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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

BOB STUMP – Chairman
GARY PIERCE
BRENDA BURNS
BOB BURNS
SUSAN BITTER SMITH

Arizona Corporation Commission

2014 SEP 9 10:14:02

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ORIGINAL

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IN THE MATTER OF THE
APPLICATION OF ARIZONA PUBLIC
SERVICE COMPANY FOR A RULING
RELATING TO ITS 2015 DEMAND
SIDE MANAGEMENT
IMPLEMENTATION PLAN.

DOCKET NO. E-01345A-14-0261

**FREEPORT-MCMORAN COPPER &
GOLD INC.'S REQUEST FOR AN
EXEMPTION FROM A.A.C. R14-2-
2401, ET SEQ.**

Freeport-McMoRan Copper & Gold Inc. (“Freeport-McMoRan” or “Company”) hereby submits this Request for an Exemption from A.A.C. R14-2-2401, et seq. with respect to Arizona Public Service Company’s (“APS”) Demand Side Management Energy Efficiency programs commencing with APS’s 2015 Demand Side Management Energy Efficiency Implementation Plan.

INTRODUCTION

This Request for an Exemption is being filed pursuant to the provisions of A.A.C. R14-2-2408(E) which provides: “All customer classes of an affected utility shall bear the costs of DSM programs by payment through a non-bypassable mechanism, unless a customer or customer class is specifically exempted by Commission order.” (Emphasis added).

Freeport-McMoRan requests an exemption because its special circumstances as an exceptionally large consumer of electric power make it more efficient for the Company to pursue energy efficiency on its own behalf rather than as a participant or funder of utility energy efficiency programs.

Moreover, APS has determined that excluding Freeport-McMoRan from APS’s

1 Moreover, APS has determined that excluding Freeport-McMoRan from APS's
2 Demand Side Management ("DSM") programs would actually result in a *reduction* in
3 DSM charges to other APS customers. Consequently, it is reasonable, equitable, and in
4 the public interest for Freeport-McMoRan to be exempted from APS's DSM programs
5 and DSM charges.

6 **FREEPORT-MCMORAN'S SPECIAL CIRCUMSTANCES WARRANT AN**
7 **EXEMPTION FROM APS'S DSM PROGRAMS AND DSM CHARGES**

8 Paragraph 56 of the APS Settlement Agreement approved by the Commission in
9 Docket No. E-01345A-03-0437 (Decision No. 67744) provides that:

10 "Any customer who can demonstrate an active DSM program
11 and whose single site usage is twenty MW or greater may file a
12 petition with the Commission for exemption from the DSM adjustor.
13 The public shall have 20 days to comment on such petition. In
14 considering any petition pursuant to this paragraph, the Commission
15 may consider the comments received and any other information that
16 is relevant to the customer's request."

17 The Request for an Exemption from the Energy Efficiency Rules ("EE Rules") is
18 being made at this time in order to provide sufficient time for APS and the Commission
19 to make the necessary adjustments in removing Freeport-McMoRan, Inc.'s load from
20 APS's total load when calculating cumulative savings required under the EE Rules.

21 Freeport-McMoRan has several mining operations employing in excess of 8,000
22 employees in Arizona. Arizona produced 65% of the nations mined copper in 2012 and
23 is ranked sixth in the world when compared with other copper producing nations.

24 The Company has been active in sustainable development efforts, which is the
25 foundation on which Freeport-McMoRan operates. As a large multi-national entity,
26 one of the Company's fundamental challenges is to find the most efficient production

1 methods that will enable it to meet demand for products in a cost-effective manner
2 while minimizing negative impacts. Freeport-McMoRan is a commodity producer,
3 meaning it does not set the price of the copper it produces, the competitive market sets
4 the sales price. As energy is its second largest variable cost, energy efficiency is central
5 to this theme, and vital to Freeport-McMoRan in managing electricity costs in order to
6 stay competitive in the marketplace. The Company has historically budgeted some \$10
7 million annually on energy-related technology. As a result, Freeport-McMoRan has
8 developed several initiatives in order to address the efficient use of electricity during all
9 stages of its mining operations.¹

10 The Company runs a Technology Center that staffs over 300 professionals, with
11 offices and laboratories in Safford, Morenci and Tucson. The three major disciplines at
12 the Technology Center include improving mining, processing and environmental
13 technologies in order to improve operating efficiencies. For instance:

- 14 • As an energy-conserving alternative to smelting, concentrated leaching is used
15 where allowed by mineral type and market demand.
- 16 • The Company is also developing a full scale electrowinning technology (at the
17 Morenci location) that can reduce the electricity used for this type of processing
18 by 50%.
- 19 • In reducing ore variances, power can be minimized for crushing and grinding
20 purposes.
- 21 • The Company was the first in its industry to utilize the most energy efficient
22 comminution facilities (breaking into several pieces), which have resulted in on
23 average approximately a 16% reduction in grinding energy.
- 24 • The omission of Semi-Autogenous Grinding (SAG”) has saved the Company

25
26 ¹ See November 2013 Freeport-McMoRan Presentation on Energy Efficiency attached hereto as Exhibit 1.

1 four to six kwh per ton of SAG steel.

- 2 • Copper and molybdenum pressure oxidization techniques reduce power
- 3 consumption in the smelting process by between 29 and 36%.
- 4 • The Company has implemented technology for producing electrowon copper
- 5 cathodes with 15% less energy.
- 6 • The Company's Safford Sulphur Burner/Acid Plant produces acid from sulphur
- 7 for use in the copper recovery process. Excess process heat from the plant
- 8 generates up to 15 MW's of power for use at the Safford Mine facility and for
- 9 adding on to the grid.
- 10 • The Company has implemented energy efficiency projects at all active mining
- 11 operations and must continue to do so to stay competitive in the commodity
- 12 market.
- 13 • The Company has established two renewable energy facilities (solar) on mining-
- 14 related property at Ajo and Bagdad.
- 15 • The Company has implemented a water management/conservation plan for all
- 16 active mining and smelting operations which has resulted in water use in mining
- 17 operations world-wide to be comprised of approximately 70% recycled water.

18 Clearly, Arizona Public Service Company cannot implement an energy
19 efficiency program for Freeport-McMoRan that is more cost effective than what has
20 been, or will be, spent internally to reduce power consumption. In short, Freeport-
21 McMoRan, as a commodity producer that does not set the sales price of its product, is
22 motivated by its own competitive survival to be energy efficient, as the Company can
23 only control its costs of production. The Company can use the funds, that would
24 otherwise go to pay the existing Demand Side Management Surcharge, in a more
25 efficient and effective manner that achieves concrete, sizeable reductions in energy
26 consumption within APS' service territory.

1 The free market and competition force companies in power-intensive industries
2 such as mining to become more efficient, which in turn benefits APS' other ratepayers
3 due to the reduction in fuel costs, purchased power costs, new capacity costs,
4 transmission costs and distribution costs. In addition, there are reduced adverse
5 environmental impacts (such as water consumption and air emissions) associated with
6 reducing the need for new facilities to serve growth.

7 **EXEMPTING FREEPORT-MCMORAN FROM APS'S DSM**
8 **PROGRAMS AND DSM CHARGES WILL BENEFIT OTHER APS**
9 **CUSTOMERS BY REDUCING THEIR DSM CHARGES**

9 In filing its Application for Approval of its 2014 Demand Side Management
10 Implementation Plan, APS requested an extension of the deadline to file its 2014 DSM
11 Implementation Plan because there were still a number of open issues surrounding its
12 2013 DSM Implementation Plan including "the ability of certain large commercial
13 customers to opt out of the EE Rules". ACC Staff had no objection to APS's request
14 and the Commission entered an Order granting APS's request (Decision No. 73923
15 dated June 27, 2013).

16 As part of the Commission's approval of APS's 2013 Demand Side Management
17 Implementation Plan, the Commission requested information from APS regarding the
18 potential impacts of allowing Freeport-McMoRan to opt out of APS's Demand Side
19 Management program and the Demand Side Management adjustor clause ("DSMAC").
20 The Commission also requested information regarding the impact of including
21 unrecovered fixed costs in each valuation.

22 In response to the Commission's request, APS filed a Supplement to its 2013
23 Demand Side Management Implementation Plan ("Plan"). Paragraph 8 of the
24 Supplement entitled "Freeport-McMoRan Exclusion" is attached to this Request as
25 Exhibit 2.

