



# Excelsior

MINING CORP

TSX: **MIN**  
Frankfurt: **3XS**  
OTCQX: **EXMGF**

**Arizona's Copper Solution Company**

January, 2019

[www.excelsiormining.com](http://www.excelsiormining.com)

# Disclaimers



**Special Note Regarding Forward-Looking Information:** This presentation contains "forward-looking information" concerning anticipated developments and events that may occur in the future. Forward looking information contained in this presentation includes, but is not limited to, statements with respect to: (i) the estimation of mineral resources and mineral reserves; (ii) the robust economics, potential returns associated with the Gunnison Project, (iii) the technical viability of the Gunnison Project; (iv) the market and future price of copper; (v) expected infrastructure requirements; (vi) the results of the PFS including statements about future production, future operating and capital costs, the projected IRR, NPV, payback period, construction timelines, permit timelines and production timelines for the Gunnison Project; (vii) the timeline for a feasibility study; (viii) future exploration potential; (ix) the permitting process and permitting risk; and (x) the ability to mine the Gunnison Project using in-situ recovery mining techniques.

In certain cases, forward-looking information can be identified by the use of words such as "plans", "expects" or "does not expect", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will be taken", "occur" or "be achieved" suggesting future outcomes, or other expectations, beliefs, plans, objectives, assumptions, intentions or statements about future events or performance. Forward-looking information contained in this presentation is based on certain factors and assumptions regarding, among other things, the estimation of mineral resources and mineral reserves, the realization of resource and reserve estimates, copper and other metal prices, the timing and amount of future exploration and development expenditures, the estimation of initial and sustaining capital requirements, the estimation of labour and operating costs, the availability of necessary financing and materials to continue to explore and develop the Gunnison Project in the short and long-term, the progress of exploration and development activities, the receipt of necessary regulatory approvals, the completion of the permitting process, the estimation of insurance coverage, and assumptions with respect to currency fluctuations, environmental risks, title disputes or claims, and other similar matters. While the Company considers these assumptions to be reasonable based on information currently available to it, they may prove to be incorrect.

Forward looking information involves known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the forward-looking information. Such factors include risks inherent in the exploration and development of mineral deposits, including risks relating to changes in project parameters as plans continue to be redefined including the possibility that mining operations may not commence at the Gunnison Project, risks relating to variations in mineral resources and reserves, grade or recovery rates resulting from current exploration and development activities, risks relating to the ability to access infrastructure, risks relating to changes in copper and other commodity prices and the worldwide demand for and supply of copper and related products, risks related to increased competition in the market for copper and related products and in the mining industry generally, risks related to current global financial conditions, uncertainties inherent in the estimation of mineral resources, access and supply risks, reliance on key personnel, operational risks inherent in the conduct of mining activities, including the risk of accidents, labour disputes, increases in capital and operating costs and the risk of delays or increased costs that might be encountered during the development process, regulatory risks, including risks relating to the acquisition of the necessary licenses and permits, financing, capitalization and liquidity risks, including the risk that the financing necessary to fund the exploration and development activities at the Gunnison Project may not be available on satisfactory terms, or at all, risks related to disputes concerning property titles and interest, environmental risks and the additional risks identified in the "Risk Factors" section of the Company's reports and filings with applicable Canadian securities regulators.

Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. Accordingly, readers should not place undue reliance on forward-looking information. The forward-looking information is made as of the date of this presentation. Except as required by applicable securities laws, the Company does not undertake any obligation to publicly update or revise any forward-looking information.

Additional information about the Gunnison Copper Project can be found in the technical report filed on SEDAR at [www.sedar.com](http://www.sedar.com) entitled: "Gunnison Copper Project, NI 43-101 Technical Report, Feasibility Study" dated effective December 17, 2016.

**Qualified Person:** Excelsior's exploration work on the Gunnison Property is supervised by Stephen Twyerould, Fellow of AUSIMM, President and CEO of Excelsior and a Qualified Person as defined by National Instrument 43-101. Mr. Twyerould has reviewed and approved the technical information contained in this presentation.



## The Next New Copper Producer in the United States

- **FULLY PERMITTED**
  - Safe jurisdiction in mining friendly Arizona
- **FULLY FINANCED**
  - Access to over US\$100 million
- **Mine Currently Under Construction**
- **First Copper Production Q4/2019**
- **Ultra-Low Operating Costs**
- **Management has consistent track-record of delivering key milestones**
- **Unhedged & pure exposure to copper...**



Source: Beverly Uranium Mine, Australia

# One-Year Share Performance



TSX: **MIN** / OTCQX: **EXMGF** / FSE: **3XS**



<b>SHARES OUTSTANDING:</b>	<b>238 M</b>
<b>FULLY DILUTED:</b>	<b>254 M</b>
<b>RECENT PRICE</b>	<b>C\$ \$0.82</b>
<b>MARKET CAP</b>	<b>C\$ 195 M</b>
<b>Warrants: 3.5 M @ C\$1.50 exp. 2023</b>	
<b>Total Debt = \$0</b>	
<b>Greenstone Resources</b>	<b>47.7%</b>
<b>Triple Flag</b>	<b>5.8%</b>
<b>Capital Group</b>	<b>5.4%</b>
<b>Management</b>	<b>4.3%</b>
<b>Altius</b>	<b>1.2%</b>

