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Mr. Kaanta

SOUTHWESTERN ORE PURCHASING DEPARTMENT
Tucson Arizona

cc: H V Walker
H A Greer
S N Levison
E L Jourden
H C Woods
W H Loerpabel
F M Stephens

January 25, 1945

Mr. R. D. Bradford, Manager
EL PASO PLANT

FIELD TRIP NOTES--JANUARY 1945--ARIZONA & NEW MEXICO BRENT N. RICKARD

Christmas, Jan. 4, 1945

1. Christmas Mine, San Knight Lease. Messrs. Loerpabel, Harrison Schmitt, F.M. Stephens, and I spent the day with Messrs. Frank and San Knight looking at the underground workings, maps and reports on the Christmas Mine. Mr. Frank M. Knight, Jr., has asked us again if we care to participate in further exploration work. Drilling recently done by the U.S. Bureau of Mines and geological studies made by the U.S. Geological Survey and Christmas Mine staff, supplementing work done two years ago by Harvey Mudd interests, indicate a substantial tonnage of 2.5% to 3% Cu ore on the north and south contact areas below the 770-foot level--possibly 4,000,000 tons. The Bureau of Mines has an appropriation for further drilling and soon will begin drilling at depth below the 770-foot level on the south contact and east of the Bay or broken up area. The "Bay" area is so badly intruded with fingers of diorite that the ground requires square-set mining. Because of the expense involved in this method of mining, together with low grade of the ore (2.5% Cu), it has been thought that no matter how much tonnage is indicated the ore cannot be mined and milled on any reasonable price of copper.

San Knight is operating the mine under lease and, in order to carry on development work, has been granted special zero-quota copper premium of 10 cents in addition to zero-A premium of 5 cents. He is shipping 1000 tons per month to Hayden, crude fluxing ore, and is doing some drilling and underground development on the lower levels. Shipments during the past year average 1.82% Cu.

Frank Knight believes the lower level ground along the contact and east of the "Bay" area can be mined by cheap open-stope methods and to prove his point showed us one small stope on the 770 level, mined in 1929 or 1930, that has stood all these years without timbers. This puts a new light on the matter and the Mining Department is now making further studies, of which Mr. Loerpabel will inform us in due time. There is every indication of considerable tonnage of copper ore and large enough to warrant our interest. The principal question is in regard to mining methods and costs, assuming of course that there is proven sufficient tonnage of 2.5% to 3% ore.

Tiger, January 6th

2. Mammoth St. Anthony, Ltd. On return from Christmas Mine our party called on J.A. Richards, General Manager of Mammoth-St. Anthony, who showed us their excellent glass model of the Mammoth and Collins veins and underground workings. We were taken underground by Mr. Richards and his Engineer Daggett and looked at the lead-zinc sulphide ore area. This

(wrest - N-20')

Mammoth-St. Anthony, Con't.

Ore shoot is about 1600 feet in length with average width ~~20~~ 8 feet. It starts just below the 600-foot level and has now been opened on the 800 and 900-foot levels. The existence of this lead-zinc ore body has been known for some time, but not until premium prices became available did the management decide to curtail the oxide Au-Ag-Pb-MoS2-V2O5 operations and turn part of the mill over to sulphide flotation. This change-over was effected in 1942 and since then the oxide ore mining and milling has been discontinued. The mill is now devoted entirely to concentration of the sulphide ore, milling at the rate of 225 tons per day for six days per week beginning in January. For December 1944 mill records show:

	Tons	Lead-%	Zinc-%
Heads	3773	8.14	8.89
Lead Concts.	450	62.56	6.98
Zinc "	504	4.01	48.50

By installation of another bank of flotation cells in the zinc circuit and removal of lead on tables prior to final grinding, the grade of zinc concentrates has been improved. For example, the following recent five-day tests shows:

