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# VALUATION OF CERTAIN PROPERTIES HELD BY ARIMETCO, INC.

Prepared for Arimetco, Inc.

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November 5, 1997

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## ZONIA COPPER PROJECT (N34° 20', W 112° 38')

### Location, Access, and Land Status

The 1,901.7 acre Zonia property is situated in T11N, R4W G&SRBM in the Walnut Grove Mining District, Yavapai County, Arizona (Figures 1 and 3). It is comprised of 721.921 acres of 34 patented lode and 39 mill site claims, 63 unpatented lode claims comprising 1,045.522 acres, and 28 unpatented mill site claims covering 134.257 acres. In addition to the Zonia Mine property, the Zonia Mine owns an undivided one-half interest in the Copper Crown claim group (not in the 1,901.7 acres described above), which covers 52 claims covering 1,074.372 acres to the northwest of the Zonia Mine.

The area of the property is covered by the Peeples Valley 7.5 minute and the Prescott 1° x 2° quadrangle sheets of the USGS.

Arimetco, Inc. controls 100% of the Zonia property. There are no underlying royalties.

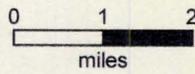
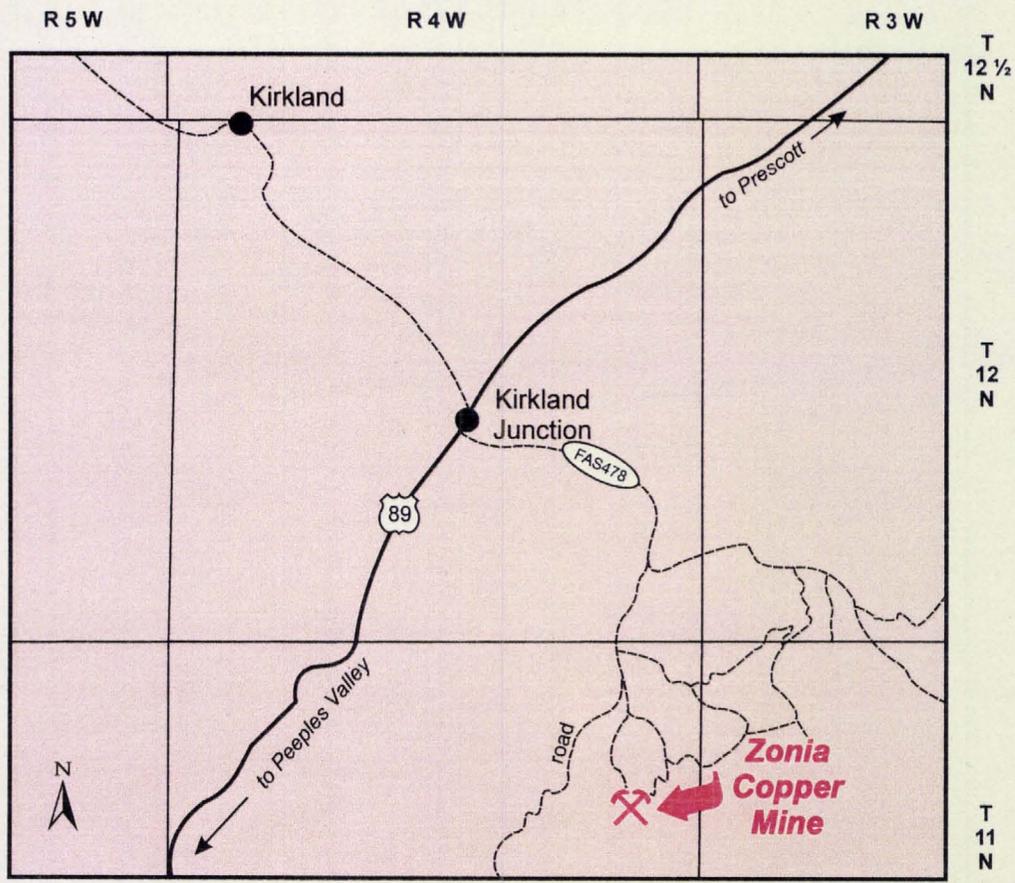
The Zonia property can be reached by sedan from Kirkland Junction on US Highway 89. A graded county road extends 6 miles southeast from Kirkland Junction to the property. The property is roughly 24 miles south southwest of Prescott, Arizona. The nearest rail head is at Kirkland Junction.

