

WESTERN SMELTERS

ARIZONA

American Smelting and Refining Company, Hayden Plant, Hayden, Arizona 85235  
Tel. 602-356-7717

Copper; does custom smelting

Inspiration Consolidated Copper Company, Inspiration Mines, Inspiration,  
Arizona 85537, Tel. 602-473-2411

Copper; does custom smelting

Kennecott Copper Corp. Metal Mining Division, Ray Mines Div., Hayden,  
Arizona 85235, Tel. 602-356-7811

Copper

Magma Copper Company, P. O. Box M, San Manuel, Arizona 85631,  
Tel. 602-385-2201

Copper

Phelps Dodge Corporation, Douglas Reduction Works, Douglas, Arizona 85607,  
Tel. 602-364-5612

Copper; does custom smelting

Phelps Dodge Corporation, Morenci Branch, Morenci, Arizona 85540,  
Tel. 602-865-3772

Copper

Phelps Dodge Corporation, New Cornelia Branch, Ajo, Arizona 85321,  
Tel. 602-387-7451

Copper

IDAHO

The Bunker Hill Co., P. O. Box 29, Kellogg, Idaho 83837, Tel. 208-784-1261

Lead; does custom smelting

The Bunker Hill Co., Electrolytic Zinc Plant, same address as above.

Zinc

MONTANA

American Smelting and Refining Company, East Helena Plant, East Helena, Mont. 59635, Tel. 406-227-5311

Copper, lead, silver, gold; does custom smelting

The Anaconda Company, Anaconda Reduction Dept., Anaconda, Mont. 59711, Tel. 406-563-5211

Copper; does custom smelting

NEVADA

Curtis Nevada Mines, Inc., P. O. Box 133, Topaz, Calif., 96133, Tel. 702-747-2147 & 702-329-4652

Rare Earths, Platinum Group Metal, Gold & Silver.

Kennecott Copper Corp. Metal Mining Division, Nevada Mines Div., McGill, Nevada 89318, Tel. 702-235-7741

Copper

NEW MEXICO

Kennecott Copper Corp. Metal Mining Division, Chino Mines Div., Hurley, N. Mex. 88043, Tel. 505-537-3381

Copper

OREGON

The Hanna Mining Company, Nickel Mountain Mine & Hanna Smelter, Riddle, Ore. 97469, Tel. 503-874-2256

Nickel

TEXAS

American Smelting and Refining Company, El Paso Smelting Works,  
P. O. Box 1111, El Paso, Texas 79999, Tel. 915-532-6515,

Lead and copper; does custom smelting

American Smelting and Refining Company, Amarillo Plant, P. O.  
Drawer 1111, Amarillo, Texas 79105, Tel. 806-372-1227,

Zinc; does custom smelting

UTAH

Kennecott Copper Corp. Metal Mining Division, Utah Copper Div.,  
P. O. Box 11299, Salt Lake City, Utah 84111, Tel. 801-322-1533

Copper

WASHINGTON

American Smelting and Refining Company, Tacoma Plant, P. O. Box 1677,  
Tacoma, Washington 98401, Tel. 206-759-3551

Copper; does custom smelting

COLORADO

Delta Smelting & Refining  
Refining Concentrates  
W.A. (Bill) Uski  
912 East Briarwood Circle South  
Littleton, CO 80122  
(303) 798-2844

SR

# Smelter Ore Purchases and General Contract Agreements.

Prepared by  
Western Field Office  
Spokane, WA

July 1, 1980

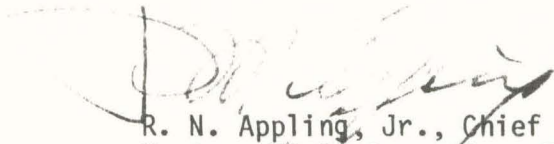


Small mining operators often ask us about current ore and ore concentrate purchasing practices of various smelters and refineries.

Purchasing practices change from time to time; therefore, to assemble the best information available we contacted several Northwest smelters and refineries.

The responses we received have been summarized by commodities - Copper, Zinc-Lead, and Tungsten. The booklet, or booklets, sent you are on the commodity you requested. Unfortunately, Bunker Hill and Engelhard Minerals and Chemicals Corporation did not respond to our inquiries.

We trust this booklet answers your questions and serves your needs. If you have any questions about the booklet or subject, please direct them to George Krempasky or Dave Lockard of this office. The telephone number is (509) 484-1610.



R. N. Appling, Jr., Chief  
Western Field Operations Center  
U.S. Bureau of Mines  
East 315 Montgomery Avenue  
Spokane, Washington 99207

Copper

ASARCO  
Tacoma Plant

Copies of ASARCO's Tacoma plant purchasing schedules for ore, concentrates, and silica ore are appended.

Presently, they are not purchasing copper ores. However, they do purchase ore for use as a converter flux. This material must be 80 percent or higher in silica content and contain sufficient gold/silver values to pay mining, freight, and smelting costs. Presently, they purchase 600 to 800 tons of this material per month.

Also, the Tacoma plant purchases small amounts of gold, silver or copper concentrates locally. For further information contact:

Mr. L. W. Lindquist  
ASARCO Inc.  
Tacoma Plant  
P.O. Box 1677  
Tacoma, WA 98401  
Telephone (206) 759-3551

Purchasing of large quantities of concentrate is done by the Corporate Ore Purchasing Department in New York; the address is:

ASARCO Inc.  
120 Broadway  
New York, NY 10005



SHIPPER \_\_\_\_\_

ADDRESS \_\_\_\_\_

MINE \_\_\_\_\_

LOCATION \_\_\_\_\_

PRODUCT CONCENTRATES

R. R. STATION \_\_\_\_\_

The following purchase terms are subject to the General Clauses shown on the back of this sheet and are subject to change on 30 days notice. Unless shipments are begun within 30 days, this quotation is automatically cancelled.