26 In general, APS's assessment found that allowing Freeport-McMoRan to opt out

1 of APS's DSM programs and a DSM adjustor charge "would reduce both the funding
2 and the goals for Energy Efficiency along with the DSMAC revenue requirements and
3 charges, thus providing a benefit to other customers."

4 The APS assessment concluded by stating that:

5 "Under the scenario excluding Freeport, APS's 2013 DSM
6 goal would be reduced from approximately 549,000 to 520,200
7 MWh, which is 28,800 MWh or 5.2 percent lower than when
8 Freeport is included. The 2013 DSM budget is assumed to be
9 reduced by the same 5.2 percent, or roughly \$4.6 million. Similarly,
10 the 2013 revenue requirements for both DSM in general and the
11 DSMAC would also be reduced by \$4.6 million. As a result, the
12 potential DSMAC charges for 2013 would be reduced for both
13 residential and non-residential customers by 4.6 percent and 6.5
14 percent respectively." (Emphasis added).

15 Consequently, allowing Freeport-McMoRan to opt out will benefit all other APS
16 customers by reducing their DSM charges. While this result should not be a necessary
17 condition for granting Freeport-McMoRan an exemption, it makes the Company's case
18 all the more compelling. The impact of exempting Freeport-McMoRan from the 2013
19 DSMAC charge is reflected in Table 7 of the APS Supplement attached as Exhibit 3.

20 In light of the foregoing, it is reasonable, equitable, and in the public interest for
21 Freeport-McMoRan to be exempted from APS's DSM programs and DSM charges.

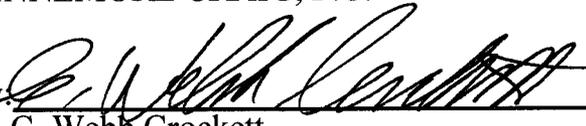
22 CONCLUSION

23 Based on the above, Freeport-McMoRan requests that the Commission, for good
24 cause shown, grant the Company an exemption from the Energy Efficiency Rules and
25 the DSMAC commencing with the effective date of the APS 2015 Demand Side
26 Management Implementation Plan, pursuant to the authority set forth in A.A.C. R-14-2-

1 2408(E) and A.A.C. R-14-2-2419(A).

2 RESPECTFULLY SUBMITTED this 9th day of September, 2014.

3 FENNEMORE CRAIG, P.C.

4
5 By: 
6 C. Webb Crockett
7 Patrick J. Black
8 Attorneys for Freeport-McMoRan Copper
9 & Gold Inc. and Arizonans for Electric
10 Choice and Competition

11 **ORIGINAL** and 13 copies filed
12 this 9th day of September, 2014 with:

13 Docket Control
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17 **COPY** of the foregoing hand-delivered/mailed
18 this 9th day of September, 2014 to:

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EXHIBIT 1

FREEPORT-McMORAN
COPPER & GOLD

Energy Efficiency

March, 2014

FCX
LISTED
NYSE

www.fcx.com

Mining Industry Summary

- Arizona produced 65% of our nation's mined copper in 2012
- Our state production is ranked 6th in the world vs. copper producing nations
- Arizona's copper is predominately sold outside the state – injecting fresh dollars into Arizona's economy
- Industry is active in sustainable development efforts – reclaiming and remediating impacts of historic mining and investing in the future of mining communities
- Industry benefits rural and metropolitan communities and counties throughout the state
- Companies donate many volunteer hours and provide significant funding to support local charities
- Copper is one of Arizona's five "Cs", a core industry of our state's economy

A Common Thread

- Supplier of products on which modern society depends
- Our products are used to provide basic infrastructure components that including technological advances that move societies toward a cleaner, healthier, and more productive future
- Copper is used to produce energy efficient products, molybdenum to manufacture high-strength alloys, and cobalt to create advanced biotechnology applications
- Our fundamental challenge is to find the most efficient production methods that will enable us to meet demand for our products in a cost-effective manner while minimizing negative impacts
- Sustainable development is the foundation on which we operate



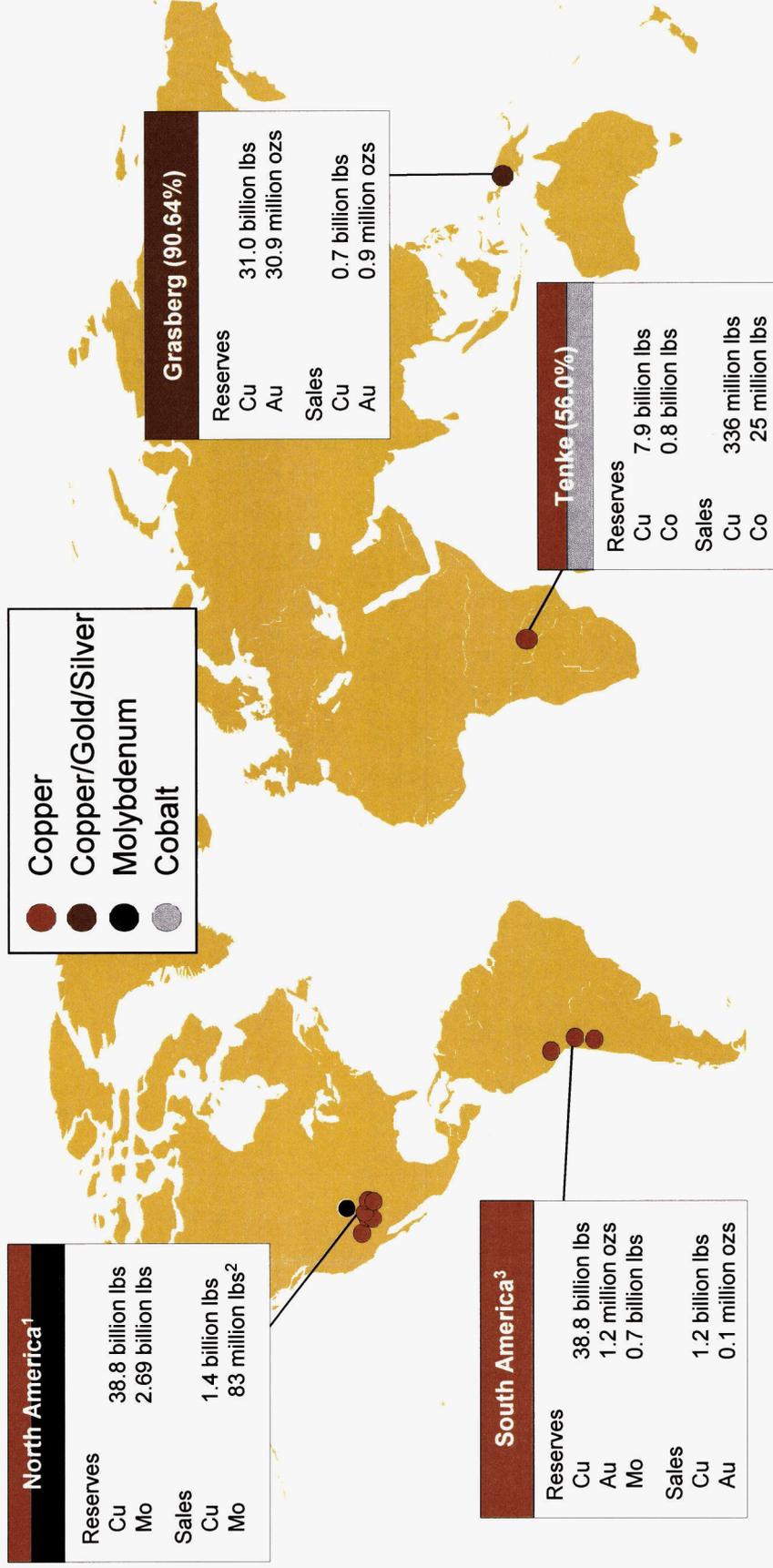
**FREEPORT-MCMORAN
COPPER & GOLD**

EXPANDING RESOURCES

FCX Worldwide Mining Locations

Major Mine Operations & Development Projects

All major assets majority-controlled and operated



Note: FCX consolidated reserves and annual sales; reserves as of December 31, 2012. Sales figures are based on actual 2012.