	Lead-%	Zinc-%
Heads	8.49	8.49
Lead Concts.	65.92	6.85
Zinc "	3.38	54.43
Recovery		
Pb in Lead Conc.	93.44%	
Zn " Zinc "		73.23%
Tailings assay	0.20	1.85

The average for the year 1942 was:

	Lead-%	Zinc-%
Heads	7.49	7.48
Lead Concts.	51.27	17.16
Zinc "	13.50	43.87
Recovery		
Pb in Lead Conc.	60.72%	
Zn " Zinc "		54.35%

The management attributes much of this improvement, if not all of it, to the help given them some months ago by Mr. Kaanta at the time we suggested that improvements could be made and offered to let Mr. Kaanta investigate.

The lead-zinc ore shoot is wide and strong, wider and stronger on the bottom level than on the levels above. The mine is owned by the widow of Milton Lloyd Smith and perhaps one or two others with small interests. Mrs. Lloyd Smith is a wealthy woman and Henry Carlisle of San Francisco, consulting engineer, tells me she has no idea of selling the property. However, we are keeping posted and have been assured that should the owners wish to sell we shall have first call.

3. Mammoth Extension Mine. Directly adjoining Mammoth-St. Anthony and lying between it and the low grade copper deposit known as San Manuel or Red Hill group, recently acquired by Magma Copper Company, is a group of claims owned by Sam Houghton and known as the Mammoth Extension. On January 16th enroute to Hayden I stopped at Tiger (Mammoth-St. Anthony) and talked with Messrs. Carlisle and Richards. They were disturbed over the news that Anaconda Copper Company, through its subsidiary Inspiration Consolidated Copper Company, has taken an option on all of Mr. Houghton's holdings. Whether Anaconda has an eye on Mammoth-St. Anthony or on Magma Copper Company's low grade copper deposit I do not know. Mr. Houghton was not at home. Mr. Reed, Geologist for Inspiration Cons., spent some time recently with Mr. Houghton looking over the surface--there are no underground workings. A few days ago Reno Sales visited Tiger and looked at the model and underground workings of Mammoth-St. Anthony and thereafter made his deal with Mr. Houghton.

Nogales, Jan. 12

4. E.J. Neuner and J.D. Jones St. Patrick Mine. Called on Mr. Jones, Manager of Nogales Credit Association, to discuss operations at St.Patrick Mine from which he and Mr. Neuner shipped a worthless car of ore last September, followed by a small truckload of high grade that nearly off-set the loss. The St. Patrick Mine is located in the Pajarito District on the road from Nogales to Ruby. Mr. Neuner loaded the car with cleanup from an old tunnel and failed to have the ore assayed. Mr. Jones says the face of ore is now exposed in the drift and mining will be resumed when Neuner returns from Kansas City. I agreed to look at the mine when operations are resumed.

Hayden, January 16: Discussed ore matters with Messrs Woods, Roberts, and Hight. We are cutting into siliceous ore stocks and must find source of a few hundred tons per month of good converter flux.

Sombrero Butte, Jan. 17

5. Copper Butte Mine is operated by C.F. Mitchell, garage man and trucker of Ray, Arizona. Production began in August 1943 and up to the end of 1944 Hayden Plant received total of 5969 tons with average assays: Cu 2.9%, SiO_2 60, Fe 8.0, Al_2O_3 11.0. Copper Butte Mining Company holds zero-A and zero-special at 7.7¢ copper premium. The operation was originally financed by R.F.C. funds.

Copper Butte Mine was worked many years ago by shaft and long adit tunnel to the vein. Mr. Mitchell is working it by open pit methods. The overburden is shallow and the ore deposit is fairly uniform. The U.S. Bureau of Mines is now doing some drilling on the property. Mr. Stephens looked at the drill logs and visited the mine some months ago. As long as premium prices prevail this mine should furnish some tonnage. On present prices Mitchell can operate at a small profit. The mine is about four miles south of the Ray-Superior highway and about 3.5 miles from Ray. The ore is trucked to Ray Junction, about 14 miles, at a cost of approximately $1.50 per ton.

