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Mr. Raymond Jaffe  
2237 Spaulding Avenue  
Berkeley, Calif.

To Edward Wisser, nDr.

To professional services, preparation of report on  
King-Ainsworth mining property, Arizona, Feb. 25-Mar. 2, 1951...\$150.00

March 1, 1951

Mr. Raymond Jaffe  
2257 Spaulding Avenue  
Berkeley, Calif.

Pursuant to your request I have prepared an Office Report on the King-Ainsworth mining property, Portal, Cochise Co., Arizona. By a fortunate coincidence I mentioned the property to my associate, Mr. K.G. Schwegler (see attached card), a mine operator of long experience. Mr. Schwegler tells me that he is quite familiar with the property, and that in fact he and an associate spent \$1500 cleaning the fill out of the bottom of the No. 1 ore shoot; he found the ore very narrow in the bottom and expressed surprise that the stope had again been filled. I have therefore had the great advantage of Mr. Schwegler's knowledge of the mine and of his size-up of local conditions, including probable mining costs. Mr. Schwegler keeps office hours on week-day mornings at our new office, 422 Acheson Bldg., Berkeley, and tells me that you are perfectly welcome to see him about the property if my report on it leaves you with any doubts. If you do wish to see him it might be well to call him at his home in the evening and make an appointment; phone Ashberry 3-7962.

Very truly yours

Edward Wissor

OFFICE REPORT ON KING-AINSWORTH PROPERTY, COCHISE CO., ARIZ.

Purpose: To decide whether the purchase, for \$10,000, of a 50% interest in the lease to be taken on the property by Messrs. Heidrich and Castro is a justifiable venture. Messrs. Heidrich and Castro have an option on the property, expiring April 23, 1951, providing for a lease with royalty payments of 10% on net smelter returns on lead-zinc ore shipped. (The option says 10% of gross smelter returns, presumably an error to be corrected in the final lease). Work requirements, to commence in signing of the lease, are said to be 150 man-shifts every 90 days, and the purchase price of the property is said to be \$150,000.

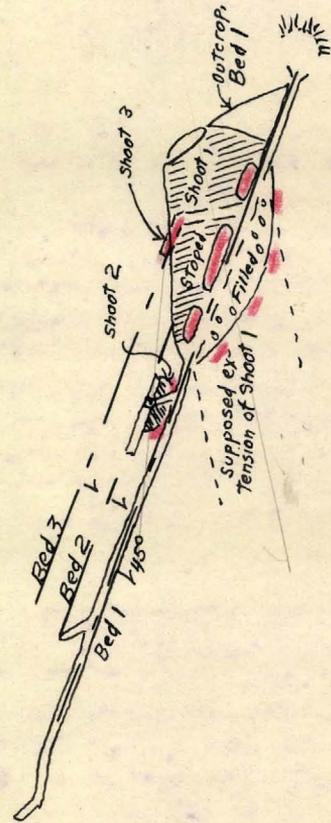
Location: Southeastern Arizona, about 30 miles south of Bowie and some 15 miles west of Rodeo on the Southern Pacific Railroad; on the eastern flank of the Chiricahua Mountains.

Geology, Ore Occurrence.- The country rock in the vicinity of the mine workings consists of a series of thin-bedded impure limestone, limy sandstone and shale beds, called the Treasury series. Lead-zinc ore occurs as shoots replacing the limestone beds. Three such shoots have been exposed in the Treasury tunnel, shown on the accompanying plan. (Shoots 1, 2 and 3, respectively in Beds 1, 2 and 3). The limited work done suggests that these ore shoots rake flatly down to the west, as suggested for Shoot 1 on the plan).

Shoot No. 1, the first discovered and by far the largest as exposed, was mined above the tunnel level many years ago. Thickness of ore scarcely exceeded 3 feet; strike length (measured along the tunnel) was 200 feet or less. The ore was mainly lead and zinc carbonate. Mr. Schwegler (who with an associate cleaned out the fill on this shoot where it was stoped below the tunnel level in order to examine the bottom of the shoot) states that the ore was only about 18" wide there, and was still mainly carbonates. Custom mills and smelters accepting mixed carbonate and sulphide ore pay for sulphides only (see Schedule for American Smelting & Refining Co. Deming Milling Unit, attached). Samples of this ore shoot furnished by Mr. Heidrich and which run relatively high in lead and zinc have therefore little significance, since they represent the lead and zinc in carbonate as well as sulphide form.