DELIVERY

Freight prepaid f.o.b. rail cars at unloading bins of the ASARCO Incorporated smelter at Tacoma, Washington. The rates quoted are based on shipment in open-top gondola equipment. Extra unloading charges of up to \$2.00 per wet ton will be assessed for product received in other equipment.

PAYMENTS

GOLD

Deduct .02 troy ounce per dry ton and pay for 92.5 % of the remaining gold content at the daily London Final Gold Quotation, as published in Metals Week, averaged for the third calendar month following date of delivery of product, less a deduction of 400.0¢ per troy ounce of payable gold.

SILVER

Deduct 1.0 troy ounces per dry ton and pay for 95 % of the remaining silver content at the Handy and Harman New York Quotation for refined silver, as published in Metals Week, averaged for the third calendar month following date of delivery of product, less a deduction of 25.0 ¢ per ounce.

COPPER

Deduct from the wet copper assay 1.0 units and pay for 97.5 % of the remaining copper at the daily quotation for "M<sub>1</sub>" Copper Composite as published in Metals Week, (currently \_\_\_\_\_), averaged for the third calendar month following date of delivery of product, less a deduction of 12.0 ¢ per pound of copper accounted for. Nothing paid for copper if less than 1.0 % by wet assay.

NO PAYMENT WILL BE MADE FOR ANY METAL OR CONTENT EXCEPT AS ABOVE SPECIFIED.

DEDUCTIONS

SMELTING DEDUCTION

The Smelting deduction shall be \$ \$85.00  
 (a) A cost of employment of \$ -- per hour at Tacoma Plant  
 (b) A cost of fuel of -- ¢ per MMBTU at Tacoma Plant  
 (c) A cost of electric power of -- mills per kwh at Tacoma Plant

SMELTING DEDUCTION ADJUSTMENT

- (A) Increase or decrease smelting deduction by -- ¢ for each 1¢ per hour that the average hourly cost of employment during the calendar month including date of delivery is greater or less than \$ --, fractions in proportion.
- (B) Increase or decrease smelting deduction by -- ¢ for each 1¢ per MMBTU that the average cost of fuel used during the calendar month including date of delivery is greater or less than -- ¢, fractions in proportion.
- (C) Increase or decrease smelting deduction by -- ¢ for each 1 mill per kwh that the cost of electric power used during the calendar month including the date of delivery is greater or less than -- mills, fractions in proportion.

SMALL LOT CHARGE

Minimum charge \$ 25.00 per lot. For product received in sacks or drums charge \$ 10.00 per ton of material as received.

- LEAD
- ZINC
- ARSENIC
- ANTIMONY
- BISMUTH
- NICKEL
- MOISTURE
- ALUMINA
- FREIGHT

Allow \_\_\_\_\_ units free; charge for excess at \_\_\_\_\_ per unit)  
 Allow 3.0 units free; charge for excess at 50¢ per unit)  
 If -- units or more, charge for all at 200¢ per unit)  
 Allow -- units free; charge for excess at 150¢ per unit)  
 Allow .05 units free; charge for excess at 1000¢ per unit)  
 Allow .3 units free; charge for excess at 500¢ per unit)  
 Allow 5.0 units free; charge for excess at 50¢ per unit)  
 " 3.0 " " " " " " 50¢ " " )

FRACTIONS IN PROPORTION

All railroad freight and delivery charges for account of Shipper. Deduct from settlement freight and other advances made by Buyer.



GENERAL CLAUSES GOVERNING ALL OPEN SCHEDULES

1. **TAXES:** All taxes or other governmental charges, national, local or municipal, now or hereafter imposed in respect to or measured by the product purchased hereunder, or the production, extraction, smelting, refining, sale, transportation, proceeds or value thereof or of the metals derived therefrom, other than income taxes levied upon the BUYER, shall be for the account of the SELLER and shall be deducted from the purchase price payable hereunder.
2. **SAMPLING:** Weighing, moisture and ore sampling (at which SELLER or a representative may be present) as done by the BUYER according to standard practice, promptly after receipt of product, will be accepted as final. The absence of SELLER or a representative shall be deemed a waiver of the right in each instance. After sampling, the product may be placed in process, commingled, or otherwise disposed of by BUYER.
3. **ASSAYING:** As soon as available, BUYER will furnish a pulp sample to SELLER, or to SELLER's representative or the firm handling SELLER's assay work. On SELLER's request BUYER will make assay comparison with SELLER, or his representative, by exchange of assay certificates over the counter. Comparison may be made by exchange of certificates through the mail, and in such event, BUYER and SELLER will mail to each other their respective assay certificates on the sixth day following date appearing on smelter pulp sample envelope, or other such date as may be agreed upon. Gold and silver assays are to be determined by commercial fire assay method, unadjusted for slag loss and cupel absorption, and umpire assayers shall be so informed. The following splitting limits will be used for comparison of assays under either exchange method listed above:

Gold	-	.02 troy ounce per ton	Lead	-	.5%	Antimony	-	.2%
Silver	-	.5 troy ounce per ton	Zinc	-	.5%	Bismuth	-	.02%
Copper	-	.3%	Arsenic	-	.3%	Nickel	-	.1%

If assays of BUYER and SELLER are within limits above specified, settlement assays will be determined by averaging the two results. If assay comparisons indicate differences greater than the above limits, control sample shall be submitted to umpire. Umpires shall be selected in rotation from a list mutually agreed upon, whose assays shall be final if within the limits of the assays of the two parties; and, if not, the assays of the party nearer to the umpire shall prevail. Losing party shall pay cost of umpire. In case of SELLER's failure to make or submit assays, BUYER's assays will govern.

