



# Invest in Sustainability

## Cactus Project: Mineral Resource Update Presentation

October 2023



**ARIZONA SONORAN**  
COPPER COMPANY

# Cautionary Information

This presentation (“Presentation”) is being furnished on a confidential basis in order to provide readers certain information with respect to the business and operations of Arizona Sonoran Copper Company Inc. (the “Company” or “ASCU”).

This presentation contains forward-looking information within the meaning of applicable Canadian and United States securities legislation. All information contained in this presentation, other than statements of current and historical fact, is forward-looking information. Often, but not always, forward-looking information can be identified by the use of words such as “plans”, “expects”, “budget”, “guidance”, “scheduled”, “estimates”, “forecasts”, “strategy”, “target”, “intends”, “objective”, “goal”, “understands”, “anticipates” and “believes” (and variations of these or similar words) and statements that certain actions, events or results “may”, “could”, “would”, “should”, “might” “occur” or “be achieved” or “will be taken” (and variations of these or similar expressions). All of the forward-looking information in this presentation is qualified by this cautionary note.

Forward-looking information is not, and cannot be, a guarantee of future results or events. Forward-looking information is based on, among other things, opinions, assumptions, estimates and analyses that, while considered reasonable by the company at the date the forward-looking information is provided, inherently are subject to significant risks, uncertainties, contingencies and other factors that may cause actual results and events to be materially different from those expressed or implied by the forward-looking information. The risks, uncertainties, contingencies and other factors that may cause actual results to differ materially from those expressed or implied by the forward-looking information are described under the heading “Risk Factors” in the ASCU Final prospectus dated November 9, 2021 and filed on SEDAR, and recent financial disclosures. Should one or more risk, uncertainty, contingency or other factor materialize or should any factor or assumption prove incorrect, actual results could vary materially from those expressed or implied in the forward-looking information. Accordingly, you should not place undue reliance on forward-looking information. ASCU does not assume any obligation to update or revise any forward-looking information after the date of this presentation or to explain any material difference between subsequent actual events and any forward-looking information, except as required by applicable law. This presentation contains certain financial measures which are not recognized under IFRS, such as cash cost, sustaining and all-in sustaining cash cost per pound of copper. For a detailed description of each of the non-IFRS financial performance measures used in this presentation, please refer to ASCU’s management’s discussion and analysis for the nine months ended September 30, 2021 available on SEDAR at [www.sedar.com](http://www.sedar.com). All amounts in this presentation are in U.S. dollars unless otherwise noted.

## Technical Information

The scientific and technical information in this Presentation, other than in respect of metallurgy, was prepared under the supervision of Mr. Allan Schappert, Stantec. The scientific and technical information in this Presentation in respect of metallurgy was prepared under the supervision of Dr. Martin Kuhn, MAG. Each of Mr. Allan Schappert and Dr. Martin Kuhn is a Qualified Person as defined by National Instrument 43-101—Standards of Disclosure for Mineral Projects.

The potential quantity and grade presented in the Exploration Target ranges are conceptual and have insufficient exploration and drill density to define a Mineral Resource. At this stage, it is uncertain if further exploration will result in the targets being delineated as a Mineral Resource. Estimates of exploration targets are not Mineral Resources and are too speculative to meet the NI 43-101 reporting standards.

ASCU has conducted extensive exploration work to delineate the exploration target contained in this presentation. This work includes analysis and interpretations from four historical and the two recently drilled core holes into the project, similarities of mineralization intercepted to that of the adjacent Cactus project (for mineralization and alteration characteristics, and grade architecture), and review of geophysical and surface ionic leach programs to support realistic target ranges for extent, thickness, and grade. The Exploration Target ranges assume an underground target for exploration purposes.

## Peers

The comparable information about other issuers was obtained from public sources and has not been verified by the Company. Comparable means information that compares an issuer to other issuers. The information is a summary of certain relevant operational and valuation attributes of certain mining and resource companies and has been included to provide the prospective investor an overview of the performance of what are expected to be comparable issuers. The comparables are considered to be an appropriate basis for comparison with the Company based on their industry, size, operating scale, commodity mix, jurisdiction, capital structure and additional criteria. The comparable issuers face different risks from those applicable to the Company. Investors are cautioned that there are risks inherent in making an investment decision based on the comparables, that past performance is not indicative of future performance and that the performance of the Company may be materially different from the comparable issuers. If the comparables contain a misrepresentation, investors do not have a remedy under securities legislation in any province in Canada. Accordingly, investors are cautioned not to put undue reliance on the comparables in making an investment decision.

# Developing the Next Copper Mine on Private Land in Arizona

To reach the Net Zero emissions goal, 9.7Mt of new copper supply to be added over the next decade. Meaning US\$23B investment per year will be needed over 30 years to deliver new copper projects to reach zero-carbon targets. – Wood Mackenzie, 2023

## High Quality Project

Low-geopolitical risk

Brownfields porphyry copper project, SX/EW

Water and surface rights

Top tier jurisdiction

## Growth-focused

Base-case economics on Cactus and Parks/Salyer

Exploration upside

Primary sulphide optionality

## Experienced Management

A proven track record of delivering successful mining projects

The team takes an environmental and socially conscious approach to project development

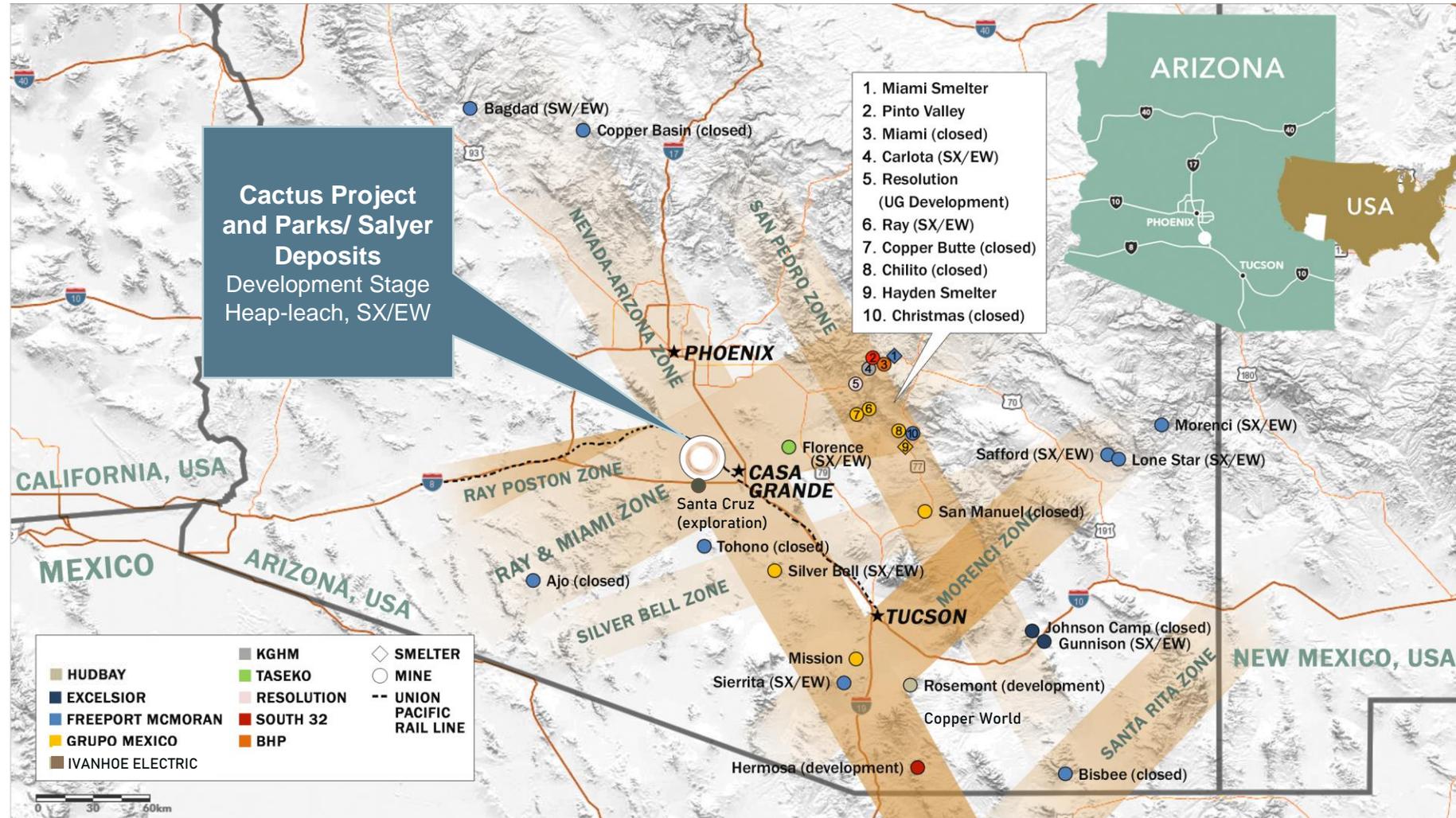


# Location Advantage

5,370 acres on a brownfield property  
+\$30M in place infrastructure

# Low Geopolitical Risk and Community Support

Centrally located for Accessible Infrastructure and Skilled Labour-force



Arizona is the **USA's leading copper-producing state** which accounted for **70%** of domestic output of copper in 2022<sup>(1)</sup>



Arizona ranked **No. 7** for the year 2022 in Fraser Institute's Investment Attractiveness Index<sup>(2)</sup>

Notes: (1) USGS Copper Data Sheet- Mineral Commodity Summaries 2023 (2) Fraser Institute Annual Survey of Mining Companies 2021, available at [www.fraserinstitute.org](http://www.fraserinstitute.org)