# Why Own Excelsior Today?

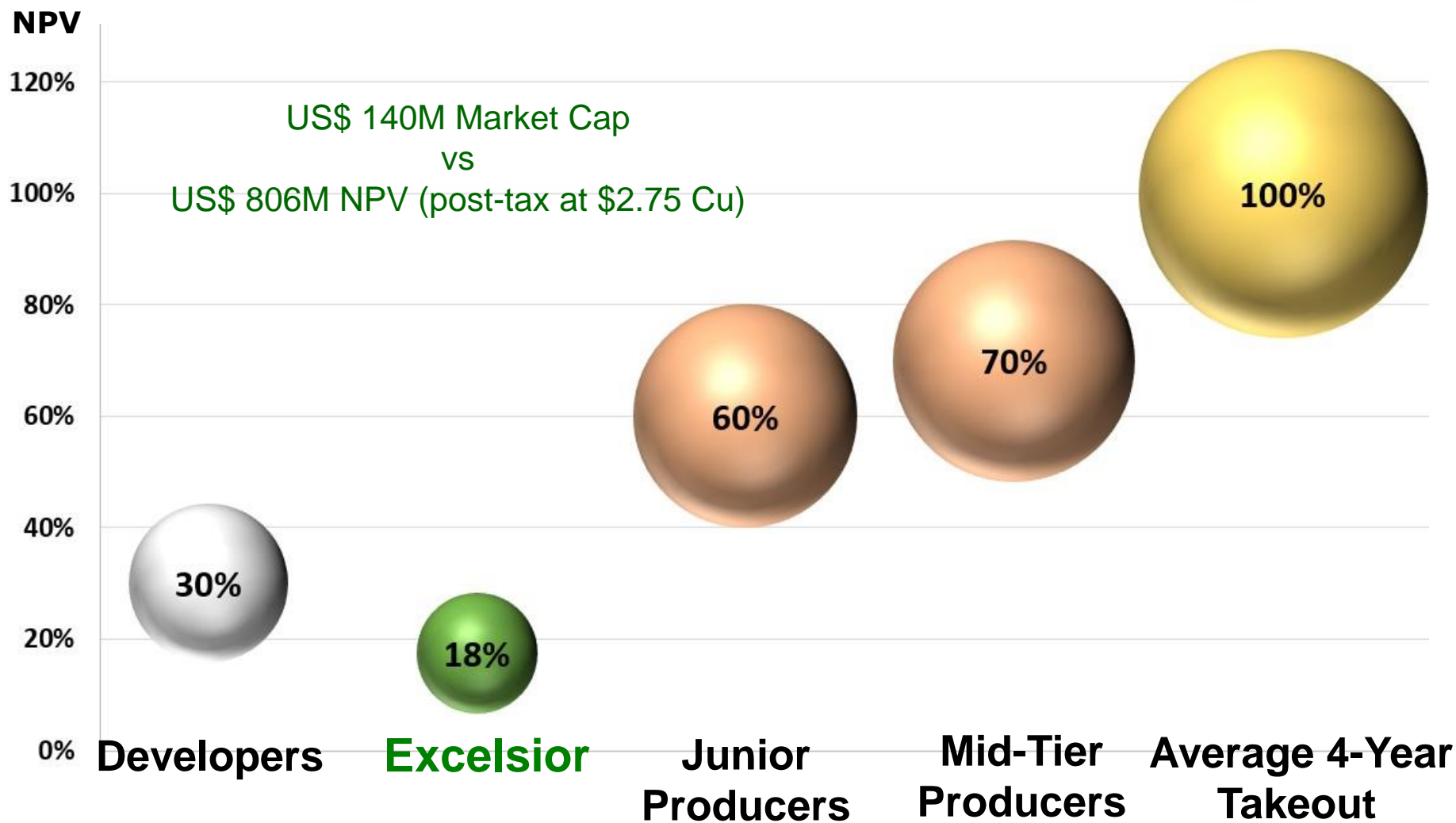


-  Fully Permitted & Fully Financed
-  Under Construction – First Production This Year!
-  Major Base Metal Institutions Backing Excelsior
  - **Triple Flag Mining: US\$ 75 million** (Stream & Equity)
  - **Greenstone Resources: US\$ 58 million** (Equity and Royalty)
  - **Altius Mineral: US\$ 8 million** (Equity & Royalty)

## Value Proposition...

1. Trading at Deep Discount to NPV and Peer Group
2. Re-rating Soon: Development  Production
3. NPV and Cash Flow Leveraged to a Rising Copper Price

# Marketcap to NPV Comparables



\*Based on 12-month average price of representative basket of companies - Source BMO - 2018

## **Stephen Twyerould, *Ph.D.* - President & CEO**

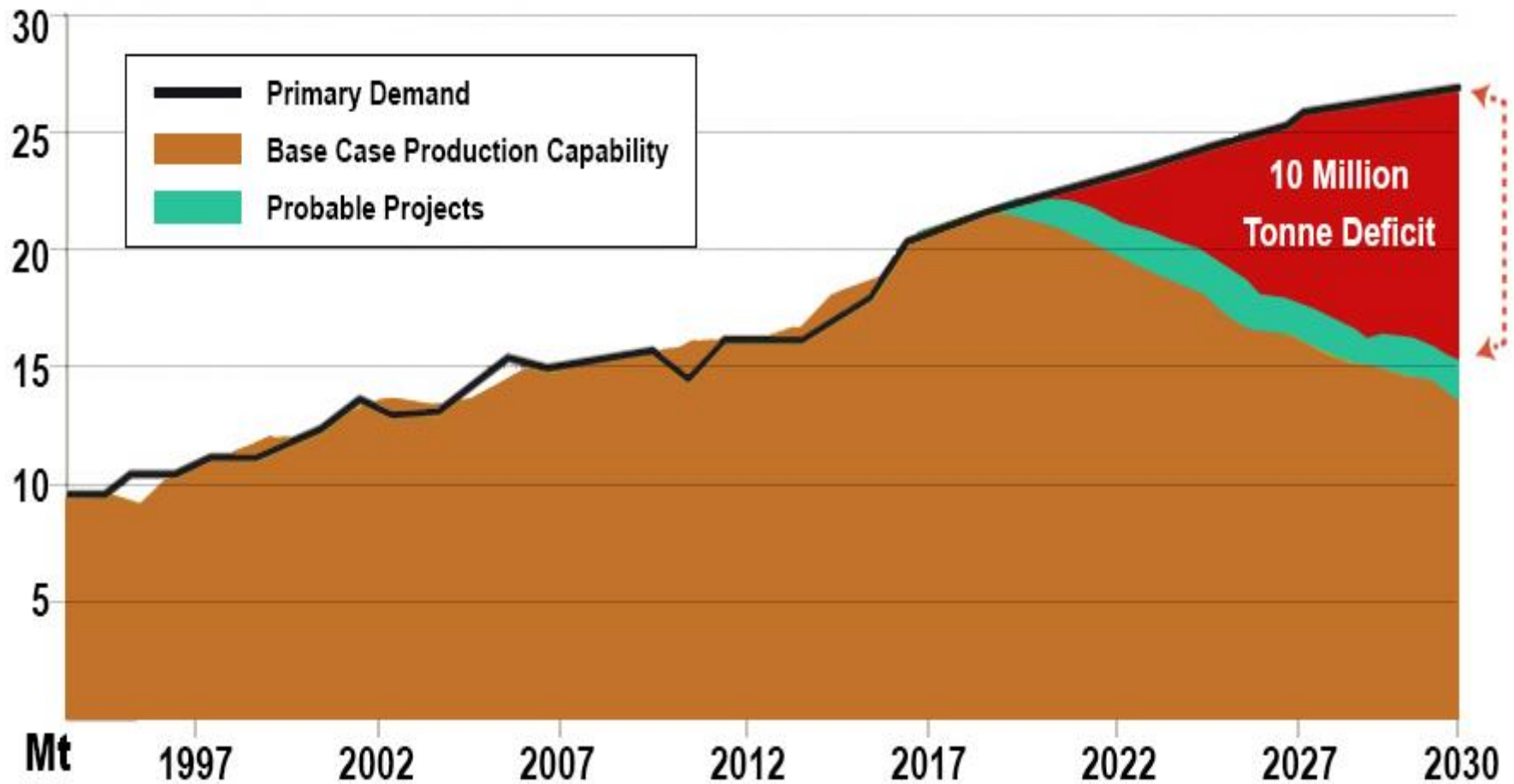
- Over 30 years of mining industry experience.
- Founded Reliance Mining Ltd. – moved from junior explorer to producer in three years (Market cap: US\$5m to US\$100M). Reliance Mining was bought out by Consolidated Minerals.
- Former General Manager Geology/Exploration - Western Mining Corporation (WMC) (now BHP).
- Former Chief Geologist Windarra Nickel & Gold Company.
- Doctorate in Geology and Geochemistry - University of Oregon, 1997.