4. **SMALL LOT:** The rates quoted herein are for carload lots. On truck shipments and/or any lot containing less than 20 tons, there will be a handling charge of \$25.00.
5. **REFINED COPPER FREIGHT:** The rates quoted herein are based on present published all rail freight rates on refined copper from ASARCO Incorporated, Tacoma, Washington to New York City. Any increase or decrease is for account of SELLER, and proper deduction or credit will be made accordingly.
6. **DEFINITIONS:** In this schedule the word "ton" means a ton of two thousand pounds avoirdupois; the word "ounce" as referring to gold and silver, means the troy ounce; and the word "unit" means one percent of a ton, or twenty pounds avoirdupois.
7. **FORCE MAJEURE:** Performance of this agreement is subject to any delays caused by strikes or other disabling causes beyond the control of either party.
8. **FREIGHT AND ADVANCES:** All freight and other charges paid by BUYER for SELLER's account will be considered as an advance payment and will subject to an interest charge. Such interest will be charged from the date of the advance payment to the date of final settlement at a rate of 1.25 times the rate quoted to Asarco from time to time by the Chase Manhattan Bank, N. A.
9. **SELLER** should consign his shipments to ASARCO Incorporated, Tacoma, Washington

and it is required that the original bill of lading covering each such shipment be delivered to the BUYER promptly on release of the shipment to the carrier. Full details as to the disposition of settlement returns, including royalty instructions if any, must be furnished by SELLER to BUYER before shipments can be processed.

SHIPPER \_\_\_\_\_ ADDRESS \_\_\_\_\_  
MINE \_\_\_\_\_ LOCATION \_\_\_\_\_  
PRODUCT SILICIOUS FLUXING ORE R. R. STATION \_\_\_\_\_

The following purchase terms are subject to the General Clauses shown on the back of this sheet and are subject to change on 30 days notice. Unless shipments are begun within 30 days, this quotation is automatically cancelled.

DELIVERY Freight prepaid f.o.b. rail cars at unloading bins of the ASARCO Incorporated smelter at Tacoma, Washington. The rates quoted are based on shipment in open-top gondola equipment. Extra unloading charges of up to \$2.00 per wet ton will be assessed for product received in other equipment.

PAYMENTS

GOLD Deduct .02 troy ounce per dry ton and pay for 92.5 % of the remaining gold content at the daily London Final Gold Quotation, as published in Metals Week, averaged for the 2nd calendar week following date of delivery of product, less a deduction of 400.0¢ per troy ounce of payable gold.

SILVER Deduct 1.0 troy ounces per dry ton and pay for 95.0 % of the remaining silver content at the Handy and Harman New York Quotation for refined silver, as published in Metals Week, averaged for the 2nd calendar week following date of delivery of product, less a deduction of 25.0 ¢ per ounce.

COPPER Deduct from the wet copper assay 1.0 units and pay for 97.5 % of the remaining copper at the daily quotation for "MW" Copper Composite as published in Metals Week, (currently \_\_\_\_\_), averaged for the 2nd calendar week following date of delivery of product, less a deduction of 12.0 ¢ per pound of copper accounted for. Nothing paid for copper if less than 1.0 % by wet assay.

NO PAYMENT WILL BE MADE FOR ANY METAL OR CONTENT EXCEPT AS ABOVE SPECIFIED.

DEDUCTIONS

SILICA For ores of a siliceous character, add to the base charge 50.0 cents for each unit deficiency in available silica below 80.0 per cent, fractions in proportion. Silica Bonus of 50.0¢ per unit for excess above 80.0% available silica.

SMALL LOT CHARGE Minimum charge \$25.00 per lot. For product received in sacks or drums charge \$10.00 per ton of material as received.

LEAD	Allow	---	units free; charge for excess at	---	per unit)	
ZINC	Allow	<u>3.0</u>	units free; charge for excess at	<u>50.0¢</u>	per unit)	
ARSENIC	If	--	units or more, charge for all at	<u>200.0¢</u>	per unit)	
ANTIMONY	Allow	--	units free; charge for excess at	<u>150.0¢</u>	per unit)	FRACTIONS IN PROPORTIO
BISMUTH	Allow	<u>.05</u>	units free; charge for excess at	<u>1000.0¢</u>	per unit)	
NICKEL + Cobalt	Allow	<u>.40</u>	units free; charge for excess at	<u>500.0¢</u>	per unit)	
MOISTURE	Allow	<u>5.0</u>	units free; charge for excess at	<u>50.0¢</u>	per unit)	
ALUMINA	"	<u>3.0</u>	" " " " " "	<u>50.0¢</u>	" " " " " " " " " " " "	

All railroad freight and delivery charges for account of Shipper. Deduct from settlement freight and other advances made by Buyer.



SHIPPER \_\_\_\_\_  
MINE \_\_\_\_\_  
PRODUCT ORE

ADDRESS \_\_\_\_\_  
LOCATION \_\_\_\_\_  
R. R. STATION \_\_\_\_\_

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DELIVERY

Freight prepaid f.o.b. rail cars at unloading bins of the ASARCO Incorporated smelter at Tacoma, Washington. The rates quoted are based on shipment in open-top gondola equipment. Extra unloading charges of up to \$2.00 per wet ton will be assessed for product received in other equipment.

PAYMENTS

GOLD

Deduct .02 troy ounce per dry ton and pay for 92.5 % of the remaining gold content at the daily London Final Gold Quotation, as published in Metals Week, averaged for the third calendar month following date of delivery of product, less a deduction of 400.0¢ per troy ounce of payable gold.

SILVER

Deduct 1.0 troy ounces per dry ton and pay for 95 % of the remaining silver content at the Handy and Harman New York Quotation for refined silver, as published in Metals Week, averaged for the third calendar month following date of delivery of product, less a deduction of 25.0¢ per ounce.

COPPER

Deduct from the wet copper assay 1.0 units and pay for 97.5 % of the remaining copper at the daily quotation for "MW" Copper Composite as published in Metals Week, (currently \_\_\_\_\_), averaged for the third calendar month following date of delivery of product, less a deduction of 12.0 ¢ per pound of copper accounted for. Nothing paid for copper if less than 1.0 % by wet assay.

NO PAYMENT WILL BE MADE FOR ANY METAL OR CONTENT EXCEPT AS ABOVE SPECIFIED.