# Cactus MRE Update

# A Significant Conversion of Inferred Mineral Resources

Growth attributed to an increase of contained copper with similar grades

## Cactus MRE Additions (klbs)



# MRE Update – First Measured Declaration, Significant Upgrade to Indicated

MRE Update Ahead of PFS in Q1 2024

## CONVERSION

INF ->  
M&I

**384% growth (tons)**  
**316% growth (lbs)**

## CONTAINED METAL

Cu

**5.17 Blbs**  
Measured & Indicated

## SIMILAR GRADES

M&I Cu  
TSol

**1.028%** Parks/Salyer  
**1.057%** Cactus East

	PREVIOUS MINERAL RESOURCE (As at September 28, 2022)			UPDATED MINERAL RESOURCE (As at August 31, 2023)			VARIANCE Contained Pounds
	Tons kt	Grade Cu% <sup>1</sup>	Pounds Cu Mlbs	Tons kt	Grade Cu% <sup>1</sup>	Pounds Cu Mlbs	Cu Content %
<b>Total Measured</b>				<b>10,400</b>	<b>0.241</b>	<b>49.8</b>	
Leachable		N/A		9,100	0.230	41.9	<b>NEW</b>
Primary				1,300	0.315	8.0	
<b>Total Indicated</b>	<b>151,800</b>	<b>0.531</b>	<b>1,610.7</b>	<b>435,300</b>	<b>0.589</b>	<b>5,124.2</b>	<b>+218%</b>
Leachable	73,900	0.723	1,065.2	348,500	0.629	4,387.2	+312%
Primary	77,900	0.350	545.5	86,800	0.425	737.0	+35%
<b>Total M&amp;I</b>	<b>151,800</b>	<b>0.531</b>	<b>1,610.7</b>	<b>445,700</b>	<b>0.580</b>	<b>5,174.0</b>	<b>+221%</b>
Leachable	73,900	0.723	1,065.2	357,600	0.619	4,429.0	+316%
Primary	77,900	0.350	545.5	88,000	0.423	745.0	+37%
<b>Total Inferred</b>	<b>449,900</b>	<b>0.544</b>	<b>4,894.2</b>	<b>233,800</b>	<b>0.472</b>	<b>2,207.9</b>	<b>-55%</b>
Leachable	310,400	0.590	3,663.7	107,700	0.607	1,307.9	-64%
Primary	139,500	0.441	1,230.5	126,200	0.357	900.0	-27%

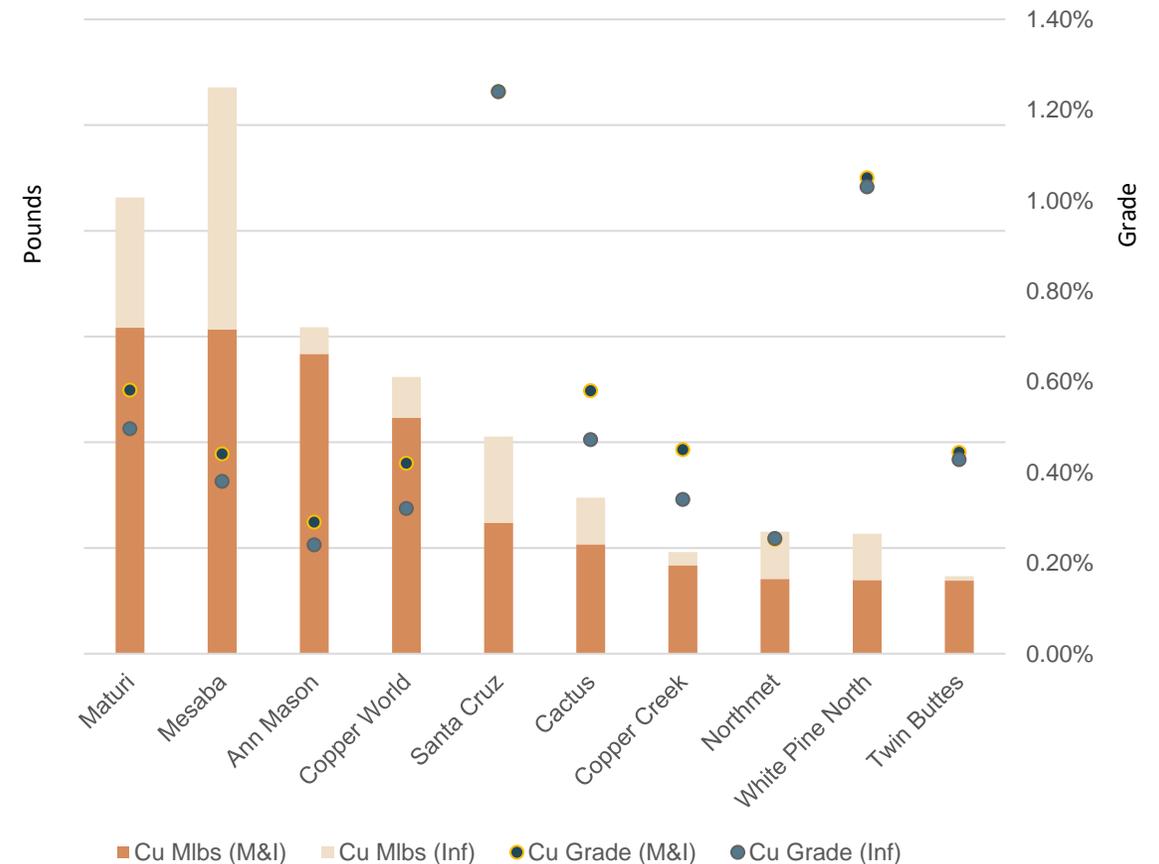
See slide 35, or PR dated October 16, 2023, for full notes and disclosures related to the MRE.

# Few Quality Development Assets in the USA

- Recent MRE strengthened ASCU's position among independent developers and assets owned by major miners
  - MRE grade of 0.58% TCu (M&I) exceeds most current Cu deposits in the US
  - Cactus West – OP layback
  - Cactus East and Parks/Salyer – +1% Soluble copper grades, tentative

Project	Company	M&I		Inf	
		Mlbs	Cu Grade	Mlbs	Cu Grade
Maturi	Antofagasta	15,415	0.58%	6,163	0.50%
Mesaba	Teck / Glencore	15,344	0.44%	11,443	0.38%
Ann Mason	Hudbay	14,183	0.29%	1,254	0.24%
Copper World	Hudbay	11,154	0.42%	1,940	0.32%
Santa Cruz	Ivanhoe Electric	6,196	1.24%	4,072	1.24%
<b>Cactus</b>	<b>Arizona Sonoran</b>	<b>5,174</b>	<b>0.58%</b>	<b>2,208</b>	<b>0.47%</b>
Copper Creek	Faraday Copper	4,184	0.45%	626	0.34%
Northmet	Teck / Glencore	3,538	0.25%	2,240	0.25%
White Pine North	Highland Copper / Kinterra	3,487	1.05%	2,188	1.03%
Twin Buttes	Freeport McMoran	3,456	0.44%	214	0.43%

Significant Copper Assets in the US  
(Sorted by M&I Pounds)



Source: S&P, Removal of Pebble, Resolution and Upper Kobuk Mineral Projects, Sept. 2023



# PFS Base Case

# Emerging Copper Developer in the USA via Heap Leach & SXEW

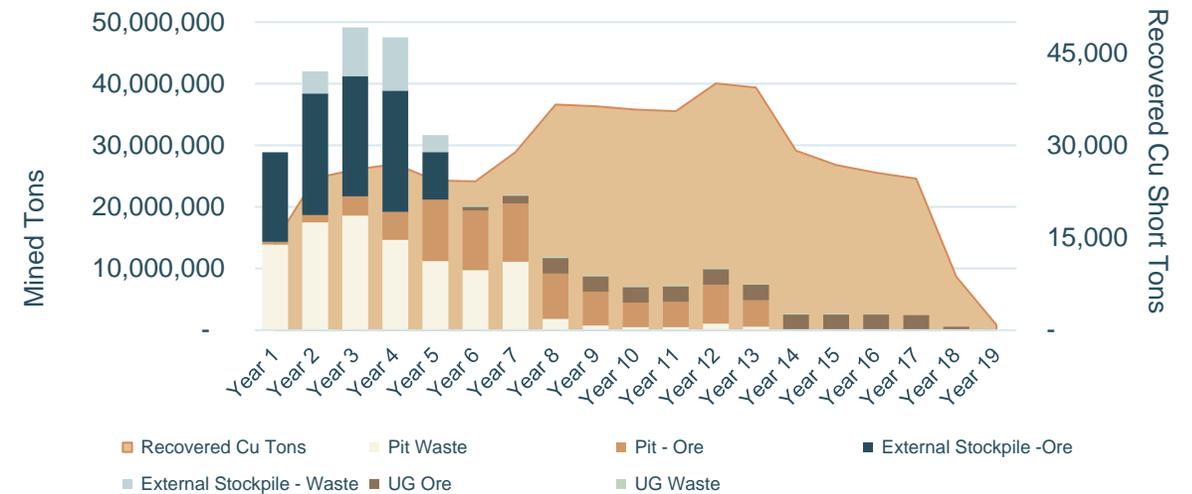
PEA Base Case + Parks/Salyer Oxide and Enriched Material

## 2021 PEA BASE CASE PROJECT METRICS<sup>(1)(2)</sup> Cactus Mine's Oxide and Enriched Material

	Over the Life of Mine
<b>Mine Life</b>	1.27 B lbs of Cu over 18 years
<b>Average Production</b>	28 ktpa (56Mlbs); Peaks at 40 ktpa (80Mlbs) (see production schedule, right)
<b>Operating Costs</b>	<ul style="list-style-type: none"> <li>• US\$9.06/t</li> <li>• US\$1.55/lb</li> <li>• US\$1.88/lb (incl. 3.18% royalty on Cactus)</li> </ul>
<b>Capex</b>	<ul style="list-style-type: none"> <li>• Initial Construction Capex: US\$124M</li> <li>• Sustaining Capex over LOM: US\$340M</li> </ul>
<b>Free Cash Flow (Post tax Undiscounted)(US\$3.35/lb Cu)</b>	<ul style="list-style-type: none"> <li>• US\$960M</li> </ul>
<b>NPV8 Post-Tax</b>	<ul style="list-style-type: none"> <li>• \$312 M</li> </ul>
<b>IRR Post-Tax</b>	<ul style="list-style-type: none"> <li>• 33%</li> </ul>

Step-up PFS layers in Parks/Salyer over the Cactus PEA: Targeting 45-50 ktpa over approximately 30 years

