

To: File

August 26, 1983

From: G. L. Ojala

NM Mine File No. 206

Subject: TELECON NOTES -- TED EYDE (CONSULTANT) COMMENTS RE: MOGOLLON
DISTRICT, NEW MEXICO EXAMINATION

- Ted was impressed with the existing operation, the operator (Dick Manning and staff), and the potential for underground mining. He will recommend an involvement. Definitely worth a "good, hard look."
- Dick Manning -- a first-class operator -- very knowledgeable -- rates a "10" on the "scale."
- Manning's hydrometallurgical consultant -- also very knowledgeable.
- Flotation metallurgy relatively simple -- just two minerals -- argentite (the Ag) and pyrite (the Au). In quartz gangue for the most part; some calcite. They make a bulk sulfide concentrate. One problem (solved) -- contains a Magnesium-clay (prob. smectite) fraction -- swells -- 30% of the values (dump-run mtl) are in that clay fraction. So, dump mtl. not permeable; couldn't leach directly (heap-leach). Manning floccs the clay with high-pressure water, then runs thru flotation (successfully). Excellent recoveries (90%+ Au and Ag from raw ore; 70% Au and 75% Ag from dumps). Some of mill equipt. is old, but all in good shape. Impressed with house-keeping; condition of plant. One reason successful -- no Cu, As, Sb, or Bi to contend with. Cost of treating dump material is about \$112. per ton of concentrate (compares with Asarco's \$940./ton of concentrate).
- District is remote -- "end of the world" -- although now served by a paved road. Manning is the largest private employer in Catron Co., the state's largest county (and a very "poor" one).
- Manning's problem now is that he has only about 9 more month's dump material to run; then must go underground. Needs financing and could use an operating partner for the underground phase.
- District is (per Eyde) "remarkably similar" to Pachuca (with respect to rocks, mineralization, etc.). Sits on the edge of a caldera.
- Wide veins -- 15 ft. + -- ore shoots 1000 feet long -- 700+ feet deep -- values at bottom of main mines just as good (in total dollar value) as higher up (gold falls off a little, but silver improves).
- Serious, "modern" mining from about 1937 to 1942 -- last operation shut down by L-208 in mid-1942. (Legitimate reason).
- Stressed -- Dick Manning really a sharp, "top" guy. A good young geologist working for him also. Have done thorough, good underground sampling. As-sayer is Tom Shelton, who Ted went to school with -- a "good man."

- Eyde went underground at the Eberle and Maude-S.
- Manning and partner do in fact control about 2/3 of the District, as reported. St. Joe has most or all the rest. St. Joe was brought into the district by Sage Assoc., who considered this to be their top project in the S.W. (Eyde agrees).
- Manning has a serious "personality conflict" with St. Joe. He caught them drilling under his claims; got the sheriff; threatened to bring charges for criminal trespass if drillers put the rods back in the hole (apparently stopped them). So, he might not be willing or able to deal with St. Joe, whereas we probably could (to unitize the district). St. Joe was drilling the down-dip extension of a vein; Manning thinks he has the apex, or ?? He thinks St. Joe hit something good.
- Adjacent to caldera; tension fractures in Andesite and Rhyolite. Eyde thinks the carbonates (basement) might be "miles deep" .
- Manning is probably clearing about \$500,000. per year (operating profit). Dump heads are 0.059 Au and 3 to 4 oz. Ag. Just nine month's material left. He has a \$1.6 million loan he is operating on (and re-paying). Manning has 49% interest; the other 51% is held by a rancher in Demming who financed the operation. Gross sale value of dump material being treated is about \$40.38/ton; costs (including debt service) are \$28.10/ton = \$12.48/ton operating profit. Annual production from this operation, from about 45,000 tons of mtl. treated, is 146,000 oz. Ag and 1,687 oz. Au. Nets about \$524,000.; cash flow is about \$44,000./month at present. His actual, direct operating costs comprise 65% of the costs; debt service about 35%. Debt service amounts to about \$13,600./month on principal and \$22,500./month on interest. Still owes the bank \$1,640,000. at 16-1/2%.
- Ore is hand-sorted on the grizzly (easy to do, white quartz vs. darker volcanic rock); and also on a picking belt.
- One problem -- the deal might be too steep? Western Nuclear, a subsidiary of Phelps Dodge, did a very careful, detailed, study. They reportedly offered Manning \$3.5 million for his 49% interest, plus \$5. million for exploration program. Phelps Dodge couldn't come up with the money; the deal fell apart.
- Later, "Pioneer nuclear was going to make an offer, but have been dragging their feet.
- District was never unitized. A drain tunnel was started from the low ground in the old days -- was run in about 3900 feet; has about 1000 feet to go to get under the Eberle mine.
- Manning has all necessary water rights. (very important).
- Believes that higher grade and better recovery will offset added costs of underground mining (comparing underground with present surface-dump operation).