DEDUCTIONS

SMELTING DEDUCTION

The Smelting deduction shall be \$ 60.00  
(a) A cost of employment of \$ -- per hour at Tacoma Plant  
(b) A cost of fuel of -- ¢ per MMBTU at Tacoma Plant  
(c) A cost of electric power of -- mills per kwh at Tacoma Plant

SMELTING DEDUCTION ADJUSTMENT

- (A) Increase or decrease smelting deduction by -- ¢ for each 1¢ per hour that the average hourly cost of employment during the calendar month including date of delivery is greater or less than \$ --, fractions in proportion.
- (B) Increase or decrease smelting deduction by -- ¢ for each 1¢ per MMBTU that the average cost of fuel used during the calendar month including date of delivery is greater or less than -- ¢, fractions in proportion.
- (C) Increase or decrease smelting deduction by -- ¢ for each 1 mill per kwh that the cost of electric power used during the calendar month including the date of delivery is greater or less than -- mills, fractions in proportion.

SMALL LOT CHARGE

Minimum charge \$ 25.00 per lot. For product received in sacks or drums charge \$ 10.00 per ton of material as received.

LEAD  
ZINC  
ARSENIC  
ANTIMONY  
BISMUTH  
NICKEL + Cobalt  
MOISTURE  
ALUMINA  
FREIGHT

Allow \_\_\_\_\_ units free; charge for excess at \_\_\_\_\_ per unit)  
Allow 3.0 units free; charge for excess at 50¢ per unit)  
If -- units or more, charge for all at 200¢ per unit)  
Allow -- units free; charge for excess at 150¢ per unit)  
Allow .05 units free; charge for excess at 1000¢ per unit)  
Allow .3 units free; charge for excess at 500¢ per unit)  
Allow 5.0 units free; charge for excess at 50¢ per unit)  
" 3.0 " " " " 50¢ " " " " )

FRACTIONS IN PROPORTION

All railroad freight and delivery charges for account of Shipper. Deduct from settlement freight and other advances made by Buyer.

TONNAGE

Limited to



KENNECOTT  
Nevada Mines Division

A copy of Kennecott's Nevada Mines Division current purchasing schedule for gold and silver ores is appended.

This plant will consider custom/toll smelting of copper concentrates, copper precipitates, high grade direct smelting ores, flux ores, and metallurgical limestone.

Also, the plant has an empty 700 tpd concentrator with flotation, and some spare floor space for gravity concentration if necessary. They prefer a copper ore low in Pb/Zn/As content and in sufficient quantity to sustain a 5-day week, 700 tpd operation. They prefer to smelt all concentrates produced in their own smelter. They would consider milling low grade copper ores that are high in precious metals. The average milling cost would be plus or minus \$15 per ton ore.

The plant at McGill is accessible by railroad and is located on US 93. Prospective sellers should contact:

Mr. J. B. Rasmussen  
Kennecott Mineral Company  
Nevada Mines Division  
McGill, Nevada 89318  
Telephone: (702) 235-7741

BASIS FOR THE PURCHASE OF GOLD AND SILVER ORES

TREATMENT CHARGE: \$70.00 per dry ton

MOISTURE: Additional charges of \$2.00/DST for each one percent over 6% moisture. Maximum H<sub>2</sub>O no greater than 8%. Fractions prorated.

SIZE OF MATERIAL: No material shall be accepted if the particle size is over 2 inches.

GOLD: Deduct .025 oz/DST payment for 88% of remaining gold content of assay.

SILVER: Deduct 1.0 oz/DST, payment for 87% of remaining silver content of assay.

COPPER: Deduct 1% (20 pounds) per DST, pay for 90% of remaining copper content.

SAMPLING: A charge of \$25.00 per lot for sampling and handling of samples.

SPLITTING LIMITS: Cu 0.30%; Ag 0.20 oz/T; Au 0.02 oz/T

- If the assays (seller and buyer) are within the splitting limits, the buyer's assay will govern.
- If the assays (seller and buyer) are outside the splitting limits, a sample goes to umpire and the middle assay will be used for settlement.
- The assay furthest from the umpire assay pays cost of umpiring.

REFINING CHARGES: Deduct \$3.00/oz of accountable gold.  
Deduct \$1.35/oz of accountable silver.  
Deduct \$0.18/lb of accountable copper.

PAYMENT & PRICING: Made 21 weeks after week of receipt and acceptance of material on plant (NMD).

Gold: Final London gold settlement quotation as published in Metals Week, less \$3.00 per ounce refining charge, averaged for the 20th week after week of receipt and acceptance. Payment during 21st week after week of receipt and acceptance.

Silver

Handy & Harman, New York quotation for refined silver, less \$1.35/ounce refining charge, averaged for the 20th week after week of receipt and acceptance. Payment during 21st week after week of receipt and acceptance.

Copper

COMEX settlement price for copper, less \$0.18/lb averaged for the 20th week after week of receipt and acceptance. Payment during 21st week after week of receipt and acceptance.

SETTLEMENT:

Based on the content of material received in each lot; i.e., truck load, rail carload, standard sampling and assaying procedures at the smelter (NMD) will govern.

DELETERIOUS  
ELEMENTS:

NMD reserves the right to add additional charges for any element contained in the concentrates which is not accounted for above, but which NMD considers to be deleterious either to the smelting or refining process. NMD will advise customers of such charges before accepting the material.

List of penalties for:

Pb - Maximum 1.0% - deduct \$1.00 per 0.1 of 1% Pb over 0.5%.

As - Maximum 0.3% - deduct \$1.00 per 0.1 of 1% of As over 0.05%.

Bi - Maximum 0.1% - deduct \$1.00 per 0.1 of 1% of Bi over 0.05%.

Sb - Maximum 0.3% - deduct \$1.00 per 0.1 of 1% of Sb over 0.05%.

Zn - Maximum 1.0% - deduct \$1.00 per 0.1 of 1% Zn over 0.5%.

NEVADA MINES DIVISION:

- (1) Reserve right to change prices and terms without notice.
- (2) Buy only if NMD is in need of material at the time.