### CACTUS PEA PRODUCTION SCHEDULE<sup>(1)(2)</sup>



Sources/Notes: t or tons = Short Tons. (1) Integrated Cactus PEA, Table 1-6, 1-7 (2) The Integrated Cactus PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorised as mineral reserves and there is no certainty that the preliminary economic assessment will be realized. Mineralized Material Sources: Stockpile, Cactus East, Cactus West, Parks/Salyer

**Low capital intensity project: \$2.20/lb**

US\$CAPEX/LOM average Cu production – per the Cactus PEA

# Benchmarking ASCU to Copper Developers

Similar future production profile to ASCU with a P/NAV of 0.34x

P/NAV: 1.16x

Acquired at a 23% premium<sup>(2)</sup>

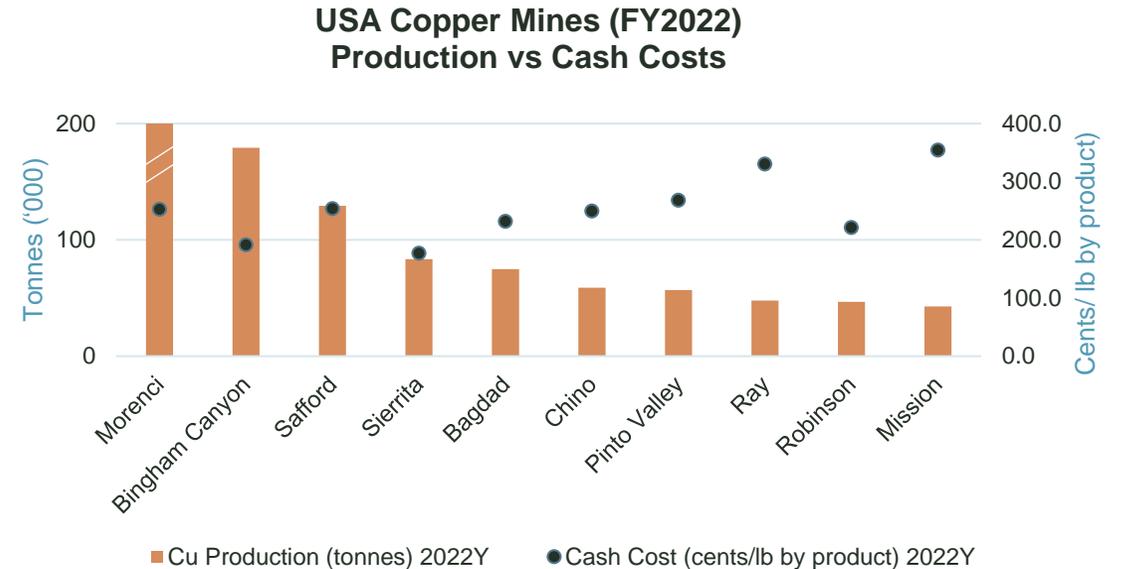
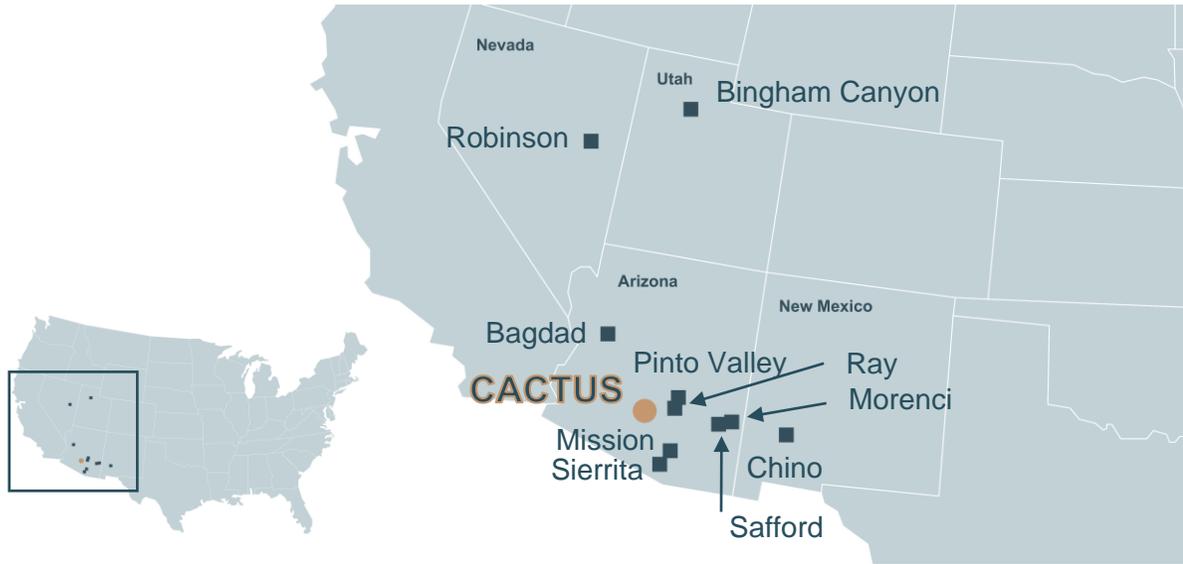
									
Market Capitalization (C\$M)	\$172	\$2,780	\$2,196	\$1,086	\$379	\$319	\$128	\$2,763	\$590 <sup>(2)</sup>
Asset Name	Cactus / Parks Salyer	Filo del Sol	Santa Cruz / Tintic	McIlvenna Bay	Marimaca	Kay	Cu Creek / Contact Cu	Caraiba	Copper Mountain
Economic Study Level	PEA	PFS	IA*	FS	PEA	Historic	PEA	Production	Production
Development Type (Greenfields or Brownfields)	Brownfields	Greenfields	Greenfields	Brownfields	Greenfields	Brownfields	Greenfields	n/a	n/a
Jurisdiction	Arizona	Argentina	Arizona / Utah	Sask.	Chile	Arizona	Arizona	Brazil	BC
Fraser Institute Policy Perception Index (Rating Out of 100)	85	77	85 / 91	91	69	85	85	48	76
Measured & Indicated Attributable Resource (Mlbs CuEq)	5,174	6,161	6,197	2,096	1,984	-	4,456	2,868	7,296
Inferred Attributable Resource (Mlbs CuEq)	2,208	2,552	4,073	337	312	-	669	1,063	2,599
Mine Life (Years)	18	13	20	18	12	-	32	16	31
Annual Attributable LOM Production (Mlbs CuEq Payable)	62	340	175	65	79	-	264	102 <sup>(1)</sup>	64 <sup>(1)</sup>
LOM C1 Cash Cost (US\$/lb CuEq)	\$1.55	\$1.54	1.36	\$1.79	\$1.22	-	\$1.67	\$1.36 <sup>(1)</sup>	\$3.88 <sup>(1)</sup>
Capital Intensity (US\$/lb CuEq)	\$2.20	\$5.30	\$6.55	\$4.47	\$3.61	-	\$3.02	n/a	n/a
Headline After-Tax IRR (%)	33%	20%	23%	22%	34%	-	16%	n/a	n/a
Headline After-Tax NPV (US\$M)	\$312	\$1,310	\$1,317	\$370	\$524	-	\$713	663.7	\$1,245
MRE Copper Price (US\$/lb Cu)	\$3.75	\$3.65	\$3.80	\$3.50	\$3.15	-	\$3.80	\$3.00	\$3.60

Source: S&P Capital IQ, Company Filings. The Integrated Cactus PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves and there is no certainty that the preliminary economic assessment will be realized. Data as of July 26, 2023

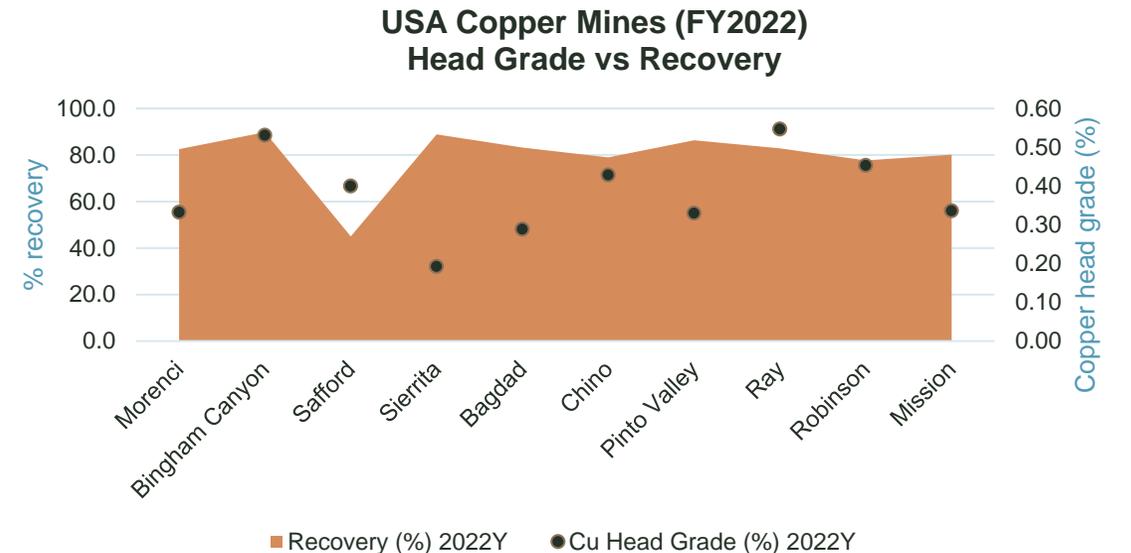
\*IA is an Initial Assessment, compliant with US Securities rules

(1) Figures are 2022 actuals (2) Hubday acquired Copper Mountain at an exchange ratio of 0.381 Hubday shares per Copper Mountain share, representing a US\$439M equity value and a 23% premium based on the April 12, 2023, closing price

# Top 10 USA Copper Mines



	Mine	County and State	Owner	Operation
1	Morenci	Greenlee, Arizona	Freeport-McMoRan (72%), Sumitomo Group (28%)	Open Pit
2	Bingham Canyon	Salt Lake, Utah	Rio Tinto	Long Hole Stoping, Open Pit, Sublevel Stoping
3	Safford	Graham, Arizona	Freeport-McMoRan	Open Pit
4	Sierrita	Pima, Arizona	Freeport-McMoRan	Open Pit
5	Bagdad	Yavapai, Arizona	Freeport-McMoRan	Open Pit
6	Chino	Grant, New Mexico	Freeport-McMoRan	Open Pit
7	Pinto Valley	Gila, Arizona	Capstone Copper.	Dump, Open Pit, Tailings
8	Ray	Pinal, Arizona	Grupo México	Open Pit
9	Robinson	White Pine, Nevada	KGHM Polska Miedz	Open Pit
10	Mission Complex	Pima, Arizona	Grupo México	Open Pit, Underground

