”

People - Mentors

~~“Where oil Ore is first found, in the final analysis, is in the minds of men and women.”~~

“Ore is found in the minds of men and women.”

As clarified and clipped by a hypothetical E.S. Cheney edit...

Thanks Eric, for instilling the skills and passion for geology and discovery into students through a long and worthy career.

END