JBR

Effective April 1, 1980



INSPIRATION CONSOLIDATED COPPER COMPANY

A copy of Inspiration Consolidated Copper Company's current purchasing schedule for copper concentrates and cement copper is appended.

This company prefers a copper concentrate having 25 to 30 percent Cu and containing little or no lead, zinc, bismuth, antimony, or arsenic. Copper precipitates (cement copper) should assay 60-75 percent Cu and be low in any type of chlorides.

For further information contact:

Mr. Alan Binegar, Asst. Superintendent  
Inspiration Consolidated Copper Company  
Inspiration, Arizona 85537

Smelter Schedule - Cement Copper

Delivery: Delivered to plant in Miami, Arizona F.O.B. Inspiration.

Price: The full copper content, less 2.5 units per dry short ton, and pay for 98 percent of the remaining copper at the quotation for Inspiration cathode, averaged for the month, less a deduction of 20 cents per pound of copper accounted for.

Moisture: Allow 15 units free, charge for excess at 50 cents per unit.

Payment: Buyer shall make a provisional payment of 90% of the estimated value of each lot, upon arrival of each lot at the smelter sample plant. The provisional value shall be based on the price for Inspiration cathode, averaged for the month, on date of delivery, and on estimated assay, weight and moisture. Final balance shall be paid immediately upon determination of final weights, assays and prices.

Weighing, Sampling and Assaying Weighing, sampling and moisture determination as performed by Buyer at smelter in accordance with standard practices at smelter will govern. A moisture sample will be taken from each gondola car or truck shipment.

Seller may, at its option and expense, be represented at smelter by an independent laboratory or other person regularly engaged in performing such services for the general public. Smelter will provide to Seller or its representative one dry pump sample per lot.

Assays shall be performed by Seller's and Buyer's respective laboratories and the results thereof will be exchanged and compared in the customary manner. Any assay submitted by either party to the other party or to an umpire shall be certified as having been performed in a properly equipped laboratory under customary conditions and in the customary manner by the person having active supervision of such laboratory.

If the variation between the two results does not exceed the "splitting limit" of 0.30% for copper, settlement shall be established on the basis of the average of the results of the two assays.

Should the variation exceed the above splitting limit, a reserve sample shall be submitted by smelter for umpire assay to an independent laboratory selected below, and the middle assay result of the three results shall be the basis of final settlement for each element.

Should the umpire result coincide with that of one of the parties, the umpire result shall govern. The cost of umpire assay determination shall be borne by the party whose submitted result is further from that of the umpire, and if the umpire result is the exact mean of the results submitted by each of the parties, the cost of umpire shall be borne equally by both parties.



### Deductions

The smelting deduction shall be \$91.23 per dry ton based on:

- (a) The cost of employment of \$12.16 per hour.
- (b) The cost of electric power @ 1.50 cents per kwh
- (c) The cost of fuel of 199 cents per MCF.

#### Smelting Deduction Adjustment

- (a) Increase or decrease smelting deduction by 28.79 cents for each 1% change in the hourly average direct labor rate during the calendar month.
- (b) Increase or decrease by 6.59 cents for each 1% change in the cost of on kwh of uninterruptible electric power used during the calendar month.
- (c) Increase or decrease smelting deduction by 5.74 cents for each 1% change in the cost of fuel used during the calendar month.

LEAD: Allow 5.0 units free, charge for excess at \$1.50 per unit.

ZINC: Allow 5.0 units free, charge for excess at \$1.50 per unit.

ARSENIC: If 0.5 units or more, charge for all at \$3.00 per unit.

ANTIMONY: Allow 0.2 units free, charge for excess at \$3.00 per unit.

BISMUTH: Allow 0.05 units free, charge for excess at \$10.00 per unit.

NICKEL: Allow 0.3 units free, charge for excess at \$5.00 per unit.

MOISTURE: Allow 10.0 units free, charge for excess at \$.50 per unit.

Zinc, Lead

Gold, Silver

ASARCO  
East Helena Plant

Copies of ASARCO's East Helena plant current buying schedule for lead concentrates and siliceous gold-silver ore are appended.

The East Helena plant is principally a custom lead smelter that uses 600 to 1,000 tons per month of siliceous gold-silver ore as flux. However, they give first preference to their old customers.

In 1978, this plant processed material from 50 small Montana shippers and 30 from Idaho. Refer all inquiries to:

Mr. P. A. DeSantis, Manager  
ASARCO Inc.  
East Helena Plant  
East Helena, MT 59635  
Telephone: (406) 227-5311



East Helena, Montana 59635

DATE EFFECTIVE 11-16-79

SHIPPER \_\_\_\_\_ ADDRESS \_\_\_\_\_  
 MINE \_\_\_\_\_ LOCATION \_\_\_\_\_  
 PRODUCT LEAD ORES & CONCENTRATES R. R. STATION \_\_\_\_\_

The following purchase terms are subject to the General Clauses shown on the back of this sheet and are subject to change on 30 days notice. Unless shipments are begun within 30 days, this quotation is automatically cancelled.

DELIVERY: Freight prepaid f.o.b. rail cars at unloading bins of the ASARCO Incorporated Smelter at East Helena; Montana. The rates quoted are based on shipment in open-top gondola equipment. Extra unloading charges of up to \$2.00 per wet ton will be assessed for product received in other equipment.

## PAYMENTS

GOLD: Deduct 0.02 troy ounces per dry ton and pay for 95 % of the remaining gold content at the daily London Final Gold Quotation, as published in Metals Week, averaged for the second calendar month following date of delivery of product, less a deduction of 250 ¢ per troy ounce of payable gold. All purchases of gold will be subject to United States Governmental regulations pertaining to transactions in gold.

SILVER: Deduct 1.0 troy ounces per dry ton and pay for 95 % of the remaining silver content at the Handy and Harman New York Quotation for refined silver, as published in Metals Week, averaged for the second calendar month following date of delivery of product, less a deduction of 15 ¢ per ounce.