- Grade and reserve data:
 - Manning did his calculations very conservative -- used a 20% dilution factor.
 - Just 30,000 tons of near-surface reserves blocked out at present (proven ore).
 - All of Manning's many samples from the Maude-S. vein averaged 20 oz/ton Ag and 0.2 oz/ton Au.
 - Western Nuclear report says that Mannings holdings in the district could poss. contain 6 million tons containing 500,000 oz. gold and 30 million ounces silver.
 - They also reported 400,000+ tons of (?)better-assured ore, of a grade better than Eberle. (details not clear).
 - A good overall guess might be one or several million tons of something like near-0.1 Au and 6+ Ag. (wide vein widths).

- Manning plans a shrinkage-stoping system.

- Production from last few years operations:

1940:	68,548 tons	0.149 Au	8.87 Ag	
1941:	61,460 tons	0.135	8.73	
1942:	22,000+ tons	0.1296	9.35	(just 6 months)

From 1937 to 1942 (at \$1.00 silver and \$35. gold): 322,000 tons, valued at \$3,387,221. (cyanide milling).

- Conclusions: Has been so thoroughly and well-looked at, no need for more sampling. Warrants a good, hard look at all the data; then, study the economics. See what can be done with the business deal. If looks interesting, try to work out a deal. Later -- Sunshine could possibly unitize the district; take on the St. Joe holdings also. A real "opportunity."

- Problems still evident:

- Tough business terms; indebtedness, etc.
- Need fairly wide widths (consistently) and large tonnages to support the marginal grade.

- Recommendation (GLO):

- Wait for GLO return from Alaska trip Sept. 5, and, receive Eyde report-- then contact Manning to express interest and pursue, or, maybe better--
- Week of August 29: EVH discuss with Eyde and Paul Hunter; call Manning on executive level to express serious interest and get foot in the door??

- Ted Eyde Telephone No.: (602)297-4330

9/21/83
GLO


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MOGOLLON DIST., N.M. -- UPDATE OF PROS AND CONS

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- Strong, long, wide veins
- Known low-grade reserves
- Good plant
- All "set up"
- Good district for renewed exploration
- Possibility of a J/V with St. Joe
- Possible St. Joe "find" on Challenge Mining Co. ground
- Good depth and lateral extension potential
- Probably no or few environmental problems
- Drainage/access tunnel started
- Positive results of detailed Western Nuclear study -- reserves (albeit marginal)
- Good people on-site
- Substantial old productive district
- Good geologic setting (caldera; complex structures; etc.)

(-)

- Big bucks for just half the pie (and -- up-front \$)
- Bank indebtedness
- Out of ore (virtually)
- Needs hand-sorting to maintain modest grade
- Considering the grade, might forever be a "skinny" proposition
- Water problems?
- Lands division between Challenge and St. Joe
- Typical, good small-project situation -- worked dumps, but now out of ore
- District was mined, picked over, leased fairly thoroughly in 1940's?

(?), Comments, Recommendations, etc.

- Critical factor: the business arrangement we could come up with; early \$ investment required (incl. pre-production payments); etc.
- Needs: fast, decisive action.
- Recommend.: Conditional "go" -- set up meeting with Manning -- w/Paul H., EVH, WA, Ted Eyde, GLO
- Determine exact lands situation--just which claims and mines involved; ownership; underlying deals; etc.
- Just how thoroughly has the district been explored in the past?