Mr. Schwegler states that this shoot was widest toward the surface and narrows with depth, so that probabilities for any great extension in depth are slight.

Shoot No. 2, discovered in Bed 2 by means of a crosscut from the main Treasury Tunnel drift, was mined underhand by Mr. Heidrich Sr. in 1948-1949. During this operation 781 tons were shipped to custom mills; the average liquidation (cash received from the mill) was \$21.50 per ton. Out of this receipt had to come the costs of mining, sorting, trucking to railroad etc.



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KING-AINSWORTH GROUP, PORTAL, COCHISE CO., ARIZ.  
PLAN OF TREASURY TUNNEL WORKINGS

Scale: 1" = 200'

LEGEND

- Stope: [hatched pattern]
- Lead-zinc ore: [red line]

Shoot No. 3 is exposed only in a short drift from a second cross-cut (see plan), and there only in the bottom of the drift, according to Mr. Heidrich. However, at the location of the "Proposed Winze" shown on the plan a series of short bore holes were drilled, down and to the NNE; one or two of the steeper holes cut, according to Mr. Heidrich, a streak of ore a few inches wide. On the strength of this Mr. Heidrich assumes that Shoot 3 persists to the neighborhood of the proposed winze, and to a depth of at least 50 or 60 feet below the elevation of the Treasury tunnel.

Proposed Development: Mr. Heidrich proposes to sink a vertical winze from the point on the Treasury tunnel level shown on the plan. He believes that this winze at 60 feet should cut the No. 3 ore shoot. After drifting on the shoot and making it ready for stoping, he believes some 1500 tons of ore would be available, yielding a net profit of \$29,560.00. Later plans call for crosscutting to the supposed downward extensions of Shoots 1 and 2.

Possibilities of the Mine: It is difficult to see any basis for optimism concerning the persistence of these small lenses in depth. Certainly the narrow ore streak cut in the drill-holes mentioned offers scant support for the notion that Shoot 3 rakes down to the area drilled. The pinching with depth of Shoot 1, as reported by Mr. Schwegler, is discouraging but typical of lenses of ore in limestone of the type exposed in this mine. I have calculated that even if all three shoots persist to an elevation 100 feet vertically below the Treasury tunnel level, only about 10,000 tons of ore, at best, would be developed, an amount very far indeed from that required to justify even a small mill. A more serious criticism however, lies in the fact that even if this amount, or any amount of ore were put in sight, the grade of the ore, the size and attitude of the ore shoots and local conditions are such that no profit could be made.

Liquidation Value of the Ore: By this is meant the dollars per ton received from the custom mill or smelter which purchases the ore. Out of this must come all expenses for mining, sorting, trucking the ore, plus royalties etc. On the basis of present metal prices and the sample schedule of a typical local custom mill, and assuming a sulphide metal content of 7% lead and 9% zinc, I calculate the liquidation value of the ore at about \$27 per ton. (See Appendix). As a check, the lot shipped August 23, 1948 (data furnished by Heidrich), assaying about as assumed and at a time of metal prices approximately the same as those of today, liquidated at \$21.30 per ton.

Estimated Mining Cost: The arrangement proposed involves the employment of Messrs. Heidrich and Castro to run the operations at a salary of \$75 per week each, and of Mr. Heinrich Sr. as consultant, at a salary of \$25 per week. In itself this "free ride" arrangement is entirely out of line, (1) because the partners in a lease expect to get their reward out of profits, not out on one partner's investment, and (2) such high overhead is ridiculous for an operation which of necessity would be as small as this one. One good man could easily run the works.

If the ore shoots do have any considerable extension in depth, they have an awkward shape. They lie in beds that dip 45° or less, and within their beds they have a flat rake down to the west (see Plan). The result is an inclination in space of only about 20°. Broken ore will not flow by gravity down such a flat slope; the result is it must be shovelled, or scrapers, operated by air hoists, must be used to drag the ore down the floor of the stope to where it is hoisted or trammed. Either method means high costs.