LEAD: Deduct from the wet lead assay 1.5 units and pay for 95 % of the remaining lead at quotations for common domestic lead for delivery in New York, as published in Metals Week, averaged for the second calendar month following date of delivery of product, less a deduction of 8.3 ¢ per pound of lead accounted for. The quantity of lead not paid for shall equal a minimum of 3.0 units per net dry ton.

COPPER: Deduct from the wet copper assay 1.3 units and pay for 60 % of the remaining copper at the daily quotation for MW Copper Composite, as published in Metals Week, averaged for the second calendar month following date of delivery of product, less a deduction of 25 ¢ per pound of copper accounted for. The maximum quantity of copper paid for shall not exceed 5 units.

NO PAYMENT WILL BE MADE FOR ANY METAL OR CONTENT EXCEPT AS ABOVE SPECIFIED.

## DEDUCTIONS

SMELTING DEDUCTION: The smelting deduction shall be \$ 77.00 per dry ton based on

- (a) A cost of employment of \$ 11.00 per hour at East Helena
- (b) A cost of fuel of 345 ¢ per MMBtu at East Helena
- (c) A cost of electric power of 12 mills per kwh at East Helena
- (d) Payment for gold, silver, lead and copper of \$1000.00 per net dry ton or less.

SMELTING DEDUCTION ADJUSTMENT:

- (a) Increase or decrease smelting deduction by 8 ¢ for each 1¢ per hour that the average hourly cost of employment during the calendar month including date of delivery is greater or less than \$ 11.00, fractions in proportion.
- (b) Increase or decrease smelting deduction by 8 ¢ for each 1¢ per MMBtu that the average cost of fuel used during the calendar month including date of delivery is greater or less than 345 ¢, fractions in proportion.
- (c) Increase or decrease smelting deduction by 12 ¢ for each 1 mill per kwh that the cost of electric power used during the calendar month including the date of delivery is greater or less than 12 mills, fractions in proportion.
- (d) Increase the smelting deduction by 7.5 % of the excess over such payments for gold, silver; lead and copper of \$1000.00 per net dry ton.

ARSENIC: If 0.5 units or more, charge for all at \$ 2.00 per unit) FRACTIONS  
 ANTIMONY: Allow 0.5 units free; charge for excess at \$ 1.00 per unit) IN  
 BISMUTH: Allow 0.05 units free; charge for excess at \$ 0.50 per lb. ) PROPORTION  
 NICKEL: Allow 0.3 units free; charge for excess at \$ 3.00 per unit)  
 MOISTURE: Allow 10.0 units free; charge for excess at \$ 0.50 per unit)

TONNAGE: Limited to \_\_\_\_\_ tons per month.



SHIPPER \_\_\_\_\_ ADDRESS \_\_\_\_\_  
 MINE \_\_\_\_\_ LOCATION \_\_\_\_\_  
 PRODUCT LEAD ORE - SILICEOUS (over 50% SiO2) R. R. STATION \_\_\_\_\_

The following purchase terms are subject to the General Clauses shown on the back of this sheet and are subject to change on 30 days notice. Unless shipments are begun within 30 days, this quotation is automatically cancelled.

**DELIVERY:** Freight prepaid f.o.b. rail cars at unloading bins of the ASARCO Incorporated Smelter at East Helena, Montana. The rates quoted are based on shipment in open-top gondola equipment. Extra unloading charges of up to \$2.00 per wet ton will be assessed for product received in other equipment.

#### PAYMENTS

**GOLD:** Deduct 0.02 troy ounces per dry ton and pay for 95 % of the remaining gold content at the daily London Final Gold Quotation, as published in Metals Week, averaged for the second calendar month following date of delivery of product, less a deduction of 250 ¢ per troy ounce of payable gold. All purchases of gold will be subject to United States Governmental regulations pertaining to transactions in gold.

**SILVER:** Deduct 1.0 troy ounces per dry ton and pay for 95 % of the remaining silver content at the Handy and Harman New York Quotation for refined silver, as published in Metals Week, averaged for the second calendar month following date of delivery of product, less a deduction of 15 ¢ per ounce.

**LEAD:** Deduct from the wet lead assay 1.5 units and pay for 95 % of the remaining lead at quotations for common domestic lead for delivery in New York, as published in Metals Week, averaged for the second calendar month following date of delivery of product, less a deduction of 8 ¢ per pound of lead accounted for. The quantity of lead not paid for shall equal a minimum of 3.0 units per net dry ton.

**COPPER:** Deduct from the wet copper assay 1.5 units and pay for 60 % of the remaining copper at the daily quotation for MW Copper Composite, as published in Metals Week, averaged for the second calendar month following date of delivery of product, less a deduction of 30 ¢ per pound of copper accounted for. The maximum quantity of copper paid for shall not exceed 5 units.

NO PAYMENT WILL BE MADE FOR ANY METAL OR CONTENT EXCEPT AS ABOVE SPECIFIED.

#### DEDUCTIONS

**SMELTING DEDUCTION:** The smelting deduction shall be \$ 63.00 per dry ton based on

- (a) A cost of employment of \$ 11.00 per hour at East Helena
- (b) A cost of fuel of 330 ¢ per MMBtu at East Helena
- (c) A cost of electric power of 11.0 mills per kwh. at East Helena

**SMELTING DEDUCTION ADJUSTMENT:**

- (a) Increase or decrease smelting deduction by 8 ¢ for each 1¢ per hour that the average hourly cost of employment during the calendar month including date of delivery is greater or less than \$ 11.00, fractions in proportion.
- (b) Increase or decrease smelting deduction by 8 ¢ for each 1¢ per MMBtu that the average cost of fuel used during the calendar month including date of delivery is greater or less than 330 ¢, fractions in proportion.
- (c) Increase or decrease smelting deduction by 12 ¢ for each 1 mill per kwh that the cost of electric power used during the calendar month including the date of delivery is greater or less than 11.0 mills, fractions in proportion.