## **Roland Goodgame, *Ph.D.* - COO**

- Over 30 years of mining industry experience.
- Former Senior Geologist at Anglo American; responsible for global portfolio of nickel projects.
- Former General Manager WMC.
- Doctorate in Geology - University of Oregon, 1997.
- B.Sc. Geological Engineering - Colorado School of Mines, 1987



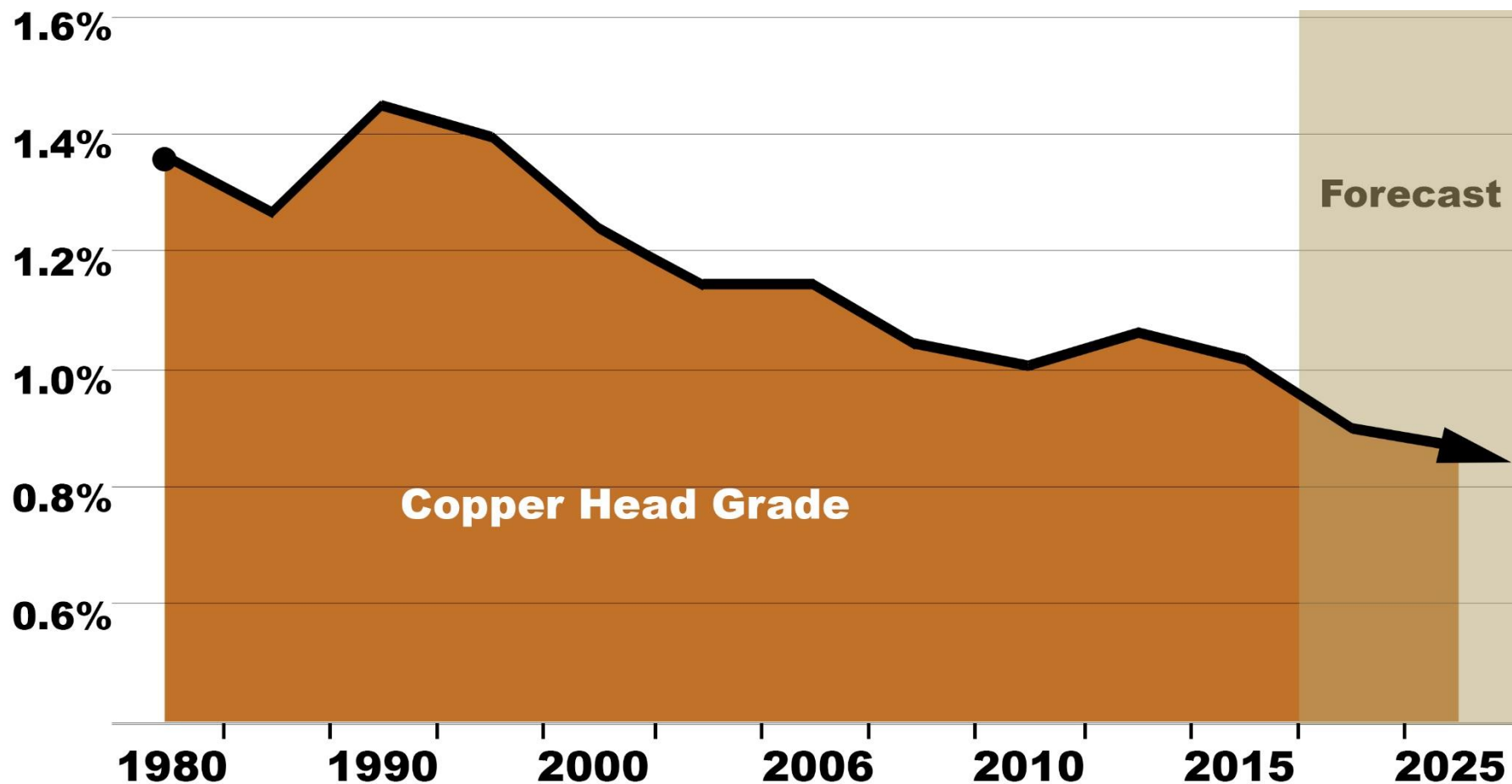
# Copper Supply/Demand Gap



Source: Woods Mackenzie & The Visual Capitalist and International Copper Study Group - 2016



# Declining Copper Head Grades



Source: Woods Mackenzie & The Visual Capitalist - 2016

# In-Situ Recovery (ISR) Advantages

- Lower operating costs (no earth moving)
- Lower capital costs (no mining fleet)
- Flexible mine plan
- Environmentally friendly
  - Low water consumption
  - No groundwater contamination
  - Excellent mine closure
- Minimal noise, dust, and emissions



*Open pit mines fill with ground water that becomes acidic and contaminated. This outcome is not possible with in-situ mining.*



Source: Jamestown Mine, California (above), Nichols Ranch ISR Mine, Wyoming (below)

# ISR Operations Experience

## **Greg Duschek** – *General Manager*

International mining operations manager – most recently Mine Controller at Fort Knox Mine (Kinross) in Alaska.

**Over 65 years of cumulative ISR mining operations experience:**

## **Mike Leuders**- *Wellfield Manager*

35+ years of in-situ mining experience, including 10 wellfield start-ups, 9 wellfield build-outs, and 12 years as a Wellfield Manager.

## **Ronald Grant** - *Wellfield Engineer*

30+ years of experience constructing and managing ISR wellfields.