Miami, Jan. 17

6. American Mine, Russell Haddy of Summit Lodge on road Superior to Miami, operating. The mine is about two miles south of Highway 70 at a point 10 miles east of Superior near the summit. I made about half of the distance from the highway to the mine, but last half of road was wet and slippery from snow and decided to turn back and try again on better day. Mr. Haddy has been trucking his ore to Miami Smelter but a short time ago delivered at Hayden a 6 ton lot assaying 24.15% Cu, 27% SiO2, S 20%, Fe 19, Al2O3 3.3. He now wants to ship in carlots hauling to Superior at a cost of $1.20 per ton, then by rail to Hayden at freight rate $1.20. I doubt if he has much tonnage of this high grade ore. I will try to visit the property in the near future.

7. Miami Copper Company: Called on R.W. Hughes, General Manager, to inquire about Castle Dome copper concentrates. International Smelter has given them no further notice and Mr. Hughes thinks there will be no need to ship to El Paso or Douglas. Mr. Maclennan asked Phelps Dodge for rates at the same time he talked with us. I gather from our conversation with Mr. Hughes that El Paso rates were in line but did not offset the additional freight. I explained that we could not absorb such a cost.

Mr. Hughes tells me that the contract with International Smelting Company for both Miami and Castle Dome copper concentrates expires at the end of 1945 and that Frank Maclennan has a feeling that International will try to raise rates. It was for that reason, as well, that he asked El Paso and Douglas for terms. I told Mr. Hughes that if at any time it appeared that a deal could be made with us we should be glad to discuss the matter further and if rates were not too far apart some concession might be in order.

Mr. Hughes also told me that Miami has a smelter site and has made plans and estimates for its own smelter in the event a reasonable market for its products cannot be had.

Following is the latest tabulation of weights and assays on 11 months operation for Miami, 9 months for Castle Dome.

	Miami	Castle Dome
Dry Tons Concentrates Per Month	5500	5500
% H2O	11.3	10
% Cu	31.8	40.0
% Ins.	5.7	6.6
% Fe + CaO	24.7	19.3
% S	36.0	33.0

Castle Dome: Mr. Hughes gave me the following figures which I quote from memory but believe they are approximately correct.

Tons ore available 30,000,000
Cost of Plant $ 15,000,000
Copper sales price 17¢ per pound, of which 4.5¢ goes to Defense Plant Corporation for retirement of loan. D.F.C. owns the plant; Miami Copper Company owns the mine and rents the mill.

Miami Copper Co., Castle Dome - Con't.

Tons overburden removed prior to start of mining and milling operation June 9,1943	15,000,000
Since June 9, 1943 to end 1944	5,000,000
Tons Ore milled at rate 12,500 per day	
Year 1943 from 6/9/43	1,700,000
Year 1944(approximately)	4,000,000

Ratio
Average grade 0.72% Cu

Present Ratio Waste to Ore .48 to 1 (.48 ton waste for each ton ore)

Ratio for entire operation 1.75 to 1

Mr. Maury of War Production Board was there at the time of my visit and was well pleased with the operation. The mill was built for 10,000 tons and is regularly handling 12,500 tons daily. I met Mr. Maury later in the day with a group of Miami Copper Company officials.

8. Inspiration Cons. Copper Company. Mr. P.D.I. Honeyman, Assistant General Manager, reported that reconstruction of the copper refinery is progressing in satisfactory manner and should be operating again in May. He says the labor situation is somewhat easier and that the smelter can handle the Castle Dome output. At the time of the fire Inspiration notified Miami Copper Company that, because of increased load at the Smelter, they might not have sufficient labor to handle the Castle Dome concentrates. This situation seems to have eased up a bit.