<b>ARSENIC:</b>	If <u>0.5</u> units or more, charge for all at \$ <u>3.00</u> per unit)	FRACTIONS
<b>ANTIMONY:</b>	Allow <u>0.5</u> units free; charge for excess at \$ <u>3.00</u> per unit)	IN
<b>BISMUTH:</b>	Allow <u>0.05</u> units free; charge for excess at \$ <u>0.50</u> per lb. )	PROPORTION
<b>NICKEL:</b>	Allow <u>0.3</u> units free; charge for excess at \$ <u>3.00</u> per unit)	
<b>MOISTURE:</b>	Allow <u>10.0</u> units free; charge for excess at \$ <u>0.50</u> per unit)	

**TONNAGE:** Limited to \_\_\_\_\_ tons per month.

COMINCO

The Cominco facility at Trail, British Columbia, can treat lead or zinc concentrates as well as limited quantities of direct shipping lead ore that contains significant amounts of lead and/or zinc along with precious metals.

This company prefers to discuss any purchase directly with the potential shipper. Direct all inquiries to:

Mr. J. H. Reid, Ore Buyer  
Cominco  
Trail, BC  
Telephone: (604) 364-4222



Tungsten

KENNAMETAL INC.  
Nevada Division

A revised copy of Kennametal's Nevada plant current buying schedule for tungsten concentrates is appended.

Their base price for tungsten concentrates containing 60 percent  $W_3$  is \$120 per stu.

There will be a straight line reduction of 30¢ per each one percent below 60 percent  $W_3$  to 40 percent  $W_3$ , and a bonus schedule of 30¢ per each one percent above 60 percent  $W_3$ .

This company purchases only concentrates and has no facility to up-grade ores. For further information contact:

Mr. Roy Nojima, Ore Purchaser  
Kennametal Inc.  
Nevada Division  
347 N. Taylor St.  
Fallon, Nevada 89406  
Telephone: (702) 423-5131

KENNAMETAL INC.,  
NEVADA DIVISION

Effective June 11, 1979

BASE PRICE

Our base price for tungsten concentrates containing 60%  $WO_3$  shall be \$120.00 per short ton unit (20 pounds contained  $WO_3$ ) delivered Fallon, Nevada subject to the conditions below:

IMPURITY PENALTIES

Buyers reserve the option of applying prevailing GSA penalty schedule for impurities if the material is considered particularly "dirty".

GRADE BONUS AND PENALTY

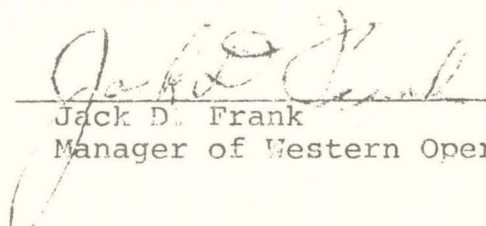
Above 60% $WO_3$	30¢ bonus for each 1% $WO_3$
60% $WO_3$	\$120.00
60% $WO_3$ to 40% $WO_3$	30¢ penalty for each 1% below 60% $WO_3$

PRICE EXAMPLES BASED ON NO IMPURITY PENALTY

70% $WO_3$	\$123.00
65% $WO_3$	121.50
60% $WO_3$	120.00
55% $WO_3$	118.50
50% $WO_3$	117.00
45% $WO_3$	115.50
40% $WO_3$	114.00

OTHER CONDITIONS

- (1) Material below 40% may be taken by special negotiations.
- (2) A charge of \$50.00 for each lot will be made for handling lots under one ton net dry weight.
- (3) Material should be dried prior to delivery. The buyer reserves the right to invoke a drying charge when necessary.
- (4) Delivery shall be fob Kennametal Inc., Fallon Plant, 347 North Taylor Street, Fallon, Nevada 89406
- (5) Deliveries will be accepted Monday thru Friday, holidays excepted, between hours of 8:30 A.M. & 2:30 P.M.
- (6) The above schedule applies only to lots acceptable to the buyer.
- (7) This schedule is subject to change without notice.
- (8) All settlement based on buyers weight, sampling and analysis.
- (9) A minimum amount per shipment is 500 lbs.
- (10) Sulfur penalty schedule is 30¢ per stu for each percent above 1.50%. No penalty below 1.50% sulfur.

  
\_\_\_\_\_  
Jack D. Frank  
Manager of Western Operations

JDF/as



KENNAMETAL INC.  
NEVADA DIVISION

347 NORTH TAYLOR  
FALLON, NEVADA 89406

PH. 702-423-5131  
TELEX 35-4436

TUNGSTEN CONCENTRATES  
PURCHASE CONTRACT

Lot No. N.....

Seller ..... Date .....

Address .....  
P. O. Box or Street Address ..... City and State .....

Origin of Concentrates: Name of Mine .....

County ..... State .....

Type of Ore .....

Approximate Net Weight of Ore Including Moisture ..... lbs.

Base Price per STU ..... Adjusted per .....

Kennametal's Buying Schedule dated .....

CONDITIONS OF SALE

1. The quoted price is FOB Kennametal Plant, Fallon, Nevada.
2. The weighing and sampling will be conducted by Kennametal Inc., with the Seller encouraged to observe the weighing and sampling procedures. Certified weighs will take precedent over approximate weight shown above and will be binding on buyer and seller.
3. A chemical analysis will be arrived at by taking a composite sample of this Lot and splitting it into three separate portions. One portion will be for the Seller, one for the buyer and one will be sealed and retained by Buyer for umpire purposes in case of a disagreement in the assay between the buyer and the Seller. All three samples will be binding on the buyer and the Seller.
4. If no notification is received by the buyer within ten days from receipt of the "Settlement Sheet." and check in final payment, the settlement shall be deemed complete and binding on both parties to this contract.
5. Should the Seller notify the buyer of his disagreement in analysis, the sealed sample will be mailed to an umpire agreeable to both parties for an analysis. The analysis of the three samples which falls between the other two will be binding on both buyer and seller. The umpire fees will be paid by the party, buyer or seller whose analysis deviates from the umpire by the greater amount.
6. The buyer reserves the right of rejection for material that does not come up to minimum standards of grade, per the buying schedule in effect at the time of the sale. In the event that the material is rejected, the Seller will be notified to pick up the material. If the Seller fails to pick up the material within 60 days after the date of sending notice by certified mail, Kennametal has the right to dispose of the material in any manner it sees fit.
7. The Seller certifies that he is the legal owner of the ore which is the subject of this agreement and has all rights pertaining to the selling of this material.