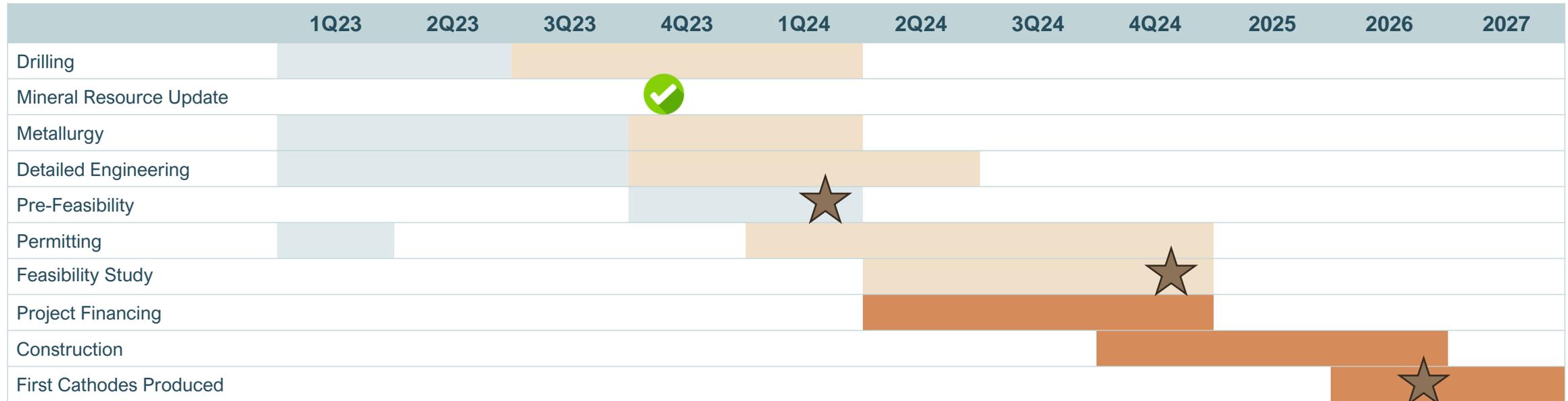


Source: S&P Copper Production in 2022, ranked by tonnes produced. Morenci produced 401kt in 2022.



# Summary

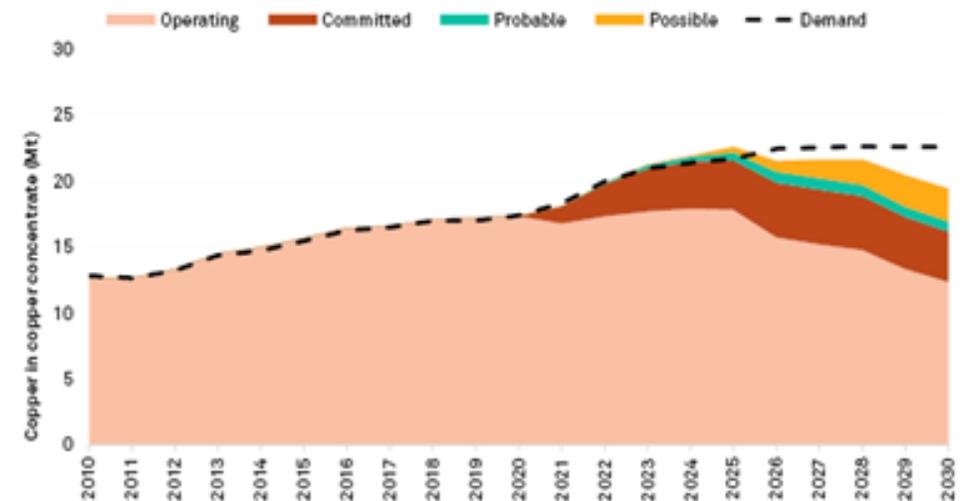
# Targeting First Cathodes in 2026 - Quick Path to Development



■ PFS Work   
 ■ FS Work   
 ■ Pending positive construction decision

## Timing is everything. In 2026:

- ASCU anticipates first cathodes (based on positive construction decision)
- Long-term copper price is predicted to exceed \$4.00 / lb
- Copper supply is set to fall into deficit



Source: S&P

# Key Investment Highlights

A Goal to Provide the US with Locally Sourced Copper



**Brownfield  
Exploration and  
Development  
Project in Tier 1  
Jurisdiction**



**Private  
Landownership =  
State and County  
Led Permitting  
process**



**Proposed Copper  
Heap Leach, SXEW  
Operation<sup>(1)(2)</sup>**



**Building Scalability  
and Growth**



**Experienced  
Leadership Team;  
Strong Supportive  
Sponsors**



**Supportive  
Copper Market  
Fundamentals  
ESG Framework  
in Place, Path to  
Net Zero**

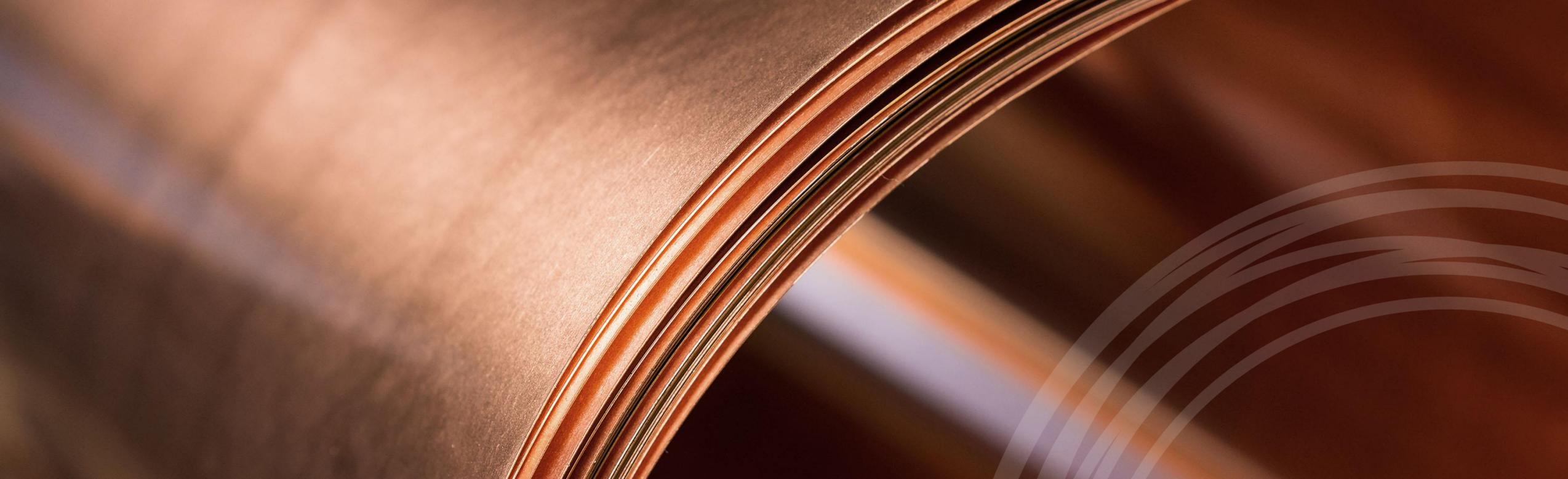


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# Appendix

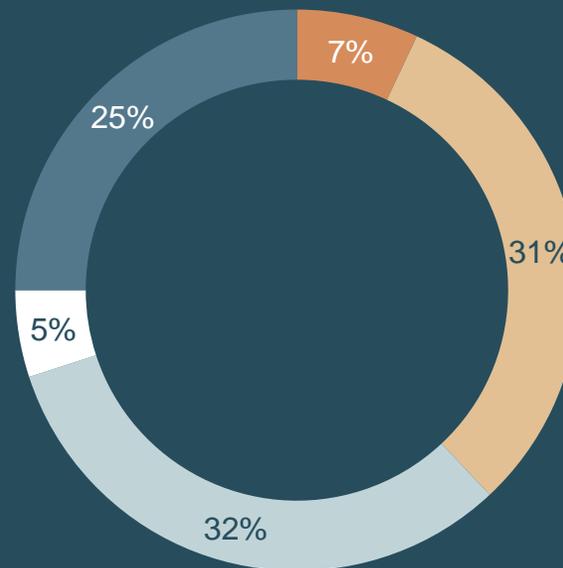
# Capital Structure & Ownership

## CAPITAL STRUCTURE

Market Capitalization	<b>C\$175M</b>
Shares Outstanding (M)	<b>109.0</b>
Warrants (M)	<b>2.5</b>
Options (M)	<b>5.6</b>
RSU's (M) <sup>(1)</sup>	<b>0.2</b>
DSU's (M)	<b>0.5</b>
Fully Diluted Share Capital (M)	<b>117.9</b>
Cash as at Aug 14, 2023	<b>US\$18M</b>
Debt	<b>Debt Free</b>

Notes:  
 (1) RSUs may be issued in shares or cash

## OWNERSHIP



- Rio Tinto
- Tembo
- Institutional
- Management
- Retail

**Including:**  
 Beedie Capital  
 Delbrook  
 Konwave  
 Macquarie  
 Ixios  
 US Global  
 Russell Investment Mgmt  
 Palos Management  
 Empire Life  
 Sentry  
 TBF Global AM  
 Sprott COPJ ETF

## ANALYST COVERAGE



# Management Team with Proven Track Record

CORPORATE



**George Ogilvie, P.Eng.**  
 President, CEO & Director  
 +30 years of management, operating and technical experience in the mining industry. Previously **President & CEO of Battle North (sold to Evolution Mining), CEO of Kirkland Lake, and CEO of Rambler Metals**