Plates 9 and 10 illustrate the Zonia property.

### Geology and Mineralization

The Zonia deposit occurs within a northeast trending band of Precambrian age metavolcanic and metasedimentary schistose rocks which are largely surrounded by batholithic rocks of Proterozoic age. Quaternary volcanics and associated sediments





<b>DMBW, Inc.</b>
<b>Arimetco</b>
Figure 3
<b>Location Zonia Copper Mine</b>
<b>Prescott County, Arizona</b>
October 1997

Plate 9

A - Zonia Pit



B - Zonia Cementation Plant. Unlined pond will be used for SX-EW pregnant solution.

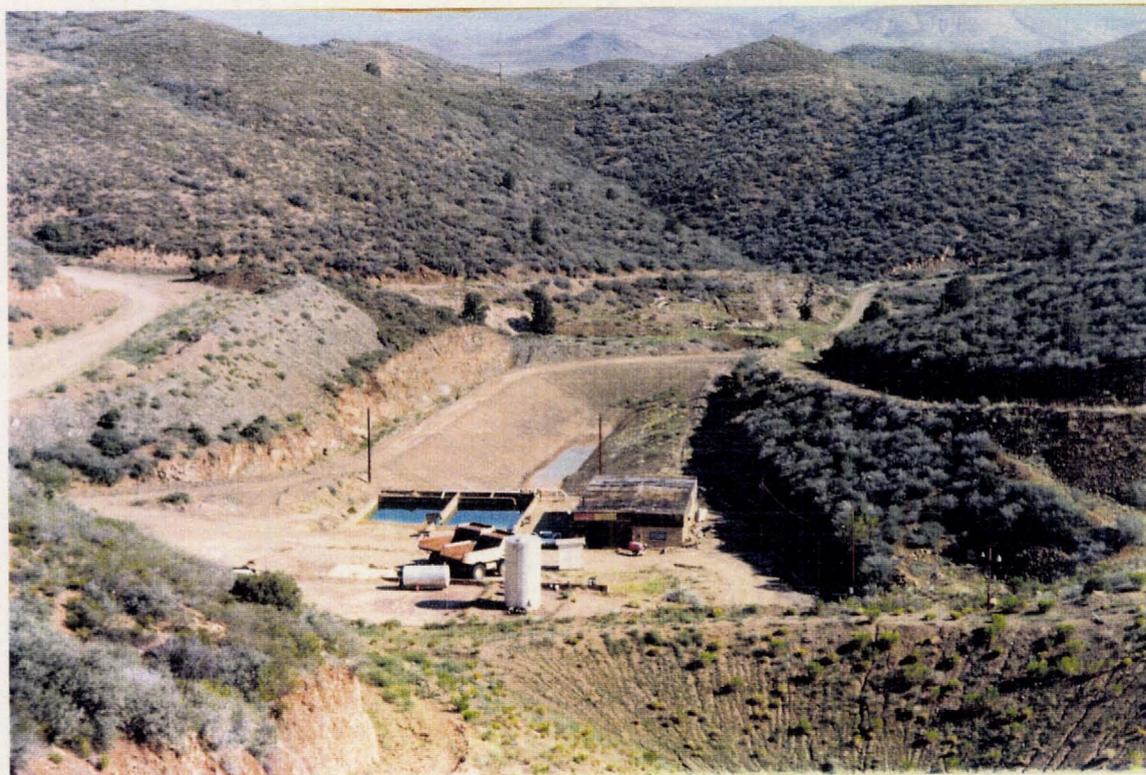


Plate 10

C - Leach Pad #1. Pit is beyond and below hill past pad.



D - Pond above Leach Pad #3. The area of this pond extending up the valley will be used for Leach Pad #4.



cover the metamorphic rocks on the south and west. Rocks in the immediate mine area are quartz sericite schist, meta-andesite, chlorite schist, greenstone, and phyllite. Intrusive rocks include granodiorite, quartz diorite, quartz monzonite, monogranite, and diabase.

Mineralization at Zonia is classified as a porphyry copper deposit hosted in a quartz monzonite porphyry.

Copper mineralization occurs as oxides near surface and as chalcopyrite below the level of oxidation. Strong veins of chalcopyrite and tenorite and local enrichment zones (chalcocite) were exploited by open pit and underground methods as early as the late 1800's.