¹ Cu operations: Morenci (85%), Sierrita (100%), Tyrone (100%), Bagdad (100%), Safford (100%), Miami (100%) and Chino (100%); Primary Mo: Henderson (100%), Climax (100%)

² Includes moly sales from South America

³ Cu operations: Candelaria/Ojos del Salado (80%), Cerro Verde (53.6%) and El Abra (51%)

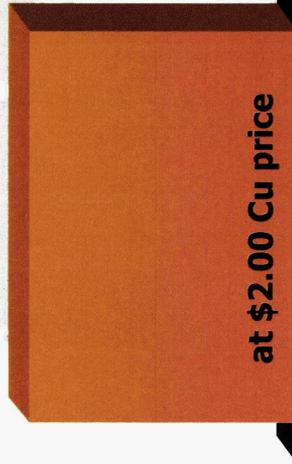
FCX Copper Reserves & Mineralized Material as of 12/31/12

billion lbs of copper

230



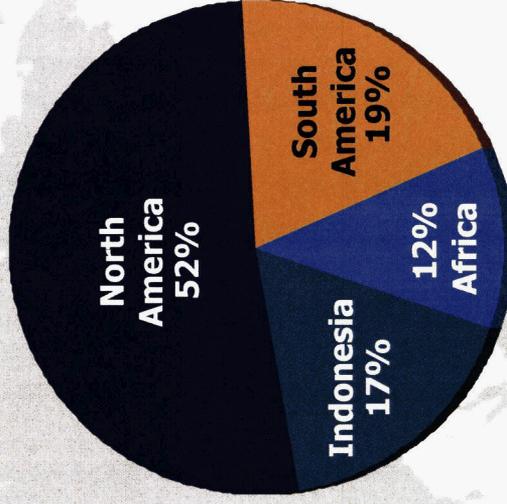
113
billion
lbs



117

Reserves (a) & Mineralized Material (b)

12/31/12
Mineralized Material (b)
by Geographical Region



(a) Preliminary estimate of recoverable proven and probable copper reserves using a long-term average copper price of \$2.00/lb; 93 billion pounds net to FCX's interest.

(b) Preliminary estimate of consolidated contained copper resources using a long-term copper price of \$2.20/lb. **Mineralized Material is not included in reserves and will not qualify as reserves until comprehensive engineering studies establish their economic feasibility. Accordingly, no assurance can be given that the estimated mineralized material will become proven and probable reserves. See Cautionary Statement.**

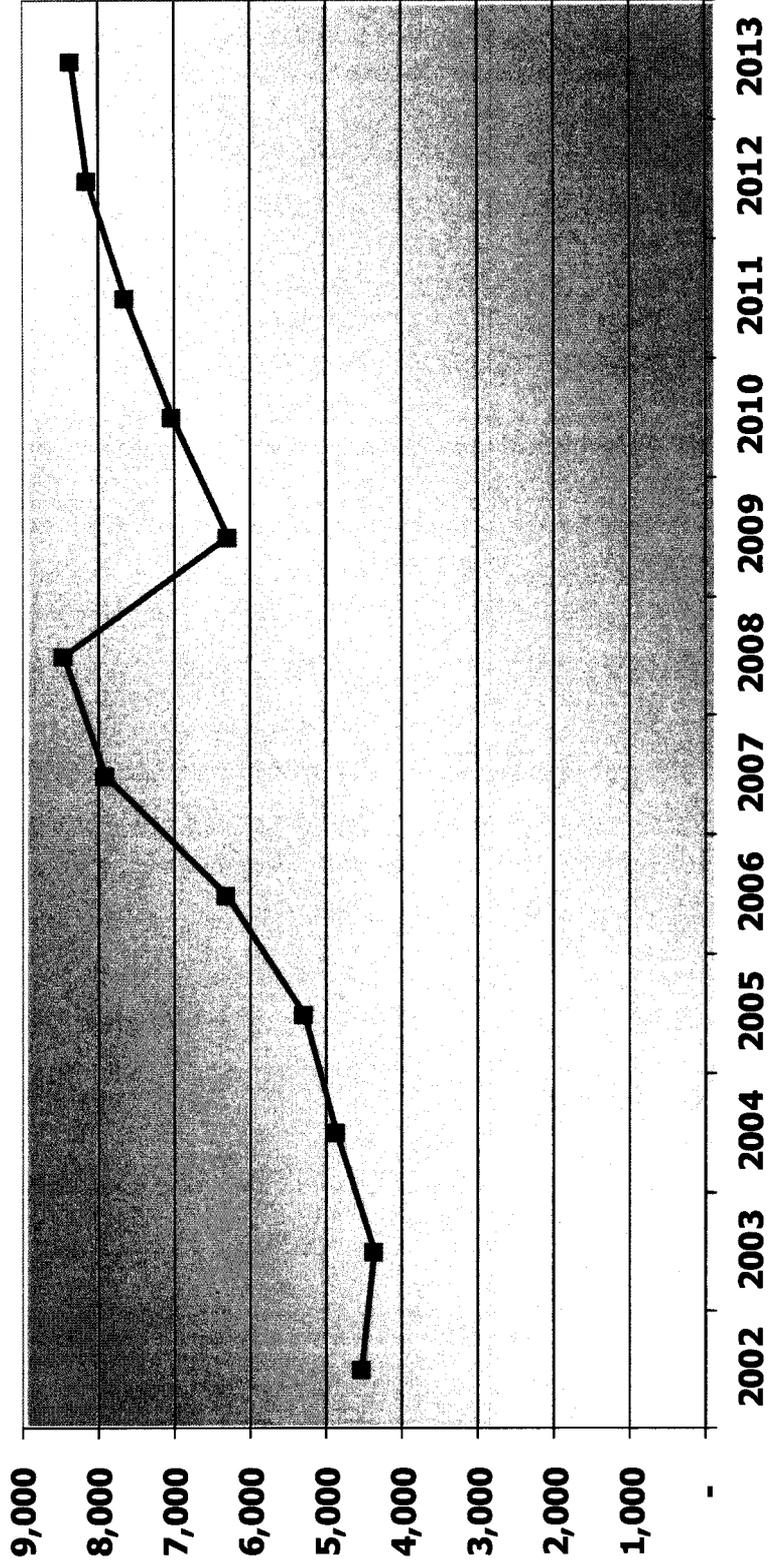
Good Jobs for Arizonans

- 12,100 workers directly employed by Arizona mining companies
- Total income paid to employees of Arizona mining companies in 2011 was \$1.20 billion
 - includes wages, salaries, and fringe benefits such as employer contributions to health insurance and retirement plans
 - Income per worker was \$99,500
 - Significantly higher than the \$47,000 average labor income for all Arizona workers
- Industry estimated to have provided 52,100 jobs for Arizonans