9. Albert Lee Mine, Ceferino Liano, 261 West Oak, Globe, owner. This mine is 1.5 miles east of Globe on the street passing the Globe Hotel. The property is developed by several tunnels on the vein. The lowest tunnel is driven 250 feet; the next one, 38 feet above this level, is 350 feet. A raise is now being driven and will soon connect these levels. About 85 feet above the second tunnel is No. 3 tunnel, 150 feet in length. A raise to surface is driven from No. 2 tunnel. This information was given to be by Mr. Liano, who in 1943 and 1944 has shipped to El Paso Plant 266 tons ore assaying 5 oz. Ag, 8.6% Pb,

Lordsburg, Jan. 18

10. Banner Mining Company. Called at the Banner Mine to discuss with Mr. Bowman the terms recently submitted for new contract to take effect on February 1, 1945. Mr. Bowman and his son Allen Bowman were in Denver attending a hearing of the War Labor Board. Labor contract discussions resulted in a hearing and it is hoped that all matters will be settled at this hearing. The labor situation at the mine is reported somewhat better in that the miners are staying on the job, but there is still a serious shortage and several of the younger men have been drafted.

11. Atwood Copper Mines, C.H. McIntosh. Talked with W.H. Harrison, Superintendent, at the mine. A small pump for supplying showers and other needs has been installed and water is pumped from the 350 level to a tank at the surface. Mr. McIntosh has provided a dry room for workmen. Several men were engaged in work on the road to the mine and on the ore bins.

Development work underground is progressing in a satisfactory manner. The crosscut to parallel vein on the 350-foot level (about 40 feet to south as indicated by U.S. Bureau of Mines drill hole) has been driven about 25 feet. Raise from the 350 level to 210 level is not yet completed.

Mr. McIntosh is considerably disturbed by dilution which he feels can and should be corrected by more careful supervision in mining. Four ore sorters at the ore bins have been sorting about one ton per day at a cost of $25. At this cost sorting does not pay, as hauling, freight and treatment cost about $5.00 Per ton.

Dos Cabezos, Jan. 19

12. E.I. Tout Mine. Operations are now under way at the Elma claim of the Tout Mine. One car of copper sulphide ore has been shipped to El Paso Plant and another is being loaded at Willcox.

Dragoon, Republic Camp, Jan. 19

13. Coronado Copper and Zinc Co. Looked over new mill construction at Republic Mine and met members of the staff:

G.W. Nicolson, Superintendent (formerly superintendent at Cyprus)
H.W. Heuck, Assistant Superintendent
G.M. Grant, Engineer
George Reed, Mine Foreman
E.V. Givens, Mill Superintendent
George Freeman, Assayer
Joe Bradley, Accountant.

The pipeline from wells some nine miles distant has been completed. Construction of the power line from McNeil (Sulphur Spring Power Co.) is now under way and will be completed some time in February. The construction of the mill is nearing completion. Buildings have been completed and hoisting machinery has been set in foundations. The first unit of the mill consists of 250-ton coarse-ore storage bin at the headframe. This discharges to the jaw crusher followed by three-foot Symons cone crusher, thence by inclined conveyor to fine ore storage bin of 250-tons capacity. Ore sampler is located between the end of conveyor and the fine-ore storage bin. Fine crushing is done in 7 by 9 Marcy type ball mill in closed circuit with Aikins type classifier. Flotation cells for separation of copper and zinc are Denver Sub A. Most of this equipment has been brought in from the Cactus Queen Mine at Mojave, California. This unit is designed

Coronado Copper and Zinc Co., Con't.

to mill 175 tons per day. Provision has been made for a second unit when needed, consisting of fine-grinding and flotation units. Coarse crushing is sufficient for 350 tons per day. The plant is well laid out and should function without difficulty. All power will be electric.

Many nice-looking four-room houses have been constructed. These are made of prefabricated sections and appear comfortable. Each is supplied with Butane gas for cooking and heating and each has automatic hot water boilers. These four-room houses are rented at a nominal figure--$12 per month I believe. The occupant pays for gas and light. In the Mexican colony houses are of similar construction with coal stoves. These are rented at $8.00 per month.