July 7, 1983

Report on Challenge - Venture Mine

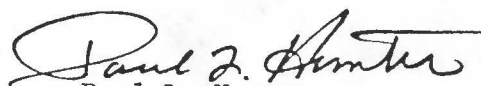
This mine is located 70 miles West of Silver City, New Mexico in the Mogollon Mining District. The district is a large early day producer of silver and gold and in many respects similar to the Tintic district. C-V Company has leases on about 2/3 of the patented mining claims in the district. The property manager is Dick Manning, who is also part owner. A flotation plant, concentrate leaching plant, electroning plant and furnace have been built to process ore. Flotation recoveries of gold and silver are in the 90% range and concentrates from the mill contain 900 oz of silver and 12 oz gold. The ore has largely been obtained from old ore dumps which average 4 oz silver and .05 gold. They are anticipating going underground in December. The impressive aspect of the company is that they are making a small profit on the dumps and finishing plant construction from profits. About \$1,600,000 has been spent on the property in addition to expenditures from profits.

Mr. Manning expects to mine the low grade ore from the mine which will run 6 oz ag and .05 au and if capital available to develop the extensions to the higher grade veins 15 oz ag and .7 au. My visit was made to observe the concentrate leaching operation. They are successfully leaching their concentrates at a 95% recovery, but had many failures before they developed the process. The concentrate is reground after milling to -490 mesh and is not allowed to dry. Partial drying effects the leaching effectiveness. The material is then pumped to decant tanks where all the liquid possible is removed. It then proceeds to the aeration tank and is aerated 24 to 30 hours. (The process is a leach operation, a continuous circuit was not controllable.) It is then processed through 2 leach tanks with 5 grams of cyanide per liter. Ph is adjusted to 11 level. The material is decanted from the leach tanks immediately and all possible liquid is again removed. It is then processed through the electroning system which uses steel wool instead of plates. The residue is processed through the furnace section. The final plant dore is shipped to Anaheim, California for refining, where he has an option to sell at spot within 24 hours or can retain the metal for 3 weeks at a cost of 4%.

The consultant used for the design of the system was Mr. Diensbach, P.O. Box 187, Haileybury, Ont., telephone 672-5107. Mr. Manning was pleased with his work and felt he was the only one who could have solved his problems. They did ship some concentrate to Noranda in Quebec, Canada and received a good contract from them which resulted in a 89% pay back (except freight). Freight was not as big a factor as it appears, since they piggy backed trailers by rail to Canada. In addition, the concentrate payments were settled within 57 days from receipt. The operation is very impressive and costs are extremely low.

Recommendations:

They are seeking capital to go underground and have offered 33% of the stock in return for \$500,000 to be spent on underground and assuming 50% of the \$1,650,000 loan. The terms are negotiable and they are flexible to the right group. I would recommend that Sunshine Mining schedule an on site examination. This can be done through Chapman, Griswold and Woods, an Albuquerque, New Mexico consulting firm.


Paul L. Hunter

GLO
8-4-83


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NOTES RE: MOGOLLON DIST., CATRON CO., NEW MEXICO SUBMITTAL OF PAUL HUNTER

Basic data; positive aspects:

- A substantial old silver district:
 - multiple, long and strong veins in volcanics.
 - historically good grade (in silver) and good mining widths; reasonably large ore shoots that have had substantial production.
 - Hays Griswold recently identified this as an area of interest via his New Mexico reconnaissance research; in fact, he had planned to do some exploration work in this area (before he went to the Bellevue project last month).
 - Could be some large remaining reserves of comparatively low-grade, but now commercial, silver ore.
 - The very complexity of the controlling structural setting, and of the mineralization, just could result in hitherto undiscovered orebodies.
 - The district is, as Hays G. has suggested, worthy of renewed exploration using a modern "caldera" model.

Questionable items:

- Just which mine, or mines are included?
- Just how thoroughly has the district been explored in the past?

Negatives:

- The efforts of the current operators have apparently "failed" in a sense -- this appears to be the "same old story" -- good, well-intentioned plans, well engineered, but no significant reserves.
- Apparently they need someone to help them: (1) look for ore; and (2) pay off their debts.
- Not really an "old" district -- was thoroughly (and we assume properly) explored, developed, and mined in the 1940's and later. (Leasers have picked over some of the old mines in more recent years.)
- Historically, the district has a problem of insufficient water.