**FREEMONT-MCMORAN
COPPER & GOLD**

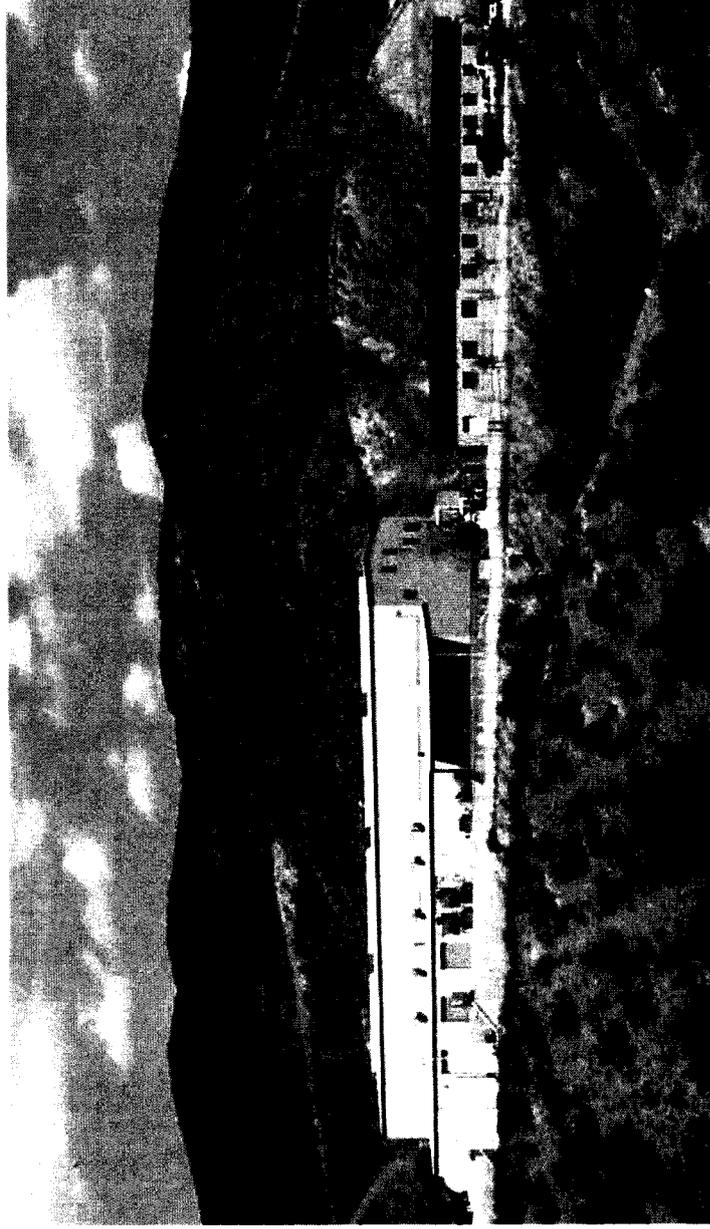
FCX Arizona Employment History



Sustainable Development Targets and Results

- Implement a water management/conservation plan for all active mining and smelting operations
 - Results: Water use by our mining operations world-wide is comprised of approximately 70% recycled water
- Implement an energy efficiency/energy conservation plan at all active mining operations
 - Results: Described herein
- For sites with direct CO₂-e (carbon dioxide equivalents) emissions exceeding 100,000 metric tons per year, prepare a GHG emissions plan that optimizes fuel-related emissions with long-term mine production plans
 - Results: Ongoing goal
- Establish two renewable energy facilities on mining-related property
 - Results: APS has sited a solar plant on company property at Ajo and Bagdad

Technology Center



- Over 300 professional and technical staff
- Offices and labs in Safford, Morenci and Tucson
- Budget over \$10 million on energy-related technology annually

Technology Focus Areas

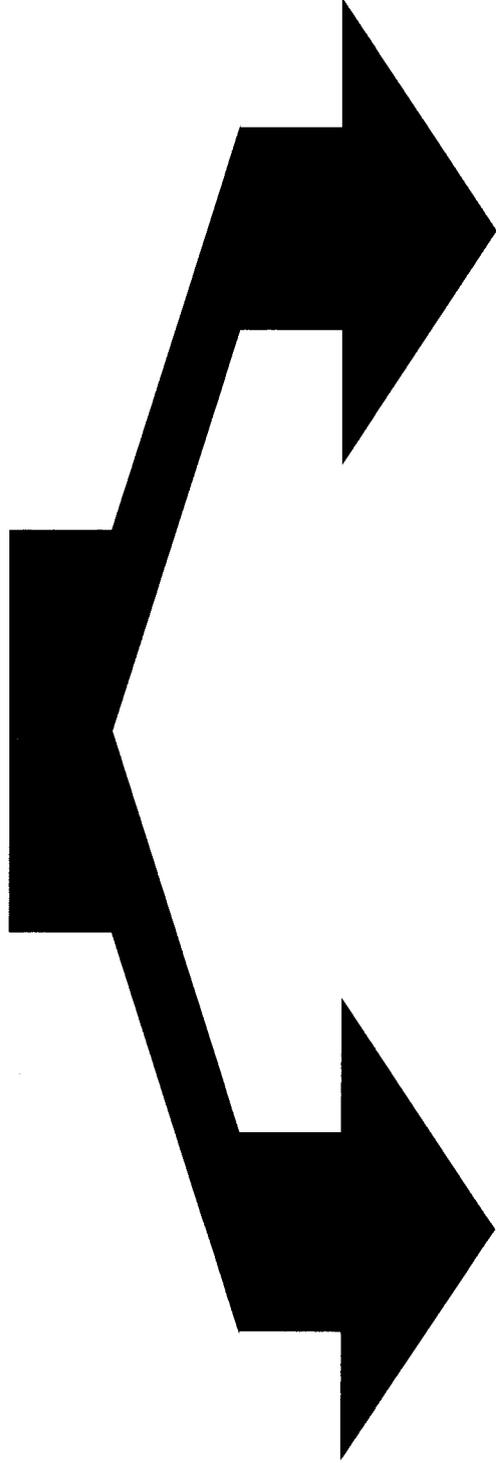
- Three disciplines in Technology Center
 - Mining technology
 - Process technology
 - Environmental technology

- Objectives: Provide technology to...
 - Improve operating efficiency
 - Remain competitive and profitable



