

# SUSTAINABLE EXPLORATION

The role and interplay between geological insight, technology & practise in successful exploration

**Graham Brown Group Head of Geosciences** 





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#### **INDUSTRY CHALLENGES**

## **Discovery**

- Finding fewer Tier 1 deposits
- Increasing depths & declining grades
- Longer & costlier lead time

## **Soverign Risk**

- New geographies, challenging orebodies
- Resource nationalism
- Increasing taxes & royalties

## **Licence to Operate**

- Access to land, resources and talent
- Partnerships and permitting

## **New Players**

- Increasing competition, non traditional
- SOE's, National Champions





#### STRATEGIC DRIVERS

**Depletion Replacement** 

**Business Growth** 

**Upgrade of Assets** 

Risk Mitigation by Diversification

Role of exploration in new business development varies by commodity:

**Platinum** 

Protection of tenure and markets

Diamonds

Anti-trust limits acquisition

**Exploration** 

## Acquisition

**Bulk Commodities (Coal, Iron Ore)** 

Location of deposits largely well known



**Base Metals** 

Assets fully priced; low discovery rate



### **EXPLORATION FRONTIERS**

## **Geography Frontiers**

Assessing country risk and prospectivity

#### **Science Frontiers**

Applying new models and methods

#### **Technical Frontiers**

Innovative tools and technologies

#### **Social Frontiers**

Maintaining licence to operate









#### **EXPLORATION HORIZONS**

#### **Value Creation**

- Advancing exploration frontiers
- Greenfields exploration discovery
- Breakthrough R & D

## **Value Recognition**

- New projects & emerging business
- Progress project pipeline
- Identify BD opportunities

#### Value Add

- Accelerate near mine projects
- Focus on resource additions
- Provide development options





#### ANGLO AMERICAN EXPLORATION AT A GLANCE

- Global footprint, intelligence networks and partnerships
- Discovery track-record and operating experience in key exploration frontiers
- Exploring for world class assets in the most attractive commodities
- A major differentiator contributing to future growth, project pipeline and value-creation
- In 2011 \$121 million exploration spend across 16 countries
- Active in operating regions Africa, Asia, Australia, Europe, North and South America
- Safety, Sustainability and Responsibility embedded in everything we do





#### **DELIVERING VALUE**

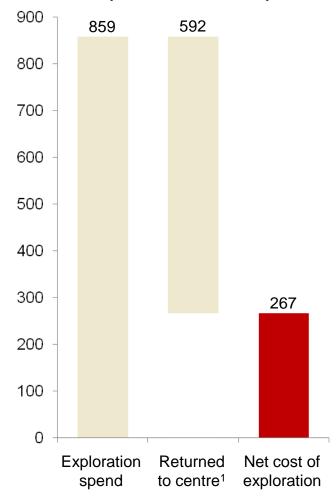
#### 1999 - 2010

- \$859m spend, \$592m returned<sup>1</sup>
- 55% Cu, 27% Ni, 18% Zn
- 48% Greenfield, 52% Advanced & Near Mine

#### **Resources Delivered**

- Greenfield: 4Mt Cu, 4Mt Ni
- Brownfield: 36Mt Cu,10Mt Phosphate (P<sub>2</sub>O<sub>5</sub>), 0.1Mt Niobium (Nb<sub>2</sub>O<sub>5</sub>)
- Including two Tier 1 discoveries