**Bernie Loyer**  
 SVP Projects  
 +35 years building and delivering large scale mining projects. Prior positions at **SolGold (Cascabel), Goldcorp (Penasquito and Cerro Negro), Torex Gold (Morelos and Media Luna), BHP (Escondida) and at FLSmidth Minerals.**



**Nick Nikolakakis, B.A.Sc, MBA**  
 VP Finance and CFO  
 +27 years of North American executive mining finance experience. Former **VP Finance and CFO of Battle North, Rainy River and Placer Dome, VP Corporate Finance at Barrick and other positions at North American Palladium and BMO Nesbitt Burns.**



**Rita Adiani, LLB Hons**  
 SVP Strategy & Corporate Development  
 +16 years of mining experience across strategy & business development, investment banking and corporate law. Previously **EVP and Head of Business Development at Xiana Mining, MD at NRG Capital Partners, VP at Societe Generale and Senior Corporate Finance Manager at La Mancha**



**Alison Dvoskin, CPIR**  
 Director, Investor Relations  
 +15 years in investor relations. **Formerly Manager, Investor Relations of Klondex Mines and Eastmain Resources.** Began her career at a Toronto-based IR firm, broadly specializing in mining

OPERATIONS



**Travis Snider, B.Sc, Env Chem, SME**  
 Vice President, Sustainability & External Relations  
 +20 years experience in the mining industry in Arizona. Previously **Mining Project Manager at Engineering & Environmental Consultants, SVP of Operations for Sierra Resource Group and VP of Mining & Oil operations for Wilcox**



**Doug Bowden, MSc.**  
 Vice President, Exploration  
 +40 years mining experience throughout North America and Mexico. Responsible for managing exploration programs for Amselco, BP Minerals, Kennecott and Wester Uranium. **Senior executive positions held at Gold Summit Corporation, Western Uranium and Concordia**



**Anthony Bottrill, B.Sc Geo, AusIMM**  
 Resource Geologist  
 20+ years in the mining industry at mining operations (OP/UG) focused on resource modelling. Senior Resource Geologist with **BHP Billiton - Olympic Dam, Corporate Mineral Resource Manager, Klondex Mines.**



**Dan Johnson, P.E., R.G., RM-SME**  
 Project Director  
 +30 years of environmental management, hydrological engineering, operations and project management in Arizona. VP and GM at **Taseko's Florence Mine**, Technical Services and Environmental Director at **QuadraFNX**, and senior level roles at **Phelps Dodge, Freeport-McMoRan and Rio Tinto.**



Toronto Corporate Office



Arizona Corporate Office/Site



Consultant

# Brownfield Site – Water rights and Surface Rights



## Infrastructure Valued at +\$30M

- Offices, core shack and ancillary buildings
- Power substation
- Onsite metallurgical testing
- Water wells and water pond permitted
- Permitted water access to the year 2070
- Rail line (to ship concentrate to refinery)
- Stockpile (part of Integrated Cactus PEA)
- Vent raise, shaft and underground workings (has not been upgraded)



**CACTUS PROJECT**  
TOTAL LAND PACKAGE  
5,370 ACRES

# A Clear Path to Development with Major Permits in Place

## COMPLETED PERMITS

Permit		Permit Office
<b>Air Quality Dust Permit</b>		Pinal County
<b>Arizona Pollution Discharge Elimination System (402) (SWPPP)</b>	★	ADEQ
<b>Water Rights</b> Use up to 3,800 acre-ft / yr	★	ADWR
<b>Aquifer Protection Permit</b> For Stockpile Project	★	ADEQ
<b>General Plan Amendment</b> Including development agreement and city zoning change from residential to industrial	★	Casa Grande
<b>Aquifer Protection Permit</b> Major amendment	★	ADEQ
<b>Mined Lands Reclamation Permit (MLRP)</b>	★	Arizona State Mine Inspector
<b>Industrial Air Permit</b>	★	Pinal County

★ Indicates major permit

## OUTSTANDING PERMITS – STREAMLINED PROCESS

Permit	Permit Office	Status
<b>Reclamation Bond</b>	AZ State Mine Inspector	Application post-PFS
<b>Radio Station License, Wireless Communication</b>	FCC	
<b>Notice of Intent to Clear Land</b>	AZ Department of Agriculture	Required pursuant to a construction decision
<b>Mining Construction Permits</b>	Pinal County	
<b>Above-Ground Tank Storage</b>	ADEQ	
<b>State Notice of Startup/Miner Registration Number</b>	AZ State Mine Inspector/MSHA	

Major permits are now in place, based on the Cactus PEA. Amendments may be required for certain permits based on the upcoming PFS

# Positive Metallurgical Programs – Recovery Rates by Mineral Type

**Cactus**

**Cactus Programs complete with favourable leach cycles**

- Enriched Material is acid generating, reducing reliance on external acid sources

**P/S**

**Parks/Salyer Met Programs currently underway in onsite facility**

- 20 ft columns online (Stockpile, P/S, Cactus)
- Preliminary results indicate acid generating enriched material with high recoveries

**Nuton**

**Rio Tinto’s Nuton division well underway testing primary sulphides**

- Life of mine optimized target of 80% extraction

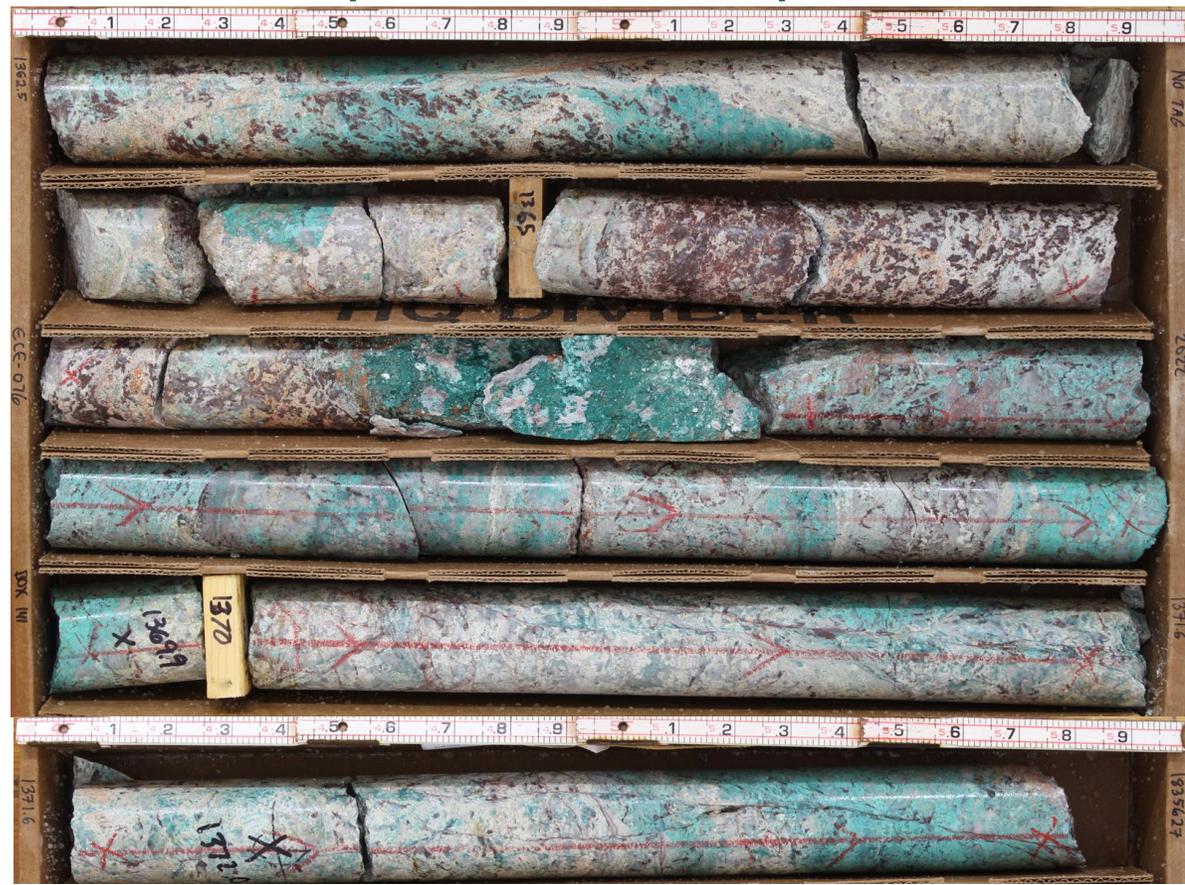
*Updated metallurgy, see press releases dated February 23, 2022 and May 2, 2023 and June 5, 2023. See slide 20 for details on Nuton  
 ASCU Recovery rates assume blended CuAS and CuCN recovery rate*

Mineral Resource Estimate and ASCU led Recovery Rates						
Category	Oxide			Enriched		
	Mineral Resource		Recovery Rates	Mineral Resource		Recovery Rates
<b>Parks/Salyer (Proposed Underground)</b>						
Inferred	14,100 kt	0.83% Cu TsoL	n/a	101,200 kt	1.10% Cu TSoL	80%
<b>Cactus East - Underground</b>						
Indicated	4,400 kt	0.84% Cu TsoL	90%	3,300 kt	1.10% Cu TsoL	76%
Inferred	10,900 kt	0.72% Cu TsoL		7,000 kt	1.14% Cu TsoL	
<b>Cactus West - Open Pit</b>						
Indicated	27,000 kt	0.51% Cu TsoL	88%	39,200 kt	0.41% Cu TsoL	78%
Inferred	51,600 kt	0.27% Cu TsoL		48,100 kt	0.82% Cu TsoL	
<b>Stockpile - Rehandling</b>						
Inferred	77,400 kt	0.14% Cu TSoL	90%	n/a		