Technology Development

Technology Center



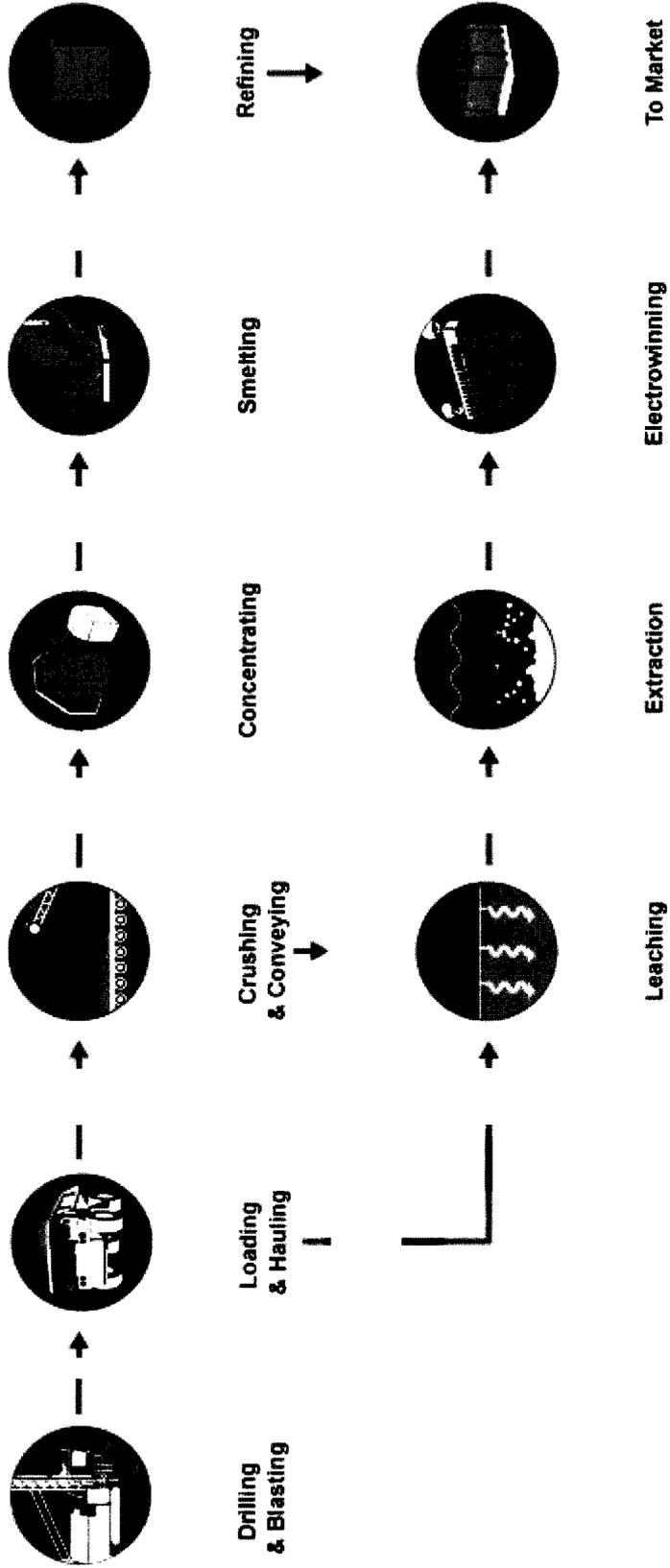
GROWTH

- Transformational Step-changes
- New Development Projects

OPTIMIZATION

- Support to Operating Branches
- Corporate-wide Initiatives

Mining Overview



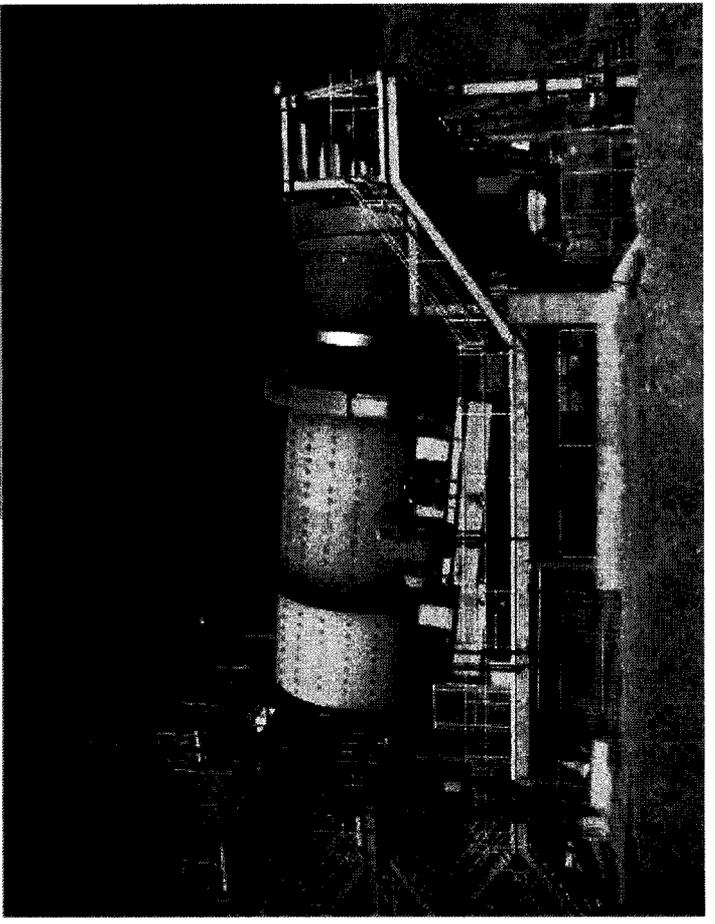
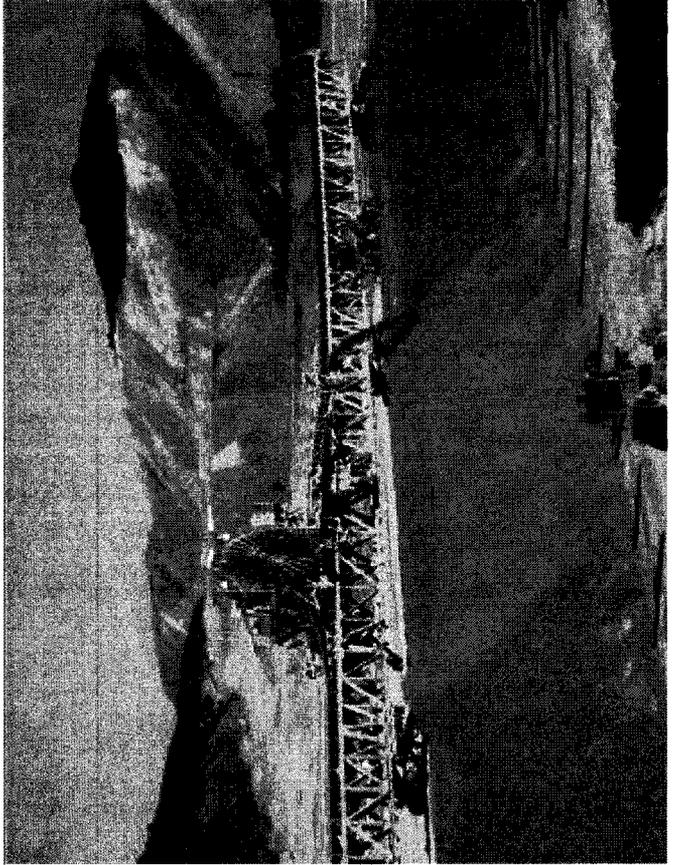
Mining

- Rock is fragmented for optimal processing
 - Haulage and leaching



Crush Convey

- Fragmented rock is transported to other unit operations for further refinement
- Rock is further crushed to optimize recovery

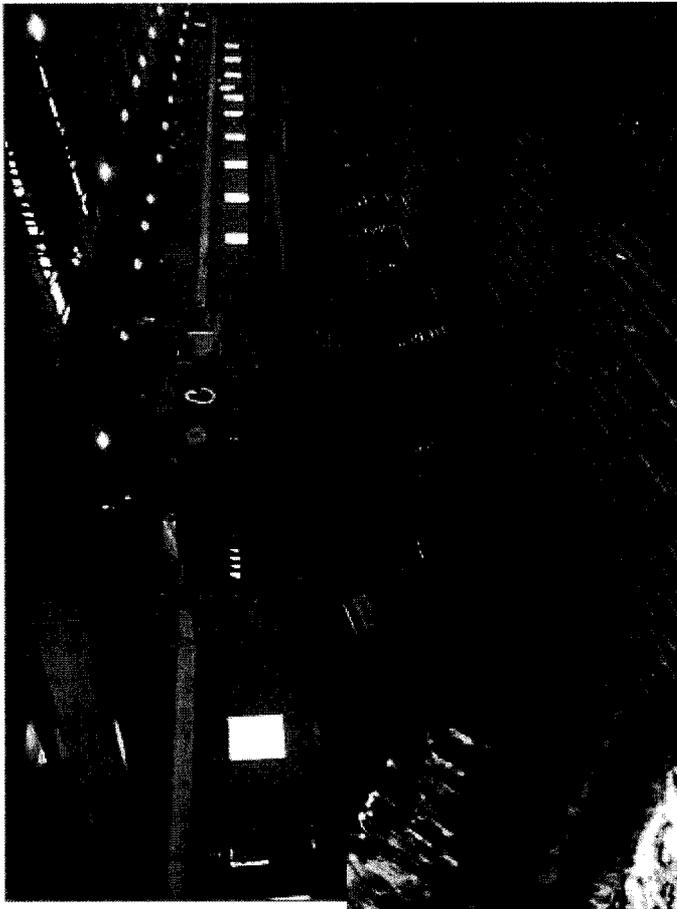
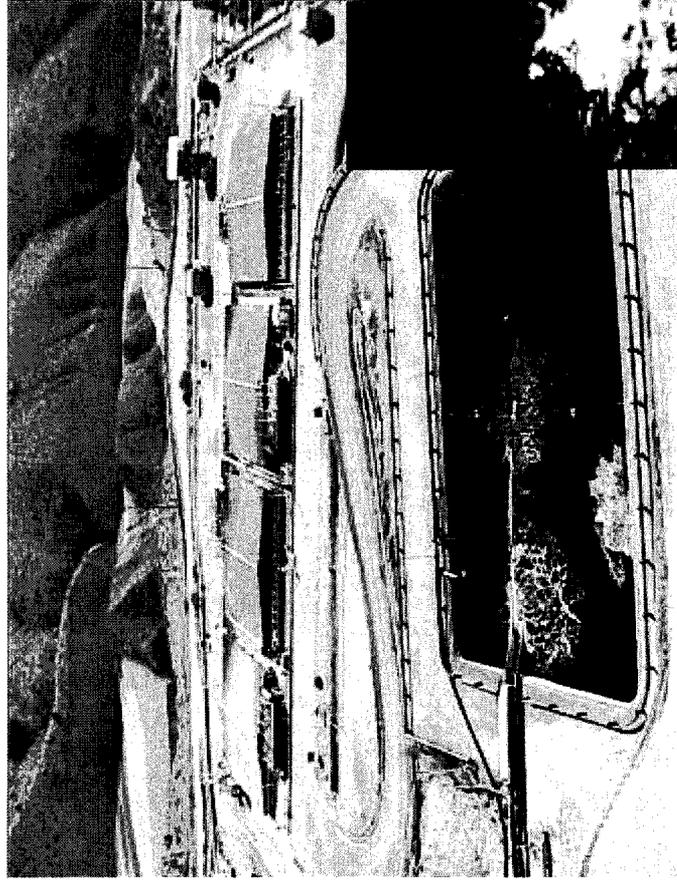