Accepted date .....

Seller ..... by .....

# WILKINSON ASSAYS

## CERTIFICATION REPORT


8849 SIERRA AVENUE, FONTANA, CALIFORNIA 92335 • SINCE 1967 • PHONE (714) 823-4607  
 ASSAYER • CHEMIST • METALLURGIST • REFINER • PRODUCER OF 999.7 GOLD

CHEM — FIRE	CHARGE	WEIGHT USED	DATE	PRICE PER OZ.	OZS. PER TON	GRAMS PER TON	VALUE PER TON
GOLD							
SILVER							
COPPER							
LEAD							
PLATINUM							
IRIDIUM							
RHODIUM							
PALLADIUM							
TUNGSTEN							
URANIUM							
Submitted by			Sample			Assayer	
Assay based on specimens left at lab. only				• Based on assay ton of 2,000 lbs.			

SAMPLE COPY

MILL IN  
 DEVORE, CA.  
 phone 1-714-875-9531

MILL IN  
 Bishop, CA.  
 Address MILL P.O. BOX  
 1160  
 EL CAJON, CA.  
 92022



**Wilkinson Assays**

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GOLD, SILVER - PLATINUM GROUP  
 COPPER, LEAD, MERCURY  
 FOR THE BEST RELIABLE ASSAY IN THE VALLEY  
 ASSAYER, CHEMIST, METALLURGIST  
 SINCE 1967  
 DUANE L. WILKINSON, ASSAYER

8849 SIERRA AVENUE  
FONTANA, CALIFORNIA
TELEPHONE  
1 (714) 823-4607



# CALIFORNIA DIVISION OF MINES AND GEOLOGY

DIVISION HEADQUARTERS  
RESOURCES BUILDING  
ROOM 1341  
1416 NINTH STREET  
SACRAMENTO CA 95814

CDMG NOTES 71-16

## SMELTERS IN THE WESTERN UNITED STATES

Location	Concern	Products Treated
<b>ARIZONA</b>		
Ajo	Phelps Dodge Corp.	Copper, gold, silver
Douglas	Phelps Dodge Corp.	Copper, gold, silver
*Hayden	American Smelting & Refining Co.	Copper, gold, silver
Inspiration	Inspiration Cons. Copper Co.	Copper, gold, silver
Miami	International Smelting & Refining Co.	Copper, gold, silver
Morenci	Phelps Dodge Corp.	Copper, gold, silver
*San Manuel	Magma Copper Co.	Copper, gold, silver
*Superior	Magma Copper Co.	Copper, gold, silver

### CALIFORNIA

ASARCO has closed its Selby plant. There are no smelters in California.

### MONTANA

Anaconda	Anaconda Company	Copper, gold, silver
x East Helena	American Smelting & Refining Co.	Lead, gold, silver

### NEVADA

*McGill	Kennecott Copper Corp.	Copper, gold, silver
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### TEXAS

Amarillo	American Smelting & Refining Co.	Copper, lead, gold, silver
El Paso	American Smelting & Refining Co.	Zinc, gold, silver

### UTAH

Midvale	U. S. Smelting, Refining & Mining Co.	Lead, gold, silver
Salt Lake City	Kennecott Copper Corp.	Copper, gold, silver
Tooele	International Smelting & Refining Co.	Lead, gold, silver

### WASHINGTON

Tacoma	American Smelting & Refining Co.	Copper, gold, silver
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WASH. 98401  
see file  
\*Treat material from a single mine exclusively

**ASARCO**  
PO BOX 1677

*copper only* Rev John Shuly  
11-71

QAA Rev. WBC MFD 3/71



SMELTERS \*

Copper (Garfield, Utah - A.S. & R.)  
(International, Miami, Arizona, - I. S. & R.) (Anaconda)  
(Tacoma, Washington - A.S. & R.)

Lead (Murray, Utah) A. S. & R.  
(Selby, California) A. S. & R.)

Lead-Zinc Concentrator (International, Utah) (I. S. & R.)  
(Anaconda)

Lead (International, Utah) ( I. S. & R.)

Lead & Copper (Tooele, Utah) (I. S. & R.)

Copper-Zinc (Bradley, Idaho) Bunker Hill & Sullivan Mining  
& Conc. Co.

International Smelting & Refining Co.  
Ore Purchasing Dept.  
818 Kearns Bldg.  
Salt Lake City, Utah and Miami, Arizona  
(Buy gold, silver, lead and zinc ore and concentrates.)

American Smelting & Refining Co.	A. S. & R. Co. (Au, Ag, Pd.)
Ore Purchasing Dept.	Ore Purchasing Dept.
700 McCormick Bldg.	405 Montgomery St.
Salt Lake City, Utah	San Francisco, California

(See list of smelters and chgs. in Peele, Vol. II, 32-10.)  
(See U. S. B. M. List in R. S. M. Drawer file)

American Zinc, Lead & Smelting Co.  
Ore Buying Dept.  
927 Old National Bank Bldg.  
Spokane, Washington  
(Buyers of zinc conc. and high grade lead conc.)

Phelps Dodge Corp.  
Reduction Works at Douglas, Morenci and Clarkdale, Arizona  
(Buyers of copper ores.)

Bunker Hill & Sullivan Mining & Conc. Co.  
Kellogg, Idaho  
R. R. St. Bradley, Idaho.  
Purchase gold, silver and lead ores  
Write Bunker Hill Smelter, Kellogg, for ore rates.

\* See list in R. S. M. desk file.