# Infill to Measured: ECE-076 - Oxide, Chrysocolla and Malachite in Granite

Results Support mine plan

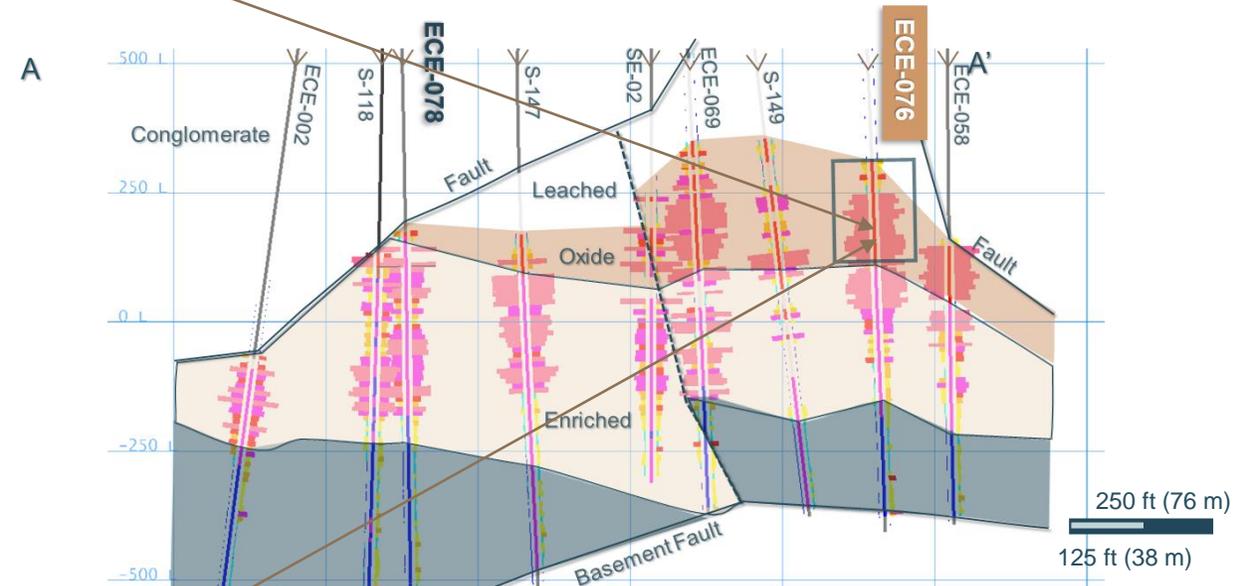
**3.08% CuT | 2.93% Cu Tsol | 0.019% Mo**



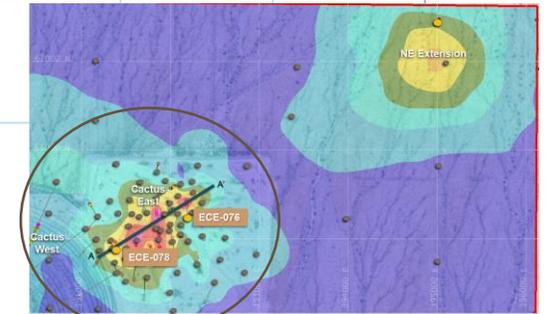
10.0 ft (3.0 m) Interval from 1,362.0 ft – 1,372.0 ft (415.1 m – 418.2 m)

**High grade interval within a 211 ft (64 m) intersect, at a depth of 1,204 ft (367 m)**

**1.75% CuT | 1.65% Cu Tsol | 0.012% Mo**

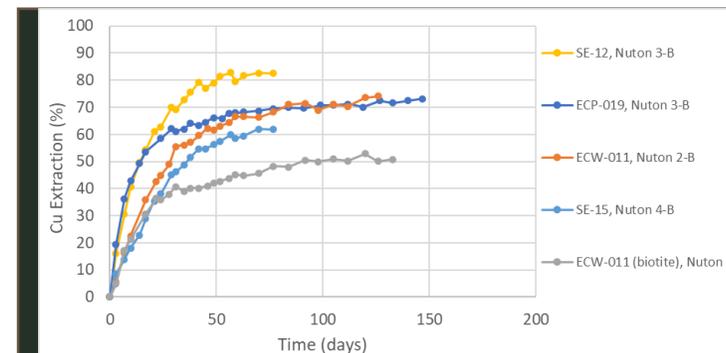


CE Cross section, looking WNW

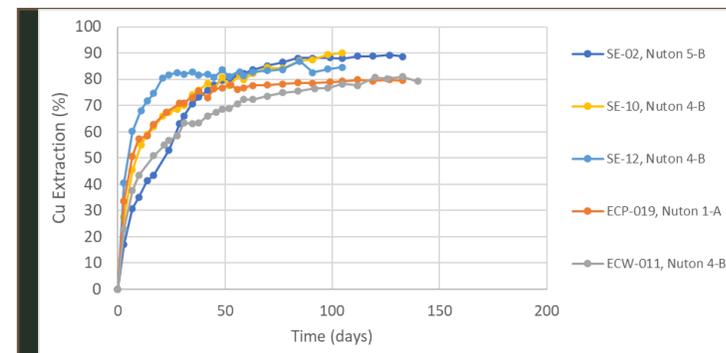


# Nuton Copper Extraction Column Data vs ASCU Data

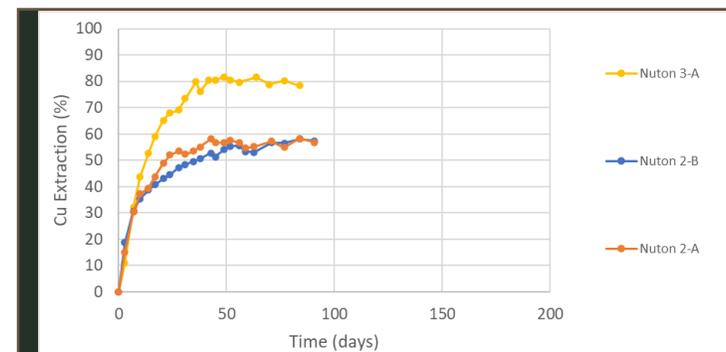
	ASCU				NUTON™	
	Programs updated Feb 2022 and May 2023				Preliminary Column Data	
Mineral Resource Location	Net Copper Extraction (% Cu AS)	Net Copper Extraction (% CuCN)	Blended Extraction (%)	Net Acid Consumption (kg/tonne)	Extraction (%)	Net Acid Consumption (kg/tonne)
<b>Oxides</b>						
Stockpile	90% <sup>1</sup>	40% <sup>1</sup>	81%	8	n/a	
Cactus West	92% <sup>1</sup>	73% <sup>1</sup>	88%	8		
Cactus East	92% <sup>1</sup>	73% <sup>1</sup>	90%	8		
Parks Salyer						
<b>Enriched (Secondary Sulphide)</b>						
Cactus West	92% <sup>1</sup>	73% <sup>1</sup>	78%	(-) <sup>5</sup>	80% - 90%	2.2
Cactus East	92% <sup>1</sup>	73% <sup>1</sup>	76%	(-) <sup>5</sup>	80% - 90%	2.2
Parks Salyer			80%	(-) <sup>5</sup>	80%	2.2
<b>Primary Sulphides</b>						
Flotation (ASCU)/ Leaching (Nuton)			86% <sup>2</sup>	(-) <sup>5</sup>	61% - 82% <sup>3</sup>	3.4
<b>Blended (Primary and Secondary Sulphide)</b>						
Flotation (ASCU)/ Leaching (Nuton)			91% <sup>2</sup>	(-) <sup>5</sup>	51% - 81% <sup>4</sup>	3.4



**PRIMARY**  
61%-82%\*



**ENRICHED**  
80%-90%\*\*



**BLENDED**  
51%-81%\*

See PR dated June 5, 2023 for additional disclosure

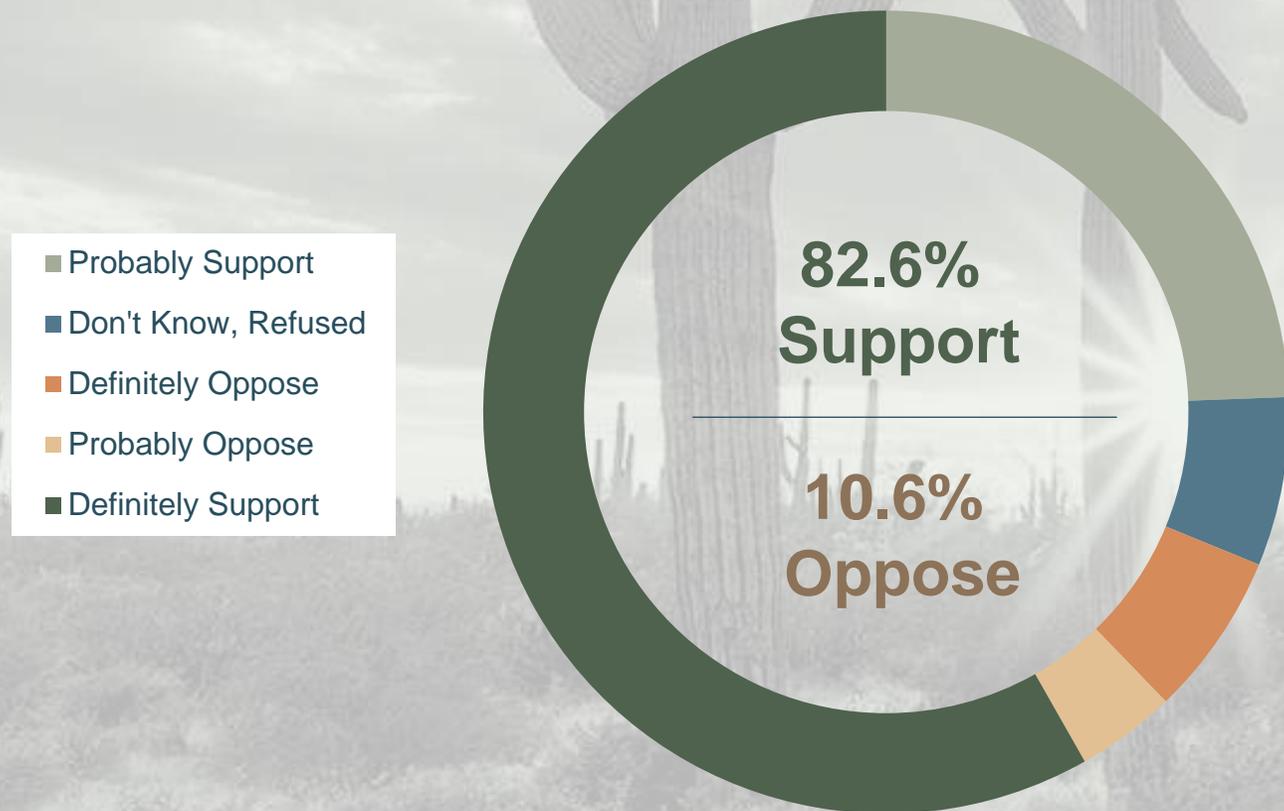
# Our ESG Framework – Setting the Pace for Net Zero Carbon Emissions



- ASCU is actively exploring use of renewable energy for its operations with the goal of becoming a “Net Zero Carbon Emissions” copper producer
- Ability to also reduce carbon footprint by Arizona Public Service’s transition to renewable resources (65% by 2030 and 100% by 2050)

# Local Support for the Cactus Mine

Overwhelming support for the Cactus Mine in Casa Grande – economic survey shows \$8.5 Billion of indirect and direct revenues to the local community.