**FREEPORT-MCMORAN
COPPER & GOLD**

EXPANDING RESOURCES

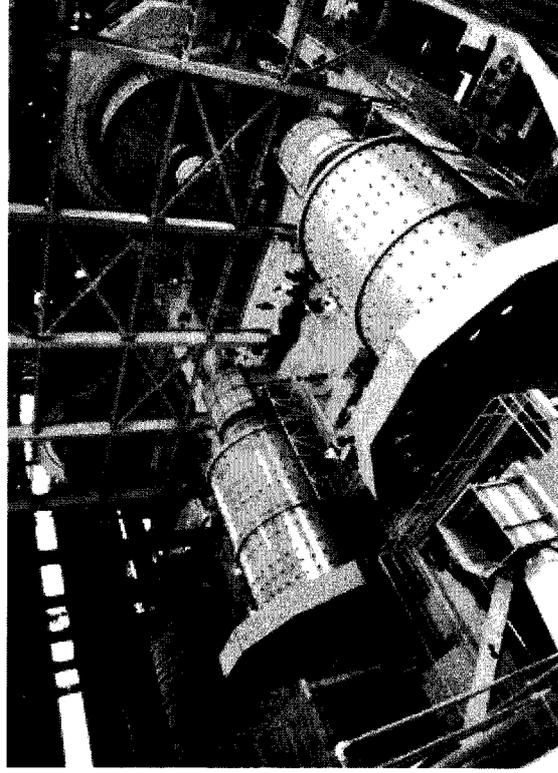
Solution Extraction/Electrowinning

- Leached copper solutions are purified and plated out as copper cathode



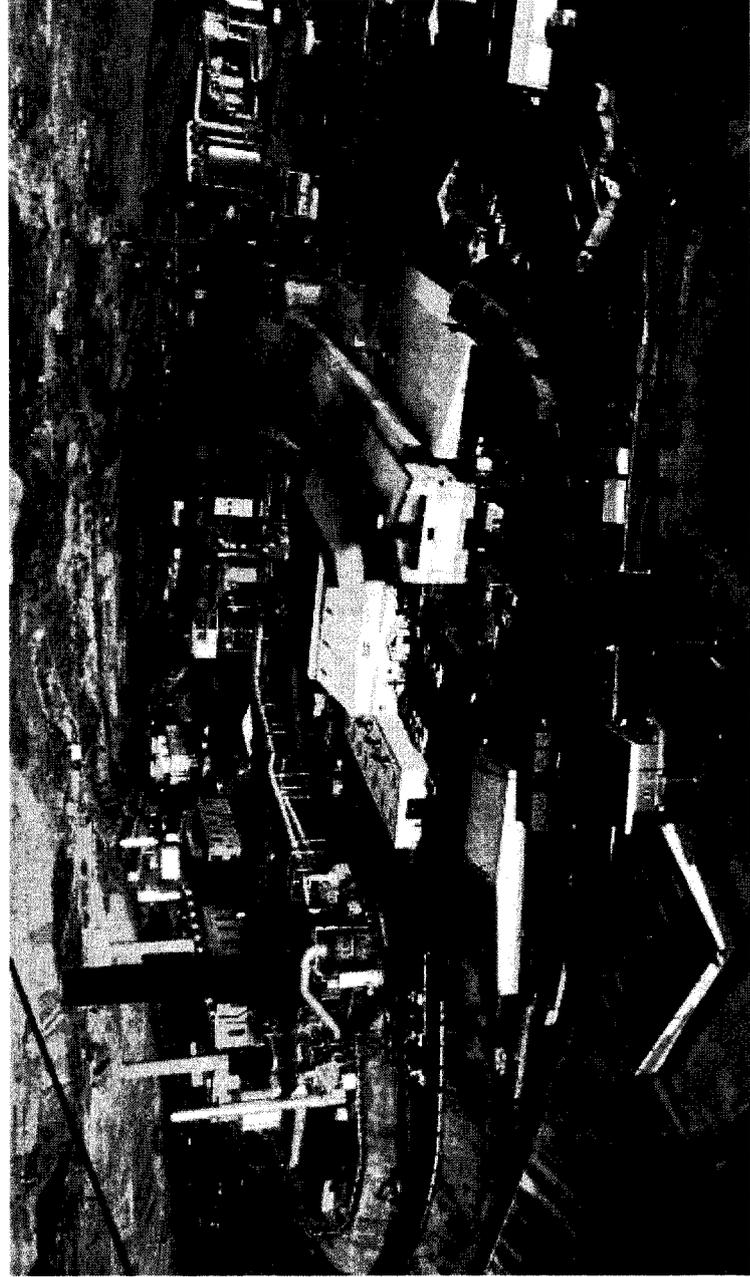
Concentrator

- Some rock types cannot be leached efficiently so a concentration process is used
- Rock is ground finer and contacted with a small quantity of chemicals that allow copper mineral particles to be selectively removed (floated in a froth)
- This concentrated product contains roughly 30% copper that is further refined at a smelter and refinery



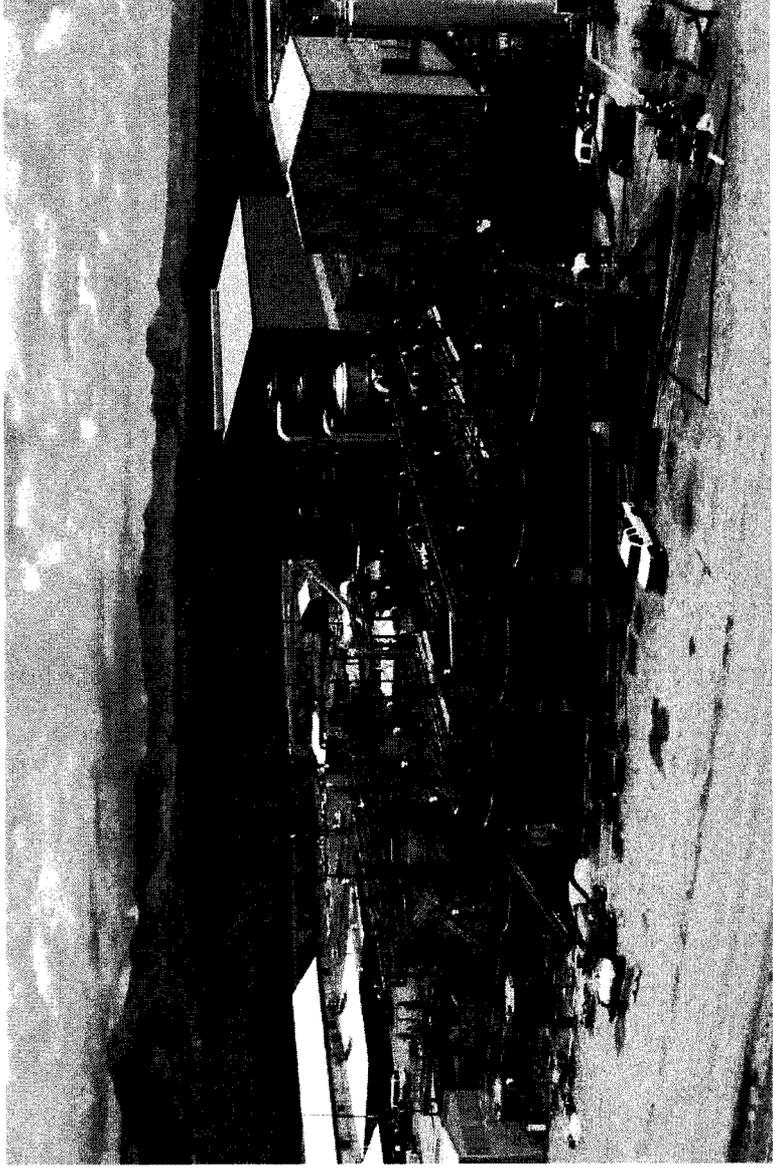
Smelter

- Produces copper anodes from copper concentrate
- Recycles a multitude of scrap material to recover copper, precious metals and other metals



Concentrate Leaching

- As an energy-conserving alternative to smelting, concentrate leaching may be applied where allowed by mineral type and market demand