Source: Beverly Uranium Mine, Australia

# 2016 Feasibility Study Results\*



- **NPV: US\$807 million** (After-tax, US\$2.75 Cu price, 7.5% discount rate)
- **IRR: 40%**
- **\$1.23/lb All-in costs (~ \$0.08 higher with recent financing package)**
- **\$0.65/lb Average life-of-mine operating costs**
- Production start-up with existing 25 million lbs/yr plant (expanding to 125 million lbs/yr)
- Initial capital \$49 million (payback period 2.8 years)
- 24 years of commercial production

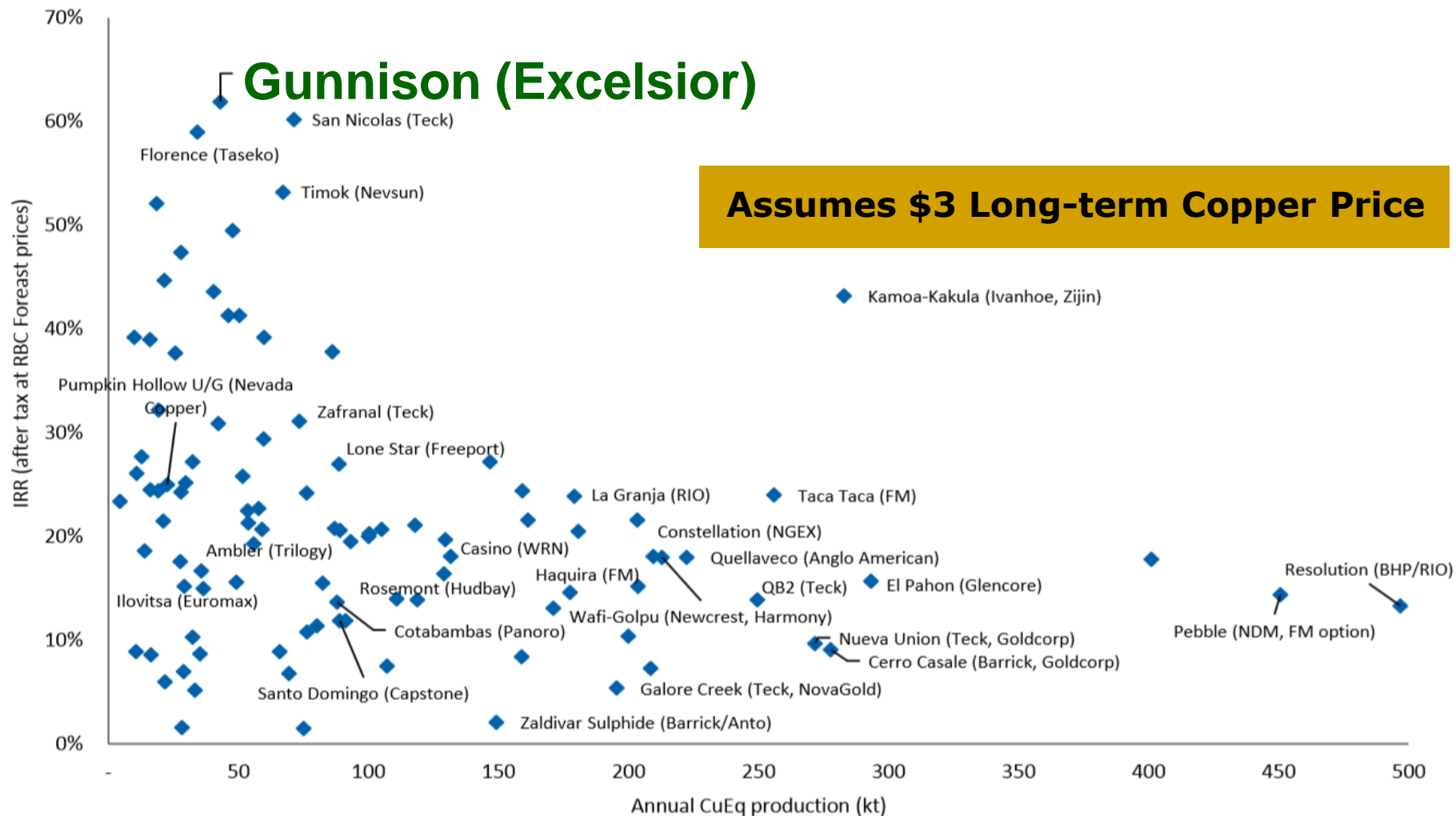
## Sensitivity Analysis (US\$ after-tax)

Cu Price \$/lb (\$/tonne)	\$3.25 (\$7,159)	\$2.75 (\$6,058)	\$2.25 (\$4956)
IRR	51%	40%	29%
NPV	\$1,086	\$807	\$522

\*Results of the Feasibility Study are in USD using the "Acid Plant" option. Prepared by M3 Engineering, Tucson, AZ



# Comparative IRR (Royal Bank of Canada)



RBC copper forecasts: \$3.25/lb for 2018/19, \$3.50/lb in 2020, \$3.75/lb in 2021/22, \$3.00/lb long term  
Source: RBC Capital Markets estimates, Wood Mackenzie, Company Reports