# Cumulative amounts (US\$m, 1999-2010)





#### **DELIVERING QUALITY**

## **Decade of Discovery – Proven Track Record**

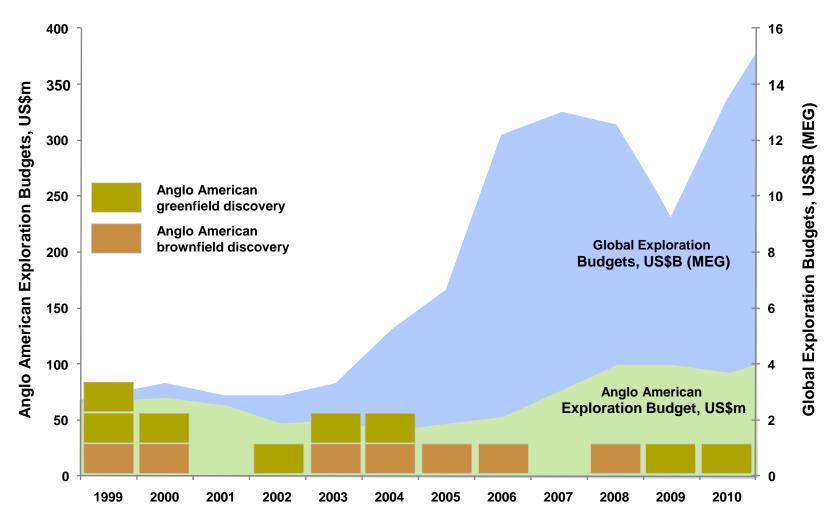
- 15 discoveries: 8 greenfield, 7 brownfield
- Resource discovery and acquisition cost in lower quartile of industry benchmarks
- International Exploration Awards: Los Sulfatos (PDAC), Sakatti (FEM)

## **Decade of Delivery – Quality Resources**

- Resources: 40 million tonnes copper, 4 million tonnes nickel, 4 million tonnes zinc
- Resource quality, grade, size and contained metal in top quartile of industry benchmarks
- Recognised as most successful Major base metals exploration team (MEG)



### **FUNDING THROUGH CYCLES**





## **ANDES: LOS SULFATOS (PDAC 2011 Award)**

- Located 8km SSE of Los Bronces, Chile
- Drilling in 1960s and 1990s identified potential
- Short field season and high altitude
- Field activities re-initiated in 2004
- Helicopter-supported programmes (2005-2008)
- Inferred mineral resource 1,200Mt @ 1.46% Cu, 0.02% Mo within 1% Cu envelope
- Potential mineral resource 4,000-5,000Mt @ 0.8-1.0% Cu within 0.5%Cu envelope
- Tier 1 porphyry Cu-Mo deposit
- 8km exploration tunnel completed Nov 2011
- World-class mining district





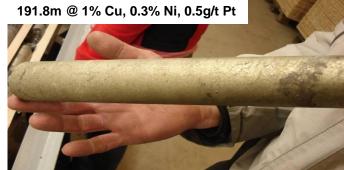




## **ARCTIC: SAKATTI (FEM 2011 Award)**

- Located in Lapland Greenstone Belt, Finland
- Programme initiated in 2004
- Significant grassroots discovery
- Discovery drill hole 2009: 110m @ 1.3% Cu,
  0.2% Ni, 0.5g/t Pt, 0.3g/t Pd, 0.4g/t Au
- Massive, disseminated and vein style sulphides
- Conventional exploration methods
- Deposit is blind
- 1.5km x 0.5km, plunging to NW
- Open at depth
- District potential









## No. 1 ranked Explorer (MEG<sup>1 2</sup>)

- Copper:
  - Los Sulfatos
  - San Enrique Monolito
  - Lagunillas
- Nickel
  - Jacaré
  - Morro sem Boné
- Recent Discoveries
  - Sakatti
  - West Wall Norte





#### SUSTAINABLE EXPLORATION

## **Advancing Frontiers**

- Geography
- Science
- Technical
- Social

## Maintaining our licence to operate

Access to land, talent and resources

## **Providing options for growth**

- Proven discovery track-record
- Quality organic project pipeline
- Delivering resources





#### **LESSONS LEARNED**

- Successful exploration & discovery are people driven and a team effort
- Consistent funding through the cycles
- Innovative thinking & technologies
- Continuous support from senior management
- Hunting pack exploration teams
- Persistence
- Focus on quality
- Correct balance of lower risk brownfields and higher risk greenfields
- Finding new ore deposits provides options for growth
- Continual review of information