Alternative Anode Reaction Technology

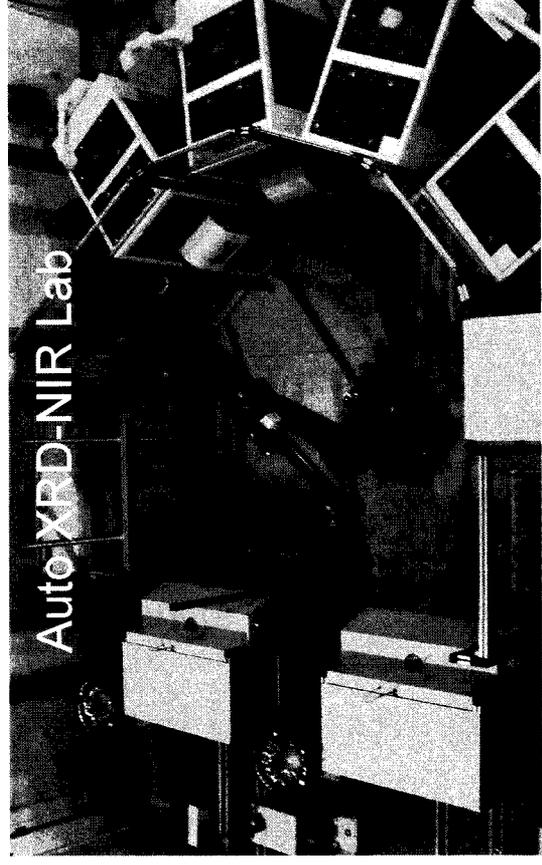
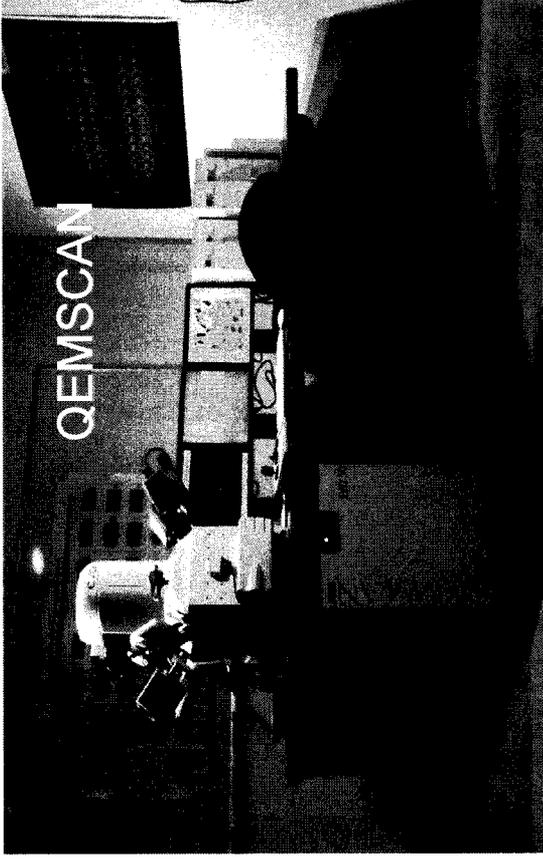
- FCX proprietary electrowinning technology demonstrated at full-scale
- Can reduce the energy required to electrowin copper by 50%



Electrowinning test facility in Morenci

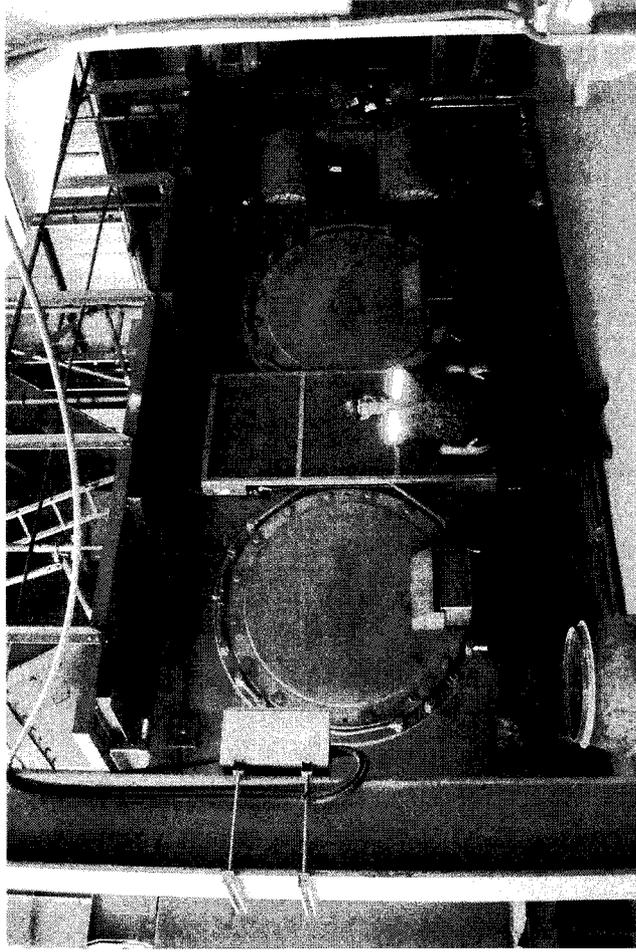
Ore Characterization Helps Improve Mine/Process Energy Efficiency

- Reduce ore variance
- Minimize power used in crushing and grinding
- Reduce steel wear
- Better equipment utilization



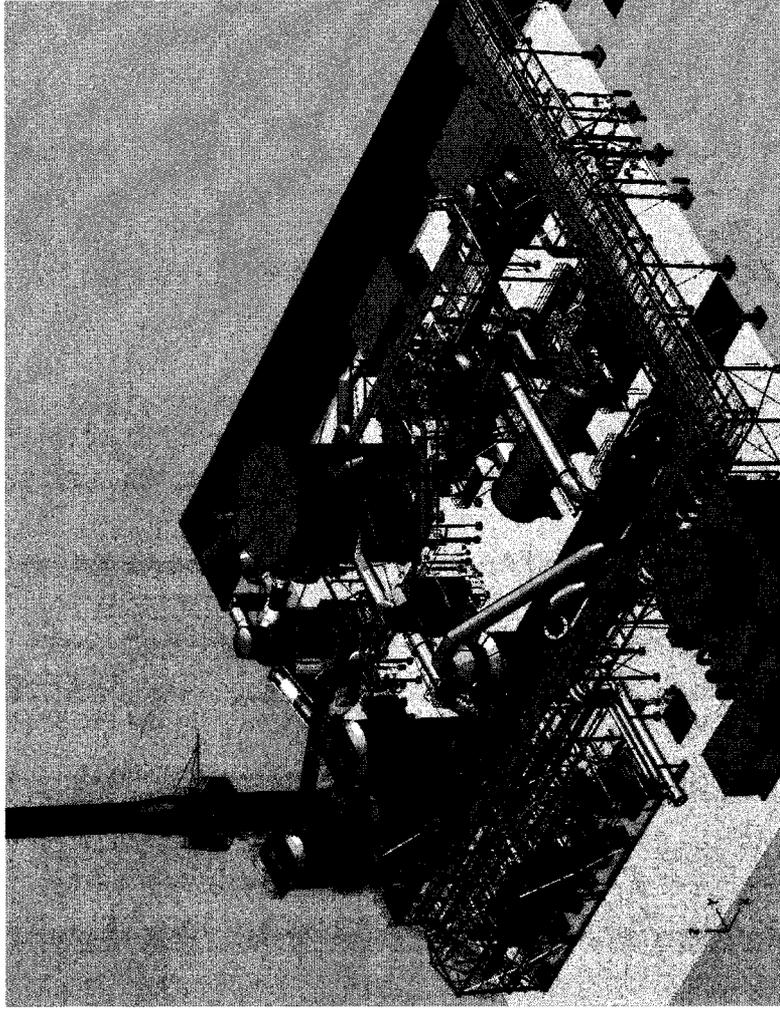
HPGR Cerro Verde and Grasberg

- Freeport-McMoRan first to utilize in copper industry
- Most energy efficient comminution
 - Average:
 - +/- 16% reduction in grinding energy
 - 16-19% reduction in grinding cost
 - Conventional Concentrator-Smelting = 23,170 Btu/lb Cu
 - HPGR-Ball Mill-Smelting = 20,870 Btu/lb Cu
- Due to omission of SAG Mill
 - Save 4-6 kWh/t of manufacturing power needed for SAG steel