The tonnage that can be knocked from such ore bodies, which beside having an awkward shape are small, is limited. If No. 3 shoot, which Mr. Heidrich proposes to mine to make the venture self-supporting, does extend down to the site of his proposed winze, it is doubtful whether over ten tons a day could be produced. On the basis of ten tons per day, 250 tons per month, cost per ton would be about as follows:

Overhead: Heidrich Jr., Sr., Castro, \$700 per month.....	\$2.80 per ton
Rentals of equipment, \$600 per month.....	2.40
<hr/>	
Total overhead.....	\$5.20
Estimated direct mining cost, labor & materials.	7.00
Sorting ore.....	4.00
Trucking to railroad.....	2.00
	<hr/>
	\$18.20

Since the ore liquidates at \$19 per ton, there is clearly no profit in it. I do not believe either the liquidation or the cost estimate is too pessimistic; but suppose they are, and that a somewhat wider profit margin might result. The "investment" is still not attractive. Mining is speculative and subject to many risks, the major risk being that the ore exposed will peter out. Other risks lie in the difficulty of securing labor (Schwegler had to use Mexican section hands), drop in metal prices, refusal of custom mills to accept ore shipped, at periods when they are over-loaded, etc. What makes people risk money in such a game is the possibility of spectacular returns; this applies particularly to small leases, and much less to large mines with abundant proven ore reserves.

Government Loans: Chances for substantial ore here are believed to be too slight to interest government lending agencies.

Initial Outlay Needed. Since I believe the ore is not worth mining and shipping in any case, an estimate of the initial investment is beside the point. Suffice it to say that a safe initial capital investment would be closer to \$15,000 than to the \$10,000 estimated by Mr. Heidrich.

Conclusions: No claim is made that it is not possible for this venture to succeed. There may be a mine there; in fact Mr. Schwegler likes the possibility for copper at this property; Mr. Heidrich's exploration might open up larger and richer ore shoots than those now exposed. But the chances are against the latter; as for the possible copper ore bodies, even to decide where to hunt would require several months intensive geologic study at a cost of perhaps \$5000, and this would be only a preliminary to the expenditure of far larger sums on exploration.

A man with \$10,000 (or any sum) which he proposes to put into a mining venture should search for a venture having three qualifications: (1) indications that the ore bodies are of high enough grade to yield a substantial profit; (2) indications that the ore bodies will be large enough to permit of cheap mining; (3) a financially sound business deal, together with local conditions of labor supply, transportation etc. conducive to a successful operation.

In my opinion the King-Ainsworth venture offers none of these favorable factors. I recommend that Mr. Heidrich's offer of a 50% interest in his proposed lease on the King-Ainsworth group be rejected.

March 2, 1951

Edward Wisser

**APPENDIX: LIQUIDATION VALUE OF ORE**

Abbreviated Schedule, A.S.&R. Deming Milling Unit, 8/30/50

For purchase of crude lead-zinc sulphide ores from Consol. Ariz. Metal Producers Association (owners of King-Sinsworth group).

Payments

Gold and silver are omitted, since the ore is low in these metals.

**Lead:** No pay if 1.0% or under. If over 1.0%, deduct 0.3% from sulphide assay and pay for 75% of remaining sulphide at Engr. Min. Jnl. quotation for common desilverized domestic lead less 2.8 c/lb.

**Zinc:** No pay if 4.0% or under. If over 4.0%, deduct 0.5% from sulphide assay and pay for 75% of remaining sulphide at Engr. Min. Jnl. E. St. Louis quotation for prime western zinc less 6.4 c/lb, increasing or decreasing this deduction 0.2 c/lb for each one cent increase or decrease in zinc price above or below 15 c/lb, fractions in proportion.

No payment for non-sulphide lead or zinc.

Deductions

Base charge \$4.00 per dry ton. Delivery FOB mill bins of buyer's mill.

Trial Liquidation. Assume average grade of ore: lead 7%, zinc 9%. Take latest available quoted metal prices: lead 17c/lb., zinc 17.5¢ /lb. Mill pays: lead, 17c-2.8c = 14.2 c/lb; zinc, 17.5-6.9 = 10.6 c /lb.

Payments

Pb 7-0.3 = 6.7% = 134 lbs/ton.  $134 \times .75 = 100.5$  lbs.  $100.5 \times \$0.142 =$  \$14.27

Zn 9-0.5 = 8.5% = 170 lbs/ton.  $170 \times .75 = 127.5$  lbs.  $127.5 \times \$0.106 =$  13.52  
\$27.79

Deductions

Milling charge.....	\$ 4.00	
RR freight.....	2.35	
	\$ 6.35	
		6.35
Debit royalty @ 10%.....		<u>\$21.44</u>
Net return to lessess.....		2.14
		<u>\$19.30</u>

Check Shipment to Denn Mill, average assays Pb 7.25%, Zn 9.3%; quoted lead price 19c, quoted zinc price 15c. Net return before royalty: \$21.30/ton as against \$21.44 in the above trial liquidation.