GOP:	93.0% Support
Dem:	66.7% Support
PND:	84.4% Support
IND:	91.1% Support
Casa Grande:	81.5% Support
Maricopa:	84.8% Support

Polling completed by Highground Public Affairs Consultants in December 2021

# Journey Towards Net Zero - Partnership with Minviro

## PFS / FS

- Design parameters used to scope impact
- GHG inventory assessment (Scope 1, 2 and 3)
- Consideration of impact of diesel fuel, sulfuric acid, carbonate minerals, electricity, cement in operations across Scopes 1 and 2
- 100% renewable energy solutions
- Careful water use and management
- Waste and pollution management – air quality, dust management and tailings management
- Establishing carbon trading and offset policies/trading to the extent required

## PRODUCTION AND REPORTING

- Establishing reporting KPIs
- Reporting to international standards (e.g. SASB, TCFD)

## Construction

- Investment in low carbon technologies and minimizing direct impacts (Scope 1 & 2)
- Supply chain management to minimize Scope 3 emissions
- Local procurement and workforce hiring generating positive social impact
- Compliance with global standards (e.g., Equator Principles) to align with debt financing



# Robust Returns from Lowest Capital Intensity vs Peer Group

Between the PEA and the upcoming Prefeasibility study, ASCU is reviewing the following:

- Mining inventory (potential to include P/S and Primary Material)
- Development plan sequencing
- Metallurgical recoveries
- Operating cost parameters
- Capital cost parameters
- Macro inputs

PEA CONSTRUCTION CAPEX BREAKDOWN (US\$M)			
Direct & Indirect Cost Components	Leach Pads, Ponds & Pipelines	SXEW Facility	Total Capital Cost
Directs Subtotal	\$18.4	\$45.9	\$64.3
Indirects Subtotal	\$3.1	\$19.1	\$22.2
Contingency	\$3.0	\$9.0	\$12.0
Total Process Construction Cost (22 ktpa)(Initial)	\$24.5	\$74.1	\$98.5
Land Acquisitions	--	--	\$22.9
Project Other Costs	--	--	\$2.6
<b>Total Initial Construction Cost</b>	<b>--</b>	<b>--</b>	<b>\$123.9</b>

- Assumes contractor mining
- A contingency of 15% has been included in the capital cost for ancillary mine equipment, leach pad infrastructure and the SXEW facility



Source: (1) Integrated Cactus PEA 2021 for ASCU – Table 21-2; Copper Creek Project, Faraday Copper (Copper Creek Project PEA, Arizona, USA; Report Date: May 3, 2023); Mcllvna Bay Project, Foran Mining (FS for the Mcllvna Bay Project, Saskatchewan, Canada; Report Date: April 14 2022); Marimaca Project, Marimaca Copper (PEA for the Marimaca Project, Antofagasta, II Region, Chile; Report Date 4 August 2020); Filo del Sol, Filo Mining (Updated PFS for the Filo del Sol Project, San Juan Province, Argentina; Report Date: February 28, 2023); Arctic Project, Trilogy Metals (FS for the Arctic Project, Alaska, USA; Report Date: January 20, 2023); and Josemaria Copper-Gold Project, Josemaria Resources (FS for the Josemaria Copper-Gold Project, San Juan Province, Argentina; Report Date: September 28, 2020) (2) The Integrated Cactus PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorised as mineral reserves and there is no certainty that the PEA will be realised

# Reactivating a Brownfields Property Using New Technologies

## ASARCO

Production of primary sulphides using flotation mill



Sacaton Discovery 1964  
 Production Commences 1974  
 Suspends Production 1984  
**low metal prices**

Sacaton US\$20M Remediation Complete 2019

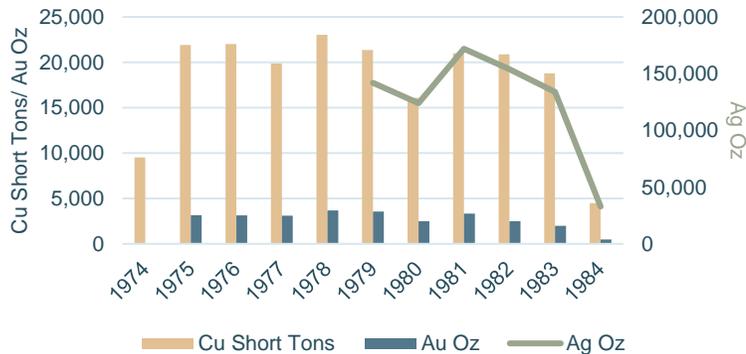
## ARIZONA SONORAN COPPER COMPANY

Heap leach and SXEW operation considered



- Purchases Sacaton
- Changes name to Cactus Mine
- Issues PEA on Stockpile
- Raises US\$25M
- Acquires Parks/Salyer
- Commencement of permitting process
- Validates historic holes and data
- Resource definition drilling complete
- Declaration of maiden Mineral Resource Estimate for Cactus
- Integrated PEA with Cactus and Stockpile projects
- Water Permit and APP Stockpile Permit obtained
- IPO and C\$45m financing
- Land package consolidation
- Builds board and team
- OTC Listing
- Infill and exploration drilling at Cactus and P/S
- Improves Metallurgy
- Confirmation no Federal Nexus Water
- C\$35m Financing Includes Rio Tinto
- Declares 2.9B lb maiden resource at P/S
- Launches Metallurgical program
- Expands operations and development team
- Infill drilling: indicated program complete; measured program underway
- C\$32.5m Financing
- MLRP and Industrial Air Permit received
- Improves metallurgy - ASCU
- Positive preliminary Nuton results – Rio Tinto
- Building owner/operator team
- PFS and FS Studies **expected 2024**
- Permitting **Based on PFS mine plan**
- Testing with Rio Tinto's Nuton Technologies **in process**
- Project Financing **subject to PFS and FS outcomes**
- Construction **subject to PFS and FS outcomes. 18–24-month construction period (per 2021 PEA)**
- Production **upon positive construction decision**

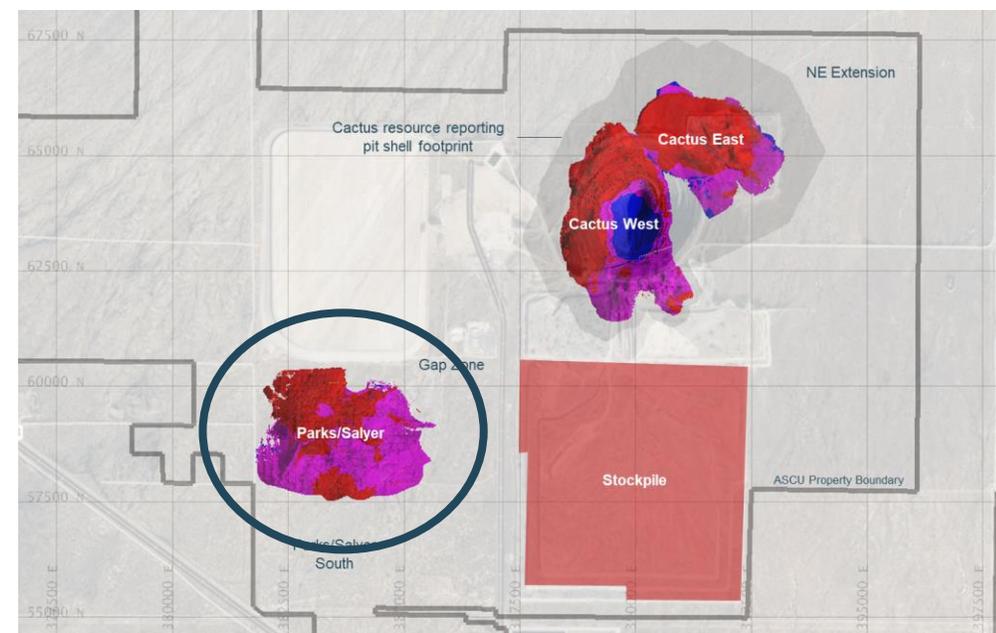
## HISTORICAL PRODUCTION (CONCENTRATE)



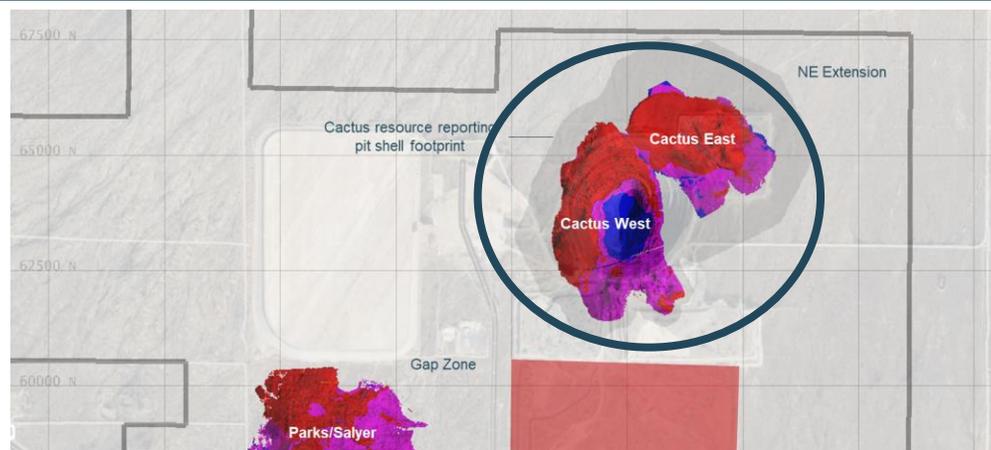
# Parks/Salyer Mineral Resource Update

PREVIOUS MINERAL RESOURCE (As of September 28, 2022)			UPDATED MINERAL RESOURCE (As of August 31, 2023)		
Tons	Grade	Pounds	Tons	Grade	Pounds
kt	Cu% *	Cu Mlbs	kt	Cu% *	Cu Mlbs
<b>Total Indicated</b>			<b>143,900</b>	<b>1.009</b>	<b>2,906.1</b>
Total Leachable			130,200	1.028*	2,676.6
Oxide	N/A		10,000	0.921*	183.7
Enriched			120,200	1.037*	2,493.0
<b>Total Inferred</b>	<b>143,600</b>	<b>1.015</b>	<b>48,400</b>	<b>0.967</b>	<b>936.1</b>
Total Leachable	115,400	1.066*	44,500	0.982*	873.2
Oxide	14,100	0.827*	8,700	0.925*	161.7
Enriched	101,200	1.100*	35,700	0.996*	711.5

See slide 35, or PR dated October 16, 2023, for full notes and disclosures related to the MRE.