Source: Royal Bank - 2018

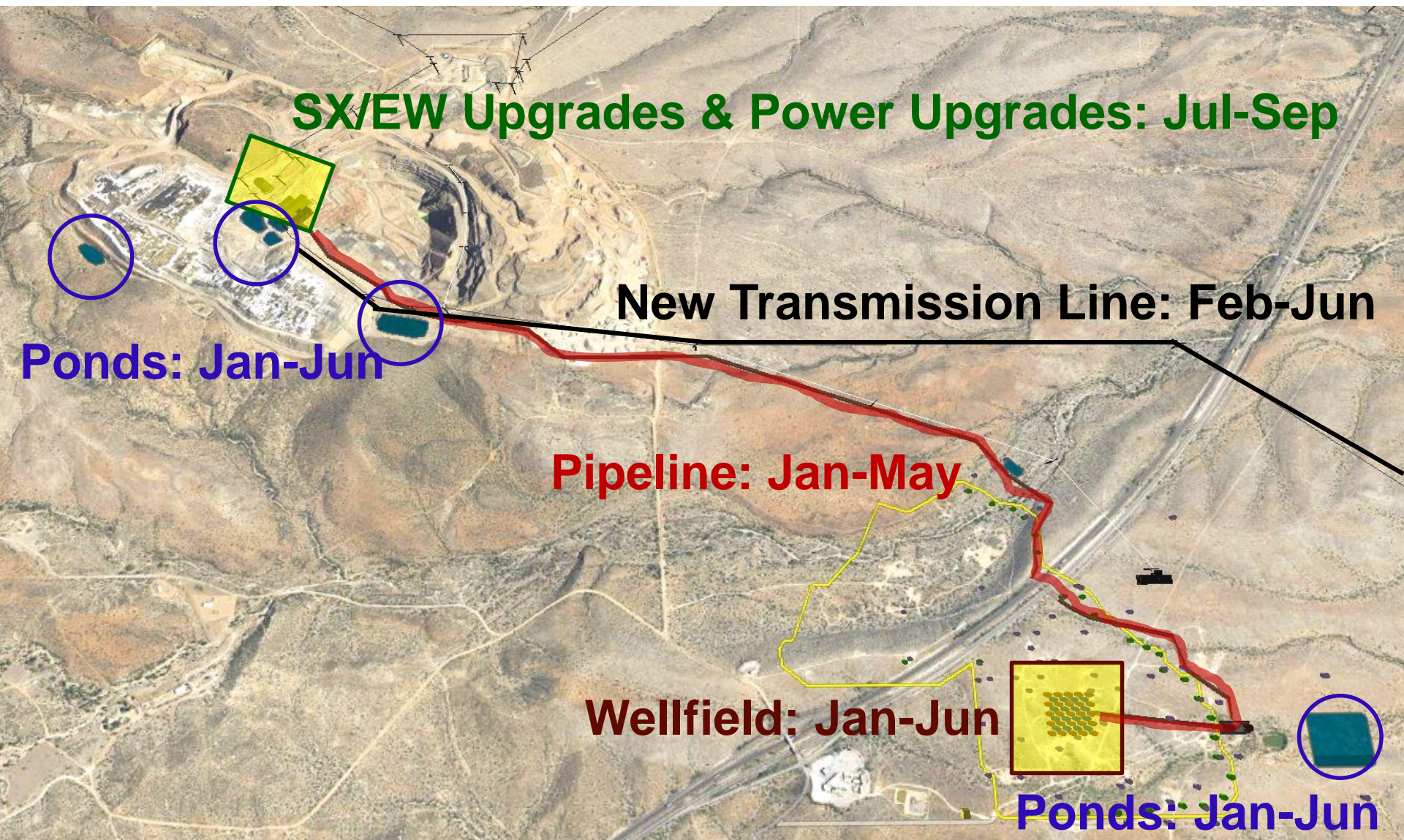
# Mine Construction Underway

- Construction of the wellfield started in December 2018
- 5 drill rigs on site
- The wellfield will total 63 wells:
  - 41 production wells
  - 22 compliance wells
- Wellfield completion scheduled for Q2, 2019
- First production scheduled for Q4, 2019