### History

The property has been intermittently active for over 100 years. In the 1930's the Hammond Copper Company did substantial underground development, but did not go into production. Drilling by the USBM took place in the early 1940's. In 1956 Miami Copper Company acquired the property and did extensive drilling. In 1964 McAlister Fuel Co. acquired the property and did further drilling and pilot scale metallurgical test work. McAlister commenced mining some 7.1 million tons of oxide ore grading 0.6% copper and produced some 33,663,000 pounds of copper from a copper cementation process between 1966 and 1975. In 1983 Antioch Resources Ltd. and Queenstake Resources acquired the property, but did not go into production. In 1988 Zonia Co. of Prescott, Arizona acquired the property. Arimetco, Inc. acquired the property for \$800,000 in late 1992/early 1993.



To date, there have been 11 core and 359 rotary holes drilled for a total of 85,500' of drilling. A total of  $\pm 15,400$  Cu assays have been made.

### Permitting

Aquifer Protection Permit documents for the Zonia operation were filed with ADEQ on February 20, 1995. There have been a number of technical review letters and the single remaining technical item is a stability analysis of the proposed heap leach configuration. This work has been completed by Golder Associates, but no report has been issued.

The final submittal to ADEQ has not been completed due to Arimetco's financial constraints. The technical review stipulated that six monitoring wells need to be drilled prior to the issuance of the Aquifer Protection Permit. Arimetco proposed using triple lined ponds at Zonia.

As of October 1997, the Zonia Aquifer Protection Permit necessary for operating the property is unissued.

The former owner of the Zonia deposit was under orders from Arizona Department of Environmental Quality (ADEQ) to cease discharges of contaminated water from the Zonia property. Negotiations between Arimetco and ADEQ resulted in the installation of a modified pump back system and the construction of interceptor dams to control surface discharges. This interceptor dam work has reportedly been successfully completed.

The permit situation at present is outlined below:

- Aquifer Protection Permit ADEQ Inventory #102330  
1st filing Nov. 8, 1994, 2nd Dec. 23, 1994, 3rd Jan. 23, 1995



Revised Feb. 2, 1995

Application complete March 13, 1995

2nd Eng. Review July 20, 1995

Tech. Cap. Review Aug. 10, 1995

3rd Tech. Review Oct. 2, 1995

- Air Quality Reference #1609 (ADEQ)  
1st filing Mar. 13, 1995  
Application complete Nov. 9, 1995
- Section 404 File #93-600-CL (Army Corp Eng.)  
Issued Mar. 23, 1993  
Renewal date Mar. 23, 1995  
Status: Jan. 6, 1996 letters to ADEQ and Army Corps of Eng. requesting reinstatement
- NDPES Stormwater Runoff Discharge - AZR00B096 (U.S. E.P.A.)  
Issued April 4, 1996

### Processing

Metallurgical testing has been conducted on a number of ore samples from Zonia and results were variable depending upon the time and the organization performing the tests. A review of Zonia testwork indicates that crushing to minus 1 1/2 inches will be necessary to achieve the copper recovery target level of 70 percent. Likewise, the leaching term must be a minimum of 90 days so that the on-off type leaching regime that was recently practiced at Johnson Camp is not applicable to this material. The Zonia ore has considerable acid consumption potential. Recent testing gave acid consumption levels between 32 and 45 lbs of acid per ton of ore (8.8 to 10.6 lbs acid per lb copper extracted). The impact of this acid consumption level upon the leaching regime selected and the potential for heap permeability reduction requires further study.

The engineering design for a 60,000 lb per day solvent-extraction-electrowinning facility and related infrastructure has been completed.



### Resources and Reserves

A Feasibility Study dated May 1995 by Western States Engineering, Tucson, Arizona, states a Reserve for the Zonia project of 34,668,000 tons at 0.366% t Cu, containing 254,154,000 pounds of in situ copper. A revised study by Mine Reserve Associates Inc. (MRA) based upon 85 cent copper and 70% recovery and 0.14% Cu cutoff yielded 47.2 million tons at 0.33% Cu, or 311,520,000 lbs Cu. The Western States study is considered the more appropriate reserve estimation.

There is considerable potential to increase, perhaps to double, these reserves in virtually untested, but favorable, copper stained ground north of the present pit.