# Cactus West and Cactus East Mineral Resource Update



## Cactus East, Underground Resource outside of Cactus Open Pit Resource

	PREVIOUS MINERAL RESOURCE (As of September 28, 2022)			UPDATED MINERAL RESOURCE (As of August 31, 2023)		
	Tons kt	Grade Cu% *	Pounds Cu Mlbs	Tons kt	Grade Cu% *	Pounds Cu Mlbs
<b>Total Indicated</b>	<b>9,900</b>	<b>0.912</b>	<b>180.0</b>	<b>10,400</b>	<b>0.882</b>	<b>182.6</b>
Leachable	7,700	0.954*	146.2	9,000	0.891*	161.0
<b>Total Inferred</b>	<b>19,200</b>	<b>0.873</b>	<b>335.9</b>	<b>6,400</b>	<b>0.785</b>	<b>100.1</b>
Leachable	17,900	0.881*	315.7	4,600	0.767*	69.9

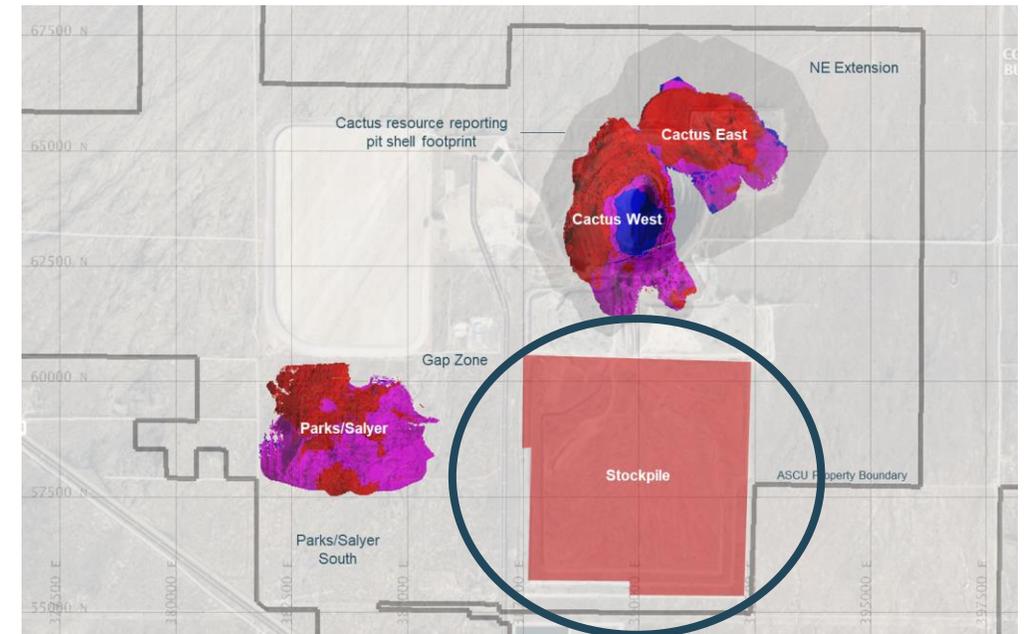
## Cactus Open Pit, inclusive of Cactus West and Cactus East

	PREVIOUS MINERAL RESOURCE (As of September 28, 2022)			UPDATED MINERAL RESOURCE (As of August 31, 2023)		
	Tons kt	Grade Cu% *	Pounds Cu Mlbs	Tons kt	Grade Cu% *	Pounds Cu Mlbs
<b>Total Measured</b>		N/A		<b>10,400</b>	<b>0.241</b>	<b>49.8</b>
Leachable				9,100	0.230*	41.9
<b>Total Indicated</b>	<b>141,900</b>	<b>0.505</b>	<b>1,431.6</b>	<b>209,900</b>	<b>0.433</b>	<b>1,818.1</b>
Leachable	66,200	0.696*	919.7	138,200	0.482*	1,332.1
<b>Total M&amp;I</b>	<b>141,900</b>	<b>0.505</b>	<b>1,431.6</b>	<b>220,300</b>	<b>0.424</b>	<b>1,868.0</b>
Leachable	66,200	0.696*	919.7	138,200	0.482*	1332.1
<b>Total Inferred</b>	<b>209,700</b>	<b>0.339</b>	<b>1,428.7</b>	<b>177,900</b>	<b>0.328</b>	<b>1,168.7</b>
Leachable	99,700	0.334*	672.1	57,500	0.315*	361.8

See slide 35, or PR dated October 16, 2023, for full notes and disclosures related to the MRE.

PREVIOUS MINERAL RESOURCE (As of August 31, 2021)			UPDATED MINERAL RESOURCE (As of August 31, 2023)		
Tons	Grade	Pounds	Tons	Grade	Pounds
kt	Cu TSol%	Cu Mlbs	kt	Cu TSol%	Cu Mlbs
<b>Indicated (Oxide)</b>	<b>N/A</b>		<b>71,100</b>	<b>0.153</b>	<b>217.3</b>
<b>Inferred (Oxide)</b>	<b>77,400</b>	<b>0.144</b>	<b>1,200</b>	<b>0.127</b>	<b>3.0</b>

See slide 35, or PR dated October 16, 2023, for full notes and disclosures related to the MRE.



# Onsite Metallurgical Program in TruStone Facility



## METALLURGICAL RECOVERIES

Parks/Salyer	80% enriched
Cactus East	76% enriched   90% oxide
Cactus West	78% enriched   88% oxide
Stockpile	92% oxide

*\*see PR dated May 2, 2023 for details and disclosures*

# Notes to the Mineral Resource Estimate

## NOTES:

1. Leachable copper grades are reported using sequential assaying to calculate the soluble copper grade. Primary copper grades are reported as total copper, Total category grades reported as weighted average copper grades of soluble copper grades for leachable material and total copper grades for primary material. Tons are reported as short tons.
2. Stockpile resource estimates have an effective date of 1<sup>st</sup> March, 2022, Cactus resource estimates have an effective date of 29<sup>th</sup> April, 2022, Parks/Salyer resource estimates have an effective date of 19<sup>th</sup> May, 2023. All resources use a copper price of US\$3.75/lb.
3. Technical and economic parameters defining resource pit shell: mining cost US\$2.43/t; G&A US\$0.55/t, 10% dilution, and 44°-46° pit slope angle.
4. Technical and economic parameters defining underground resource: mining cost US\$27.62/t, G&A US\$0.55/t, and 5% dilution,
5. Technical and economic parameters defining processing: Oxide heap leach (HL) processing cost of US\$2.24/t assuming 86.3% recoveries, enriched HL processing cost of US\$2.13/t assuming 90.5% recoveries, Primary mill processing cost of US\$8.50/t assuming 92% recoveries. HL selling cost of US\$0.27/lb; Mill selling cost of US\$0.62/lb.
6. Royalties of 3.18% and 2.5% apply to the ASCU properties and stateland respectively. No royalties apply to the Parks/Salyer South property.
6. For Cactus: Variable cutoff grades were reported depending on material type, potential mining method, and potential processing method. Oxide material within resource pit shell = 0.099% TSol; enriched material within resource pit shell = 0.092% TSol; primary material within resource pit shell = 0.226% CuT; oxide underground material outside resource pit shell = 0.549% TSol; enriched underground material outside resource pit shell = 0.522% TSol; primary underground material outside resource pit shell = 0.691% CuT.
7. For Parks/Salyer: Variable cut-off grades were reported depending on material type, associated potential processing method, and applicable royalties. For ASCU properties - Oxide underground material = 0.549% TSol; enriched underground material = 0.522% TSol; primary underground material = 0.691% CuT. For stateland property - Oxide underground material = 0.545% TSol; enriched underground material = 0.518% TSol; primary underground material = 0.686% CuT. For Parks/Salyer South properties - Oxide underground material = 0.532% TSol; enriched underground material = 0.505% TSol; primary underground material = 0.669% CuT.
8. Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, sociopolitical, marketing, or other relevant factors.
9. The quantity and grade of reported inferred mineral resources in this estimation are uncertain in nature and there is insufficient exploration to define these inferred mineral resources as an indicated or measured mineral resource; it is uncertain if further exploration will result in upgrading them to an indicated or measured classification.
10. Totals may not add up due to rounding.

[@Anthony Bottrill](#) - can we clarify that these effective dates apply to the "Previous Mineral Resource" (per the lawyers)

[@Alison Dvoskin](#) These are the effective dates based on the database cutoffs for each of the resource estimates area (ie stockpile, Cactus, PS). Can discuss with Allan on this and likely choose a single effective date for everything.

# Rediscovering the World-Class Santa Cruz Copper Porphyry System

Santa Cruz porphyry copper system extends northeast over P/S and beyond the Cactus Mine Project.

ASCU – active drilling (3 rigs) - IE – active drilling (6 rigs)

## Ivanhoe Electric Mineral Resource Estimate

Source : Ivanhoe Electric Technical Report

- Indic - 226 Mt of 1.24% CuT, 0.82% Cu TSol
- Inf – 149 Mt of 1.24% CuT, 0.82% CuTSol
- (0.39% cut-off - \$3.70/lb Cu)