# 2019 Construction Schedule



# Pathway to Production

WELLFIELD CONSTRUCTION

WELLFIELD PRE-CONDITIONING

PLANT & INFRASTRUCTURE CONSTRUCTION

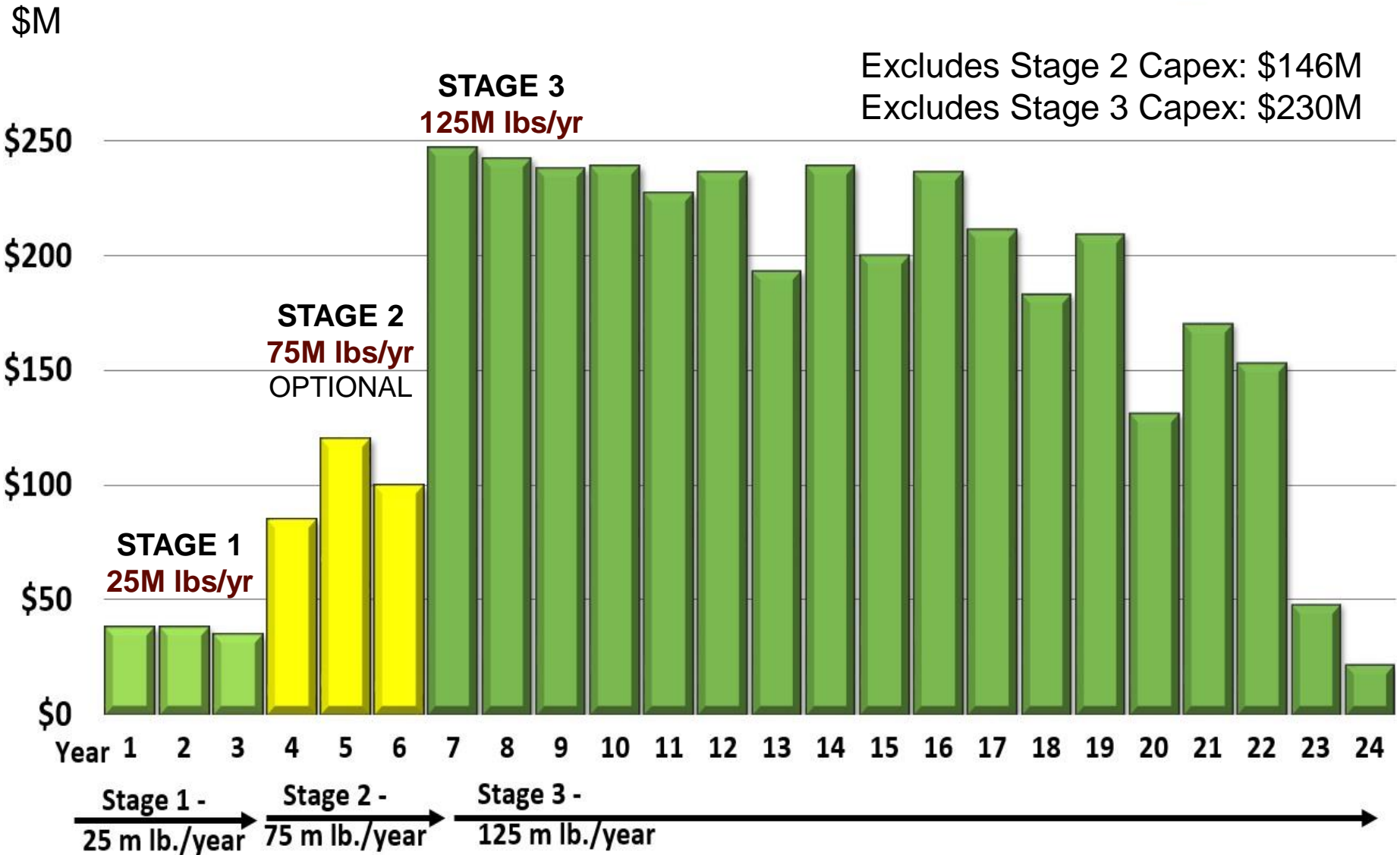
FIRST PRODUCTION





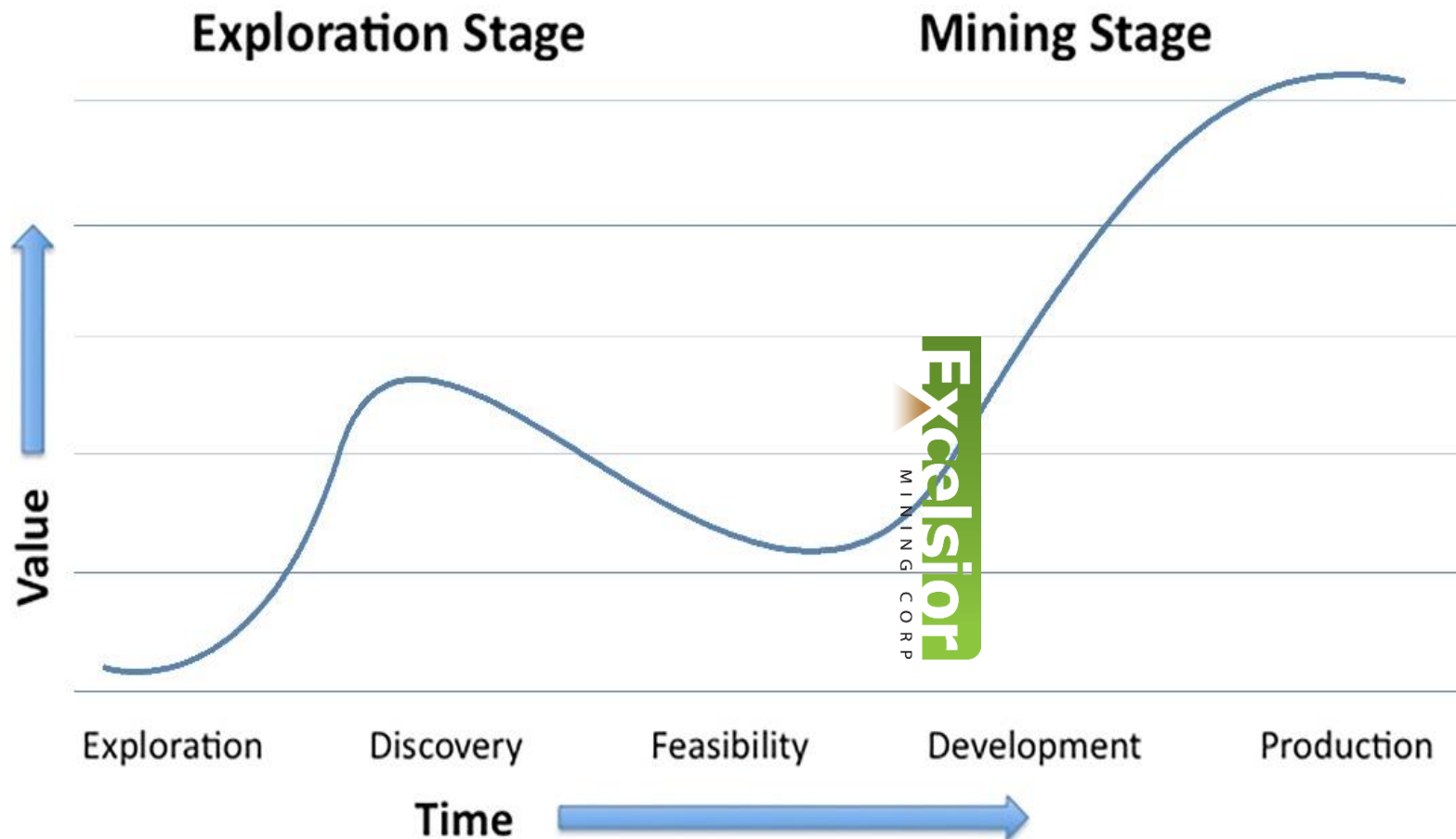
# Free Cash Flow (Based on \$2.75 Cu/lb)

(EBITDA with Sustaining Capital Subtracted)



# Excelsior – The Value Proposition

## Life Cycle of a Deposit



# Unique Requirements for ISR

- Orebody is **naturally broken, fractured and permeable** (no fracking)
- Deposit is **below the water table** (very unusual for Cu oxides)
- Solutions **controlled by differential pumping** pressures
- **Very established mining method**: e.g. Uranium for over 40 years



## Arizona has a positive track record for ISR mining

### San Manuel (BHP/Magma Copper)

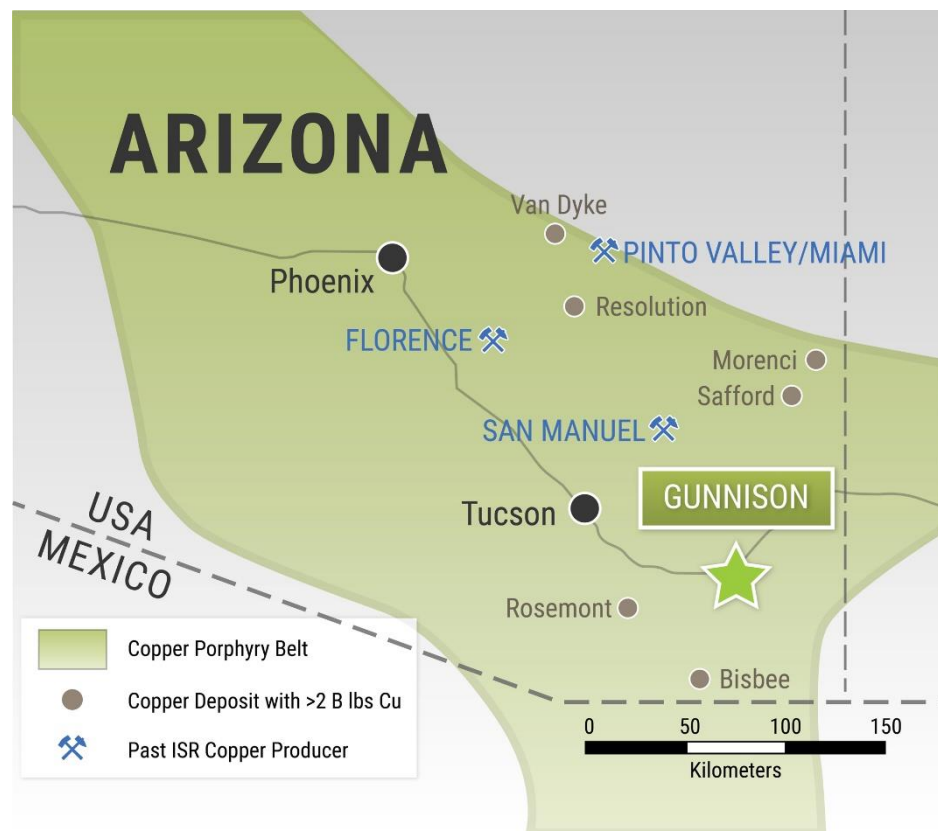
- Historical in-situ mine (+ open pit & U/G)
- 10+ years of production (>1000 wells)
- Produced copper at less than US\$0.40 per lb
- 3.25 billion lbs of Cu (284M tonnes at 0.52%)

### Florence (Taseko, formally Curis Resources)

- Temporary permits have been issued
- 2.84 billion lbs of oxide Cu (429M tons at 0.33% measured & indicated)
- Test facility in operation

### Globe - Miami Unit (BHP/Magma Copper)

- Operations: Miami unit: ISR and SX-EW
- Combined underground and in-situ
- 20+ years of production
- 1.47 billion lbs of Cu (214M tonnes at 0.31%)



*Note: Production from, and mineralization on, these properties is not necessarily indicative of the production from, or mineralization on, the Gunnison Project.*