### Value Estimates

#### Resource Estimate

Assigning a 79% recovery and 90 cents per pound of copper, as in the Western States Feasibility Study, the Zonia ore has a recoverable value of about \$4.61/t. The Feasibility assumes initial capital cost on the order of \$16.5 million.

The 1995 Western States Feasibility Study (Revised Mine Plan Scenario) suggests an NPV for the Zonia project of \$10.896 million and an IRR of 25.7% at a copper price of \$0.90 per pound with a discount rate of 10%. At \$0.95, the NPV at 10% discount would be \$15.137 million.

An updated cash flow using the Western States Reserves is attached as Appendix F, with a copper price adjusted to the present \$0.95/lb, recovery lowered to a more conservative 70%, and plant production capacity at 60,000 lb/day. The resulting NPV after debt service and discounted at 15% is



\$5,363,000. At 10% and 20% discount the NPV is \$7,491,000 and \$3,924,000. Predebt-service the NPV at a 15% discount is \$4,686,000, say \$4.7 million.

In his review of property transactions since 1992 Harper (op cit PDA) gives 2 cents per pound copper resource as the average price paid. The 177.9 million pounds of recoverable copper at Zonia would then be valued at \$3.6 million (recovery at 70%).

Using the Resource Estimate approach gives:

Western States	\$15.1 million
DMBW	\$ 4.7 million
Price per pound in the ground	\$ 3.6 million

The Western States study uses a 79% recovery which is overly optimistic. DMBW suggests the value for the Zonia property using the Resource Estimate approach is \$4.2 million.

#### Expense Estimate

Arimetco, Inc. purchased the property in late 1992 for \$800,000. The book value as of September 1997 is \$3,100,906. Of this \$538,148 is interest expense and \$95,917 of operating expenses. Neither of these have improved or enhanced the property and are deemed inappropriate for inclusion in an Expense Estimate. The applicable adjusted book value for the Zonia property is then \$2,466,841.

Much of this is represented by earth works, dams, ponds, ditches, etc., which have not decreased in their usefulness or value. The equipment has been independently valued at \$174,000 by Machinery Appraisers Inc. of Tucson,



Arizona. The value of the Zonia property using an Expense Estimate approach is deemed to be \$2,466,841, say \$2,500,000.

#### Market Estimate

The Zonia property consists of 2,976 acres in an area with a long mining history. There are 35-50 million tons of oxide copper resource on the property and potential to increase this through additional exploration.

The Zonia has a much smaller resource than any of the recent transactions noted in Table 1. The closest in size is the Carlota deposit bought by Cambior in 1991.

Cambior paid \$10 million in cash and will pay an additional \$5 million upon production. The \$10 million would be 1.9% of the gross in situ value (at the time of the sale).

Zonia has about one half of the resource of Carlota (at the time of the sale). Using Carlota as a yardstick, suggests a value for Zonia of \$5 million.

The next closest would be the Phelps Dodge purchase of AZCO's Sanchez and Piedras Verdes properties in late 1995. Using this as a yardstick, we can arrive at a market estimate of the value of the Zonia property.

The Sanchez deal involved 444 million metric tonnes of 0.35% Cu. Zonia is of a similar grade, but only about a tenth of the size of Sanchez. This would suggest a price of about \$4 million. On the other hand, Zonia has been mined in the past. The deposit is better known from engineering, geological, and processing viewpoints. This would warrant some premium.

From Table 1 we can see that metal properties are trading at 0.3% to 1.9% of their in situ value. The Sanchez traded at 1.5% the in situ value. Granting a



premium to Zonia, as per the preceding paragraph, a buyer would offer 1.75% of the in situ value. This would value the Zonia at \$4.2 million.

Using the Market Estimate approach DMBW would value Zonia at say \$4.5 million.

**Fair Market Value**

Value for Arimetco, Inc's. Zonia property has been arrived at through the following three approaches:

Resource Estimate	\$4,200,000
Expense Estimate	\$2,500,000
Market Estimate	\$4,500,000

The Expense Estimate allows no premium for the resource and potential at Zonia and, thereby, underestimates the value. The Resource and Market Estimates, which approximate one another, are deemed more appropriate.

DMBW considers the Fair Market Value of the Zonia property to be \$4,500,000.