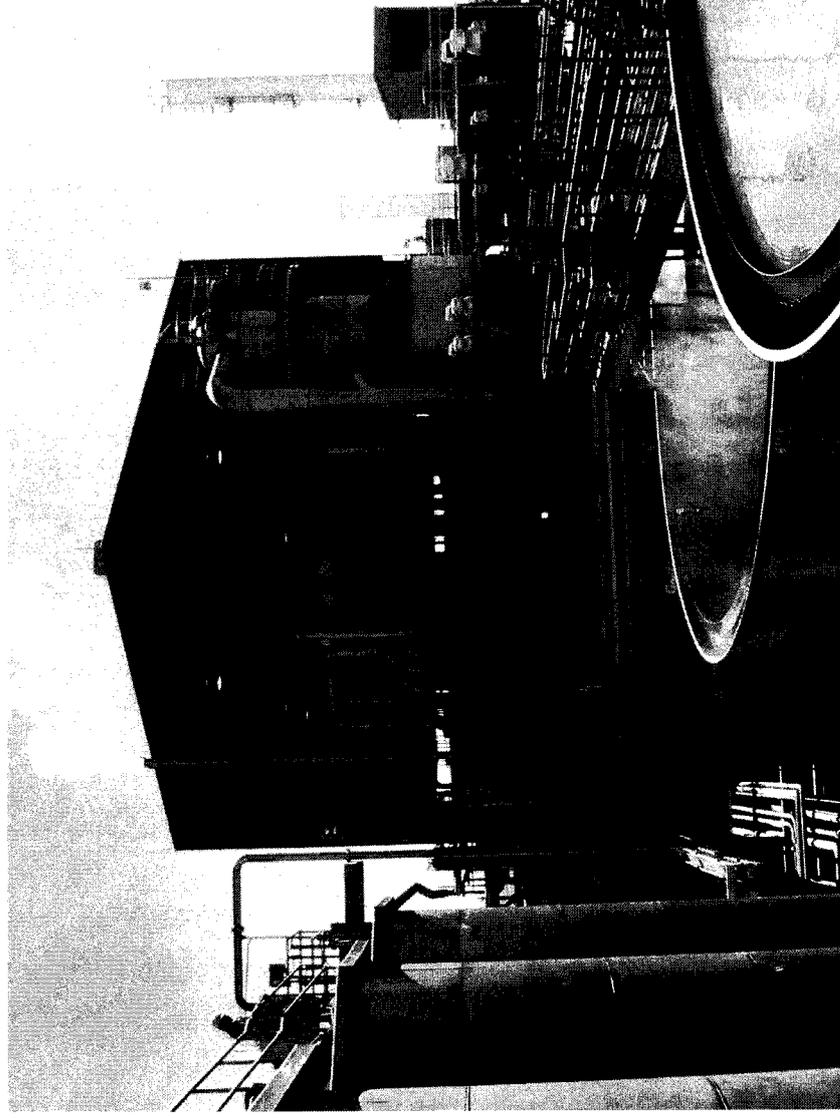
Safford Mine Sulphur Burner/Acid Plant

- Plant produces acid from sulphur for copper recovery process
- Excess process heat generates up to 15MW power for use at facility and on grid



Copper and Molybdenum Pressure Oxidation (POX)

- FCX-developed proprietary technology
- POX system can be converted to process either copper or molybdenum
- Requires 29-36% less energy than copper smelting
- Converts molybdenum concentrate into intermediate product, reducing process steps



Alternative Anode Technology

- FCX-developed proprietary technology for producing electrowon copper cathode
- Reduces energy required to produce electrowon copper by 15%
- Anodes in use at one international and two domestic mining sites
- Estimated annual energy savings: >50 million kWh

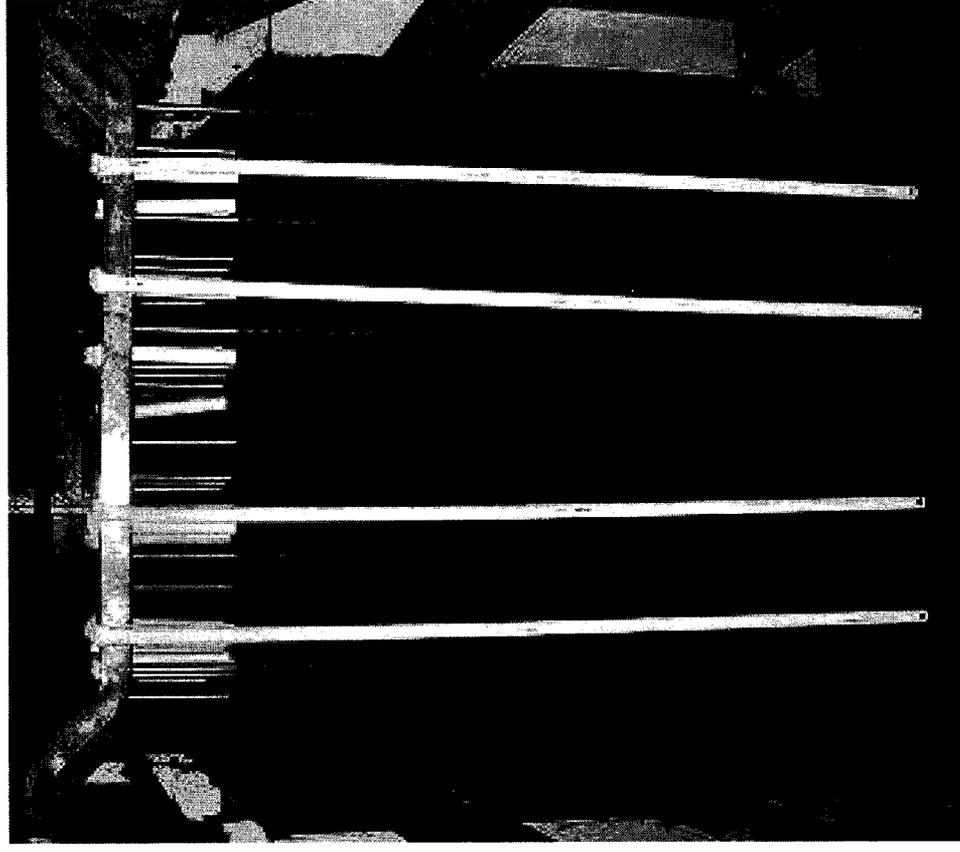


EXHIBIT 2

VIII. Freeport McMoRan Exclusion

During the Open Meeting approving APS's 2012 DSM Plan,⁵ the Commission requested that APS assess the impacts of exempting the Freeport McMoRan ("Freeport") Bagdad mine from the DSMAC and correspondingly eliminating the kWh sales from the calculation of required EE savings.

Freeport has participated in the energy efficiency self-direction option that is available to APS extra-large customers that consume more than 40,000 MWh per year. Self-direction allows participating customers to reserve their DSM contributions, less administrative and other program costs, for their exclusive use to help fund qualifying DSM projects at their facilities. The proposed 2013 DSM plan currently anticipates that Freeport will continue to participate in this option in 2013.

The requested scenario would exempt Freeport from the DSMAC charge, discontinue their eligibility to participate in APS's DSM programs, including self-direction, and reduce APS's required DSM goals, expressed as a percentage of total sales, by removing Freeport's sales from the total amount.

In general, this scenario would reduce both the funding and the goals for energy efficiency, along with the DSMAC revenue requirements and charges, thus providing a benefit to other customers. The specific 2013 impacts on 1) the DSM MWh goal, 2) the DSM budget, 3) the DSMAC revenue requirements, 4) DSMAC revenue collection, 5) the net impact to other customers and 6) DSMAC rates are provided in Table 7.

Under the scenario excluding Freeport, APS's 2013 DSM goal would be reduced from approximately 549,000 to 520,200 MWh, which is 28,800 MWh or 5.2 percent lower than when Freeport is included. The 2013 DSM budget is assumed to be reduced by the same 5.2 percent, or roughly \$4.6 million. Similarly, the 2013 revenue requirements for both DSM in general and the DSMAC would also be reduced by \$4.6 million. As a result, the potential DSMAC charges for 2013 would be reduced for both residential and non-residential customers by 4.6 percent and 6.5 percent respectively.

⁵ March 27, 2012.

EXHIBIT 3

Table 7
Impact of Exempting Freeport from the 2013 DSMAC Charge

	Include Freeport	Exclude Freeport	Change	Percent Change
DSM Goal (MWh)	549,000	520,200	(28,800)	(5.2)
DSM Budget (\$)	87,582,000	82,988,000	(4,594,000)	(5.2)
DSMAC Revenue Requirement (\$)	70,157,000	65,563,000	(4,594,000)	(6.5)
Revenue no Longer Collected through the DSMAC by Excluding Freeport (\$)			788,000	
Net Impact to Other Customers (\$)			(3,806,000)	

Notes: Exempting Freeport from the DSMAC charge:

- a. Reduces DSMAC revenue by \$788,000 per year based on the proposed 2013 rates.
- b. Results in a net benefit of \$3,806,000, which equals a \$4,594,000 reduction in the DSMAC revenue requirement, less a \$788,000 reduction in DSMAC revenue.
- c. Reduces proposed 2013 DSMAC rates from \$0.002515 \$/kWh to \$0.002040 \$/kWh and \$0.948 \$/kWh to \$0.886/kWh.