Unless unforeseen delays occur in delivery of transformers, milling operations should be well under way by March 1, 1945. The Republic Mine is operated through a 40° inclined shaft to the 700 foot level(on incline), then a long drift at the end of which is another inclined winze to the 1280 level, thus requiring double hoisting. After milling operations are started a raise will be driven from the 1280 level to connect with the main shaft to eliminate one hoisting operation.

The vein is about 30 feet wide and reported to average 1.5% Cu, 10 to 12% Zn. The better values are in the hanging wall portion. In order to produce more copper, the plan is to mine 8 to 10 feet of hanging wall which should give mill heads assaying 2% Cu, 8% Zn. The operators feel confident that actual milling operations will yield the same satisfactory recoveries and grades of concentrates as shown by laboratory tests.

Contracts for copper and zinc products have been signed for El Paso and Amarillo Plants.

BRENT N. RICKARD

Mr. H.W. Kaanta

cc: E.M. Walker
T. Guess
C.H. Levise
E.L. Jourda
H.O. Woods
T.H. Loerpabel
A.W. Frolli
H.W. Kaanta
F.M. Stephens
F.C. Blickensderfer

SOUTHWESTERN ORE PURCHASING DEPARTMENT
Tucson ARIZONA

March 29, 1943

Mr. R. D. Bradford, Manager

EL PASO PLANT

NEW MEXICO TRIP, MARCH 18-27 Incl.
BRENT N. BICKARD

The purpose of the trip taken at this time was to check up on:

(1) Prospective shipments to El Paso from San Pedro Mine (copper sulphide ore) and siliceous fluxing ore from the Stauber and d'Autremont mines at Pastura.

(2) Lead-Zinc mining operations in northern New Mexico to see if there might be anything of interest in connection with the Magdalena investigation. The only operations I saw are small but might be investigated--the Tom Payne, Cash Entry, and Pennsylvania Mines, all in Los Cerrillos District, Santa Fe County, covered in this report.

(3) Manganese project, Deming--sampling procedure.

El Paso Plant, March 19-21

1. Checked El Paso letter files, reports and shipments covering New Mexico production in recent years.

2. Alamogordo Lead Mine: Talked with Homer Hirsch regarding his operations at Warnock Mine near Alamogordo. He is doing nothing at present as snow is deep, but said he would tell Mr. Bradford when he is ready to have us make examination.

Albuquerque, March 23

3. San Pedro Copper Mine, Santa Fe County.

Location: The mine is located about 30 miles northeast of Albuquerque in the San Pedro Mountains, about two miles from the town of Golden. The nearest railroad loading point is Los Cerrillos involving a haul of 18 miles at a cost of $1.50 per ton.

History: This mine, one of the largest in the district, has been worked intermittently since 1839. Two smelters were built to handle the ores. The older one was at San Pedro. Later, in 1899, a smelter was built near the mine and operated at irregular intervals until 1918.

Geology: In Bulletin No.7 of New Mexico State Bureau of Mines and Mineral Resources Samuel G. Laskey and Thomas P. Wootan describe the geology as follows:

"The San Pedro Mountains are largely the result of erosion of a granodiorite porphyry laccolith intruded into Pennsylvanian and Permian strata. Contact metamorphism of the sediments is pronounced, especially in the roof of the laccolith. . . . The contact metamorphic copper deposits in limestone are confined to the lower part of the sedimentary rocks which form the roof of the laccolith. The limestone has been garnetized and recrystallized. Chalcopyrite is the chief ore mineral, and the ores contain a small quantity of silver and gold. Oxidation is shallow."

San Pedro Mine, Con't.