# Johnson Camp Mine

- Initial production facility is in place and ready to go...
- Acquired in December 2015 for US\$8.4 million
- Just 1.5 miles north of the proposed wellfield



# Why Own Excelsior Today?



-  Fully Permitted & Fully Financed
-  Under Construction – First Production This Year!
-  Major Base Metal Institutions Backing Excelsior
  - **Triple Flag Mining: US\$ 75 million** (Stream & Equity)
  - **Greenstone Resources: US\$ 58 million** (Equity and Royalty)
  - **Altius Mineral: US\$ 8 million** (Equity & Royalty)

## Value Proposition...

1. Trading at Deep Discount to NPV and Peer Group
2. Re-rating Soon: Development  Production
3. NPV and Cash Flow Leveraged to a Rising Copper Price



## **Head Office**

Concord Place

Suite 300

2999 North 44th Street

Phoenix, AZ

USA, 85018

[www.excelsiormining.com](http://www.excelsiormining.com)

## **Investor Relations**

[info@excelsiormining.com](mailto:info@excelsiormining.com)

## **JJ Jennex**

VP Corporate Affairs

[jjennex@excelsiormining.com](mailto:jjennex@excelsiormining.com)

604 723 1433

12<sup>th</sup> Floor - 1140 West Pender Street

Vancouver, BC



# Appendix



# Large Deposit – Excellent Infrastructure

- 2.5 hour drive SE of Phoenix; 65 miles SE of Tucson
- Mining district with direct access to major road, rail, power and water infrastructure
- 9,560 acres (3,868 ha)

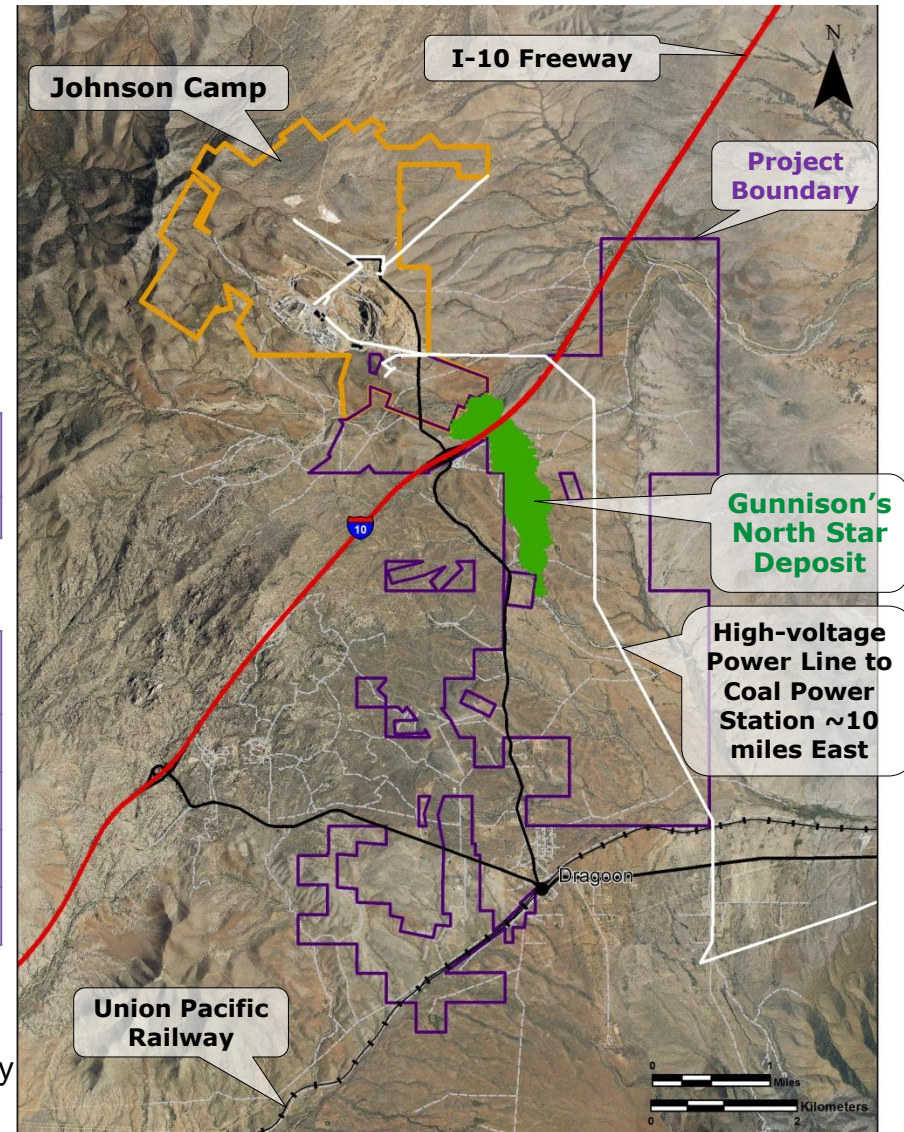
## North Star Mineral Reserves

	Short Tons (millions)	Total Copper %	Pounds of Cu (billions)
<b>Probable</b>	<b>782</b>	<b>0.29</b>	<b>4.5</b>

## North Star Mineral Resources (as of July 7, 2015)

	Short Tons (millions)	Total Copper %	Pounds of Cu (billions)
Measured	199	0.36	1.43
Indicated	674	0.27	3.57
<b>Measured + Indicated</b>	<b>873</b>	<b>0.29</b>	<b>4.99</b>
Inferred	187	0.17	0.63

The Mineral Resources (0.05% cut-off) are inclusive of Mineral Reserves (0.05% cut-off). The oxide and transition portion of the Mineral Reserve has the potential to be mined using in-situ recovery methods with an estimated total copper recovery of 48%.



**Excelsior**  
MINING CORP

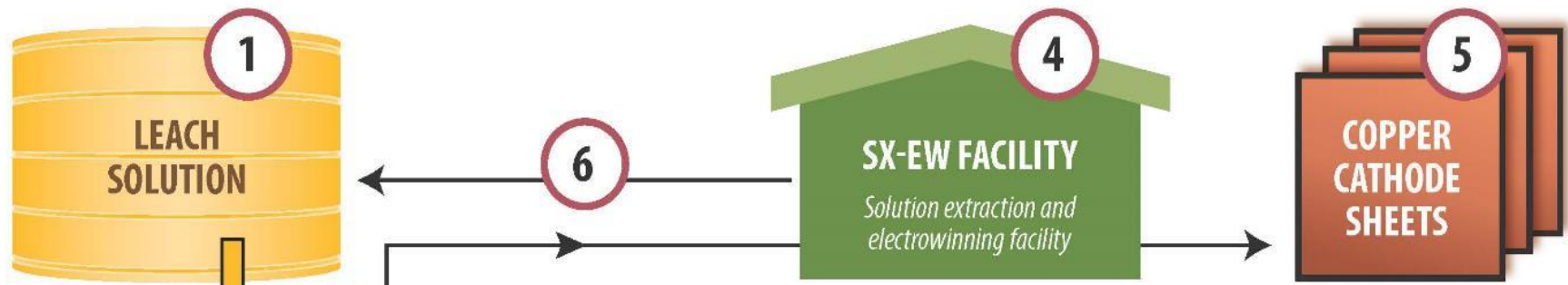


**370m**

26



# Off the Shelf Technology



- 1 Leach solution is delivered into injection wells
- 2 The solution moves in a controlled way through naturally fractured rock
- 3 Extraction wells pump to recover copper-rich solution
- 4 Solution is pumped to the SX-EW Facility
- 5 Copper is extracted from the solution to create pure copper sheets, ready for sale
- 6 Remaining solution is recycled back into the process

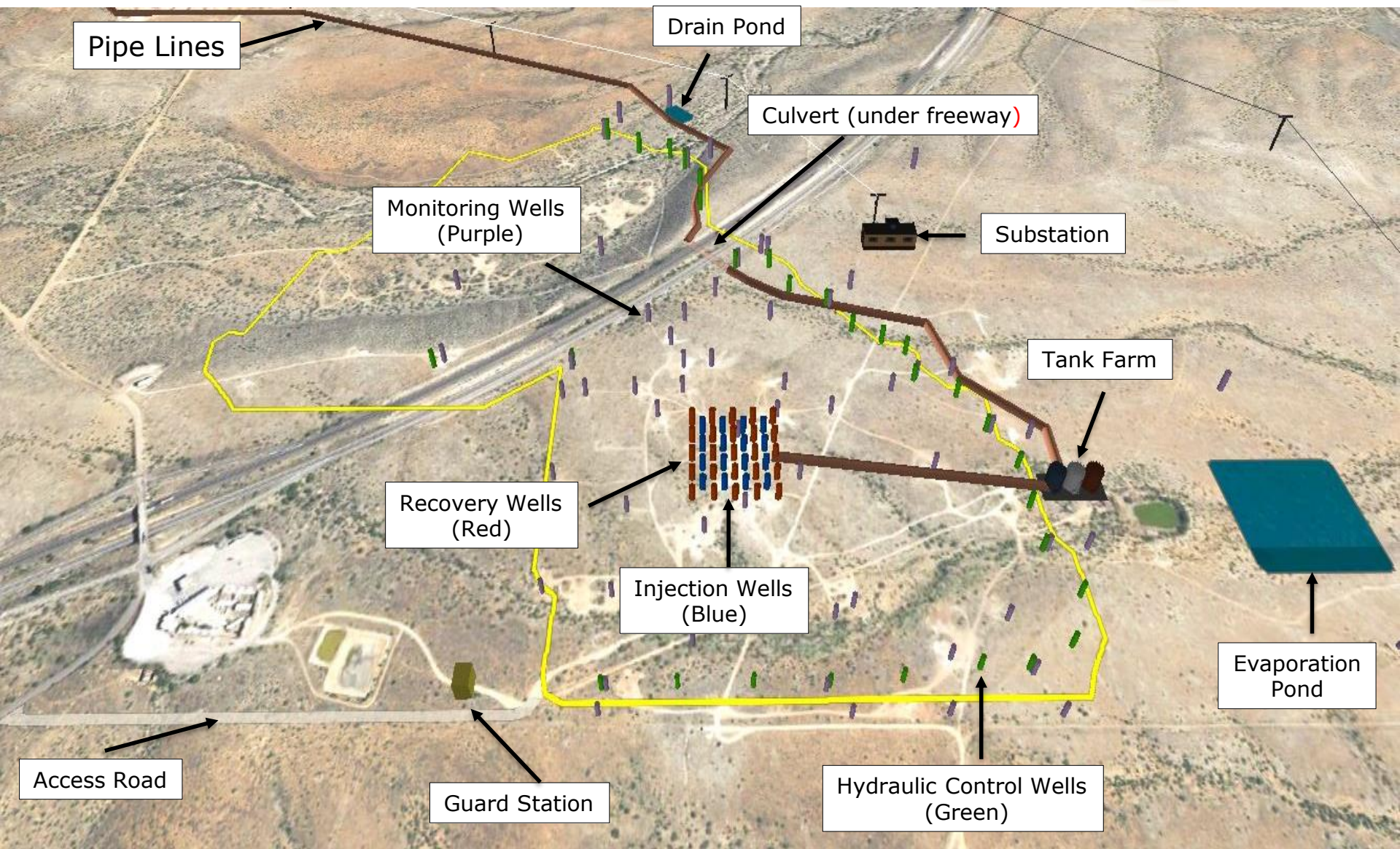
## FEATURES

- proven mining technology
- no blasting, open pit or fracking
- processed solution is recycled
- on-site water recycling
- permitted & regulated by ADEQ & EPA

**ORE ZONE**  
*Naturally fractured rock with oxidized copper deposits*



# Execution Plan - Wellfield



# Board of Directors



## **Mark Morabito, J.D.** - *Chairman of the Board*

Founder of several exploration companies; over 25 years' experience in public markets with a strong focus on junior mining.

Extensive capital markets expertise.

## **Stephen Twyerould, Ph.D.** - *President & CEO, Director*

**Colin Kinley** - Over 26 years of experience as an executive for Christensen Company specializing in engineered drilling and development projects. Currently with Kinley Exploration.

Valuable industry experience.

**Stephen Axcell** - Over 38 years of experience in mining operations and project management execution, including process plant design and construction management.

**Lord Robin Renwick** - Vice Chairman, Investment Banking, JP Morgan Europe; former British Ambassador to South Africa and the United States.

Greenstone Nominees.

**Michael Haworth** - Co-founder of Greenstone Resources. Former Managing Director at JP Morgan and Head of Mining and Metals and Metals Corporate Finance in London.

**Jim Kolbe** - Eleven-term member of the US House of Representatives for Arizona's 8<sup>th</sup> Congressional District.

**Fred DuVal** - Democratic nominee for Governor of Arizona in 2014 and served as Chairman of the Arizona Board of Regents; former Chief of Protocol of the United States and Assistant to President Clinton, and former Political Director for Vice-President Al Gore.

Prominent Arizona Citizens.





## **Head Office**

Concord Place

Suite 300

2999 North 44th Street

Phoenix, AZ

USA, 85018

[www.excelsiormining.com](http://www.excelsiormining.com)

## **Investor Relations**

[info@excelsiormining.com](mailto:info@excelsiormining.com)

## **JJ Jennex**

VP Corporate Affairs

[jjennex@excelsiormining.com](mailto:jjennex@excelsiormining.com)

604 723 1433

12<sup>th</sup> Floor - 1140 West Pender Street

Vancouver, BC