Ore Deposit: The San Pedro Mine ore occurs in flat-lying beds dipping east 10 to 15 degrees. One favorable bed appears to have a width of 60 to 70 feet and has been opened for a length of 2500 feet and may extend another 1000 to 1500 feet. There is a considerable amount of 15% Cu shipping ore broken in stopes and in pillars and backs which the present operators are getting ready to mine.

The deposit is opened by a 300-foot vertical 2-compartment shaft and an adit tunnel driven on what is called the shaft fault and known as the "Swan" tunnel. This intersects the shaft at the 200-foot level and is the present working opening, as there is no hoisting equipment at the shaft.

The following sections of the mine were examined at the time of my visit:

a. Swan tunnel to west stope on Richman claim and No.1 stope on White claim: Here there is a considerable tonnage of 15% Cu ore ready for shipment broken in stopes and in backs and pillars--possibly 10,000 tons.

b. Down the 1500-foot incline on 31 stope level to water level: This portion of the mine, on the Bonanza Claim, is section from which the last operator, Raskob Mining Interests, mined milling ore. No ore is developed in this area.

c. No.42 Stope: Mr. Stewart reports this stope contains 20,000 tons of oxidized ore assaying $10 in gold and 4% Cu. He submitted samples to El Paso from this area.

d. Spanish stope or workings in upper area: Said to contain 20,000 tons of broken ore similar to the carbonate or oxidized ore in stope No. 42.

Mr. Stewart estimates at least 10,000 tons of 15% Cu sulphide shipping ore and possibly 40,000 tons of 4% Cu carbonate ore that can be shipped if freight and smelting rates are favorable and if he can obtain favorable quota consideration. He plans to start shipments as soon as purchase agreement with owner has been completed.

Ownership: The property was formerly owned by Santa Fe Gold and Copper Company, for whom Julian Kent of Santa Fe was agent. In 1937 Mr. A.B. Stewart secured lease and option but his backers failed him and the property was acquired in 1938 or 1939 by Raskob Mining Interests who shipped crude ore and later constructed a power plant and mill and made shipments to El Paso As follows:

Year	Tons	Class	Au-Oz.	Ag-Oz.	Cu-%
1939	2068	Ore	0.30	4.0	16.2
1940	3296	"	.40	4.0	16.0
1941	3093	Concts.	.40	6.5	30.0
1942	2587	"	.30	6.5	28.0

San Pedro Mine, Con't.

At the end the operation was managed by Charles L. Bradbury of Albuquerque. Operations were discontinued in August 1942 and part of the milling equipment was moved to the Waldo Mine of Ozark Smelting and Mining Company which Raskob had under lease and relinquished after some months of operation.

Messrs. Andrew B. Stewart, 303 South 7th Street, Albuquerque, and office at 208 Albuquerque National Bank Bldg., and Dexter Hunter, present address Alvarado Hotel, Albuquerque (member of the firm of Cluett, Peabody & Co., Troy, N.Y.) are now arranging to buy the mine from Raskob Mining Interests at a price of $15,000, of which $5000 goes to the former manager Charles L. Bradbury.

The power plant and mill are not included in the deal, though I believe they have an option to purchase the power plant. Stewart does not contemplate doing any milling, and I see no reason why he should at present.

Mr. Hunter is now in the East and expects to close the deal very shortly after which shipments should start quickly. Jake Baca and a crew of three or four men are now breaking ore.

Conclusions: In 1940 Mr. Landwehr examined the mine and thought it had fair development possibilities. I believe it should be investigated again, as it is a potential source of copper sulphide ore for El Paso. The analysis of crude ore shipments is:

Au	Ag	Cu	SiO2	Fe	CaO	S
0.3	4	16	25	23	5	18

4. Carnahan Mine (Pb-Zn). The Carnahan, also known as Anaconda, lies about one mile east of San Pedro Mine and is included in the ground being purchased by Stewart and Hunter from Raskob Mining Interests. This property (now idle and all equipment removed) was reported on by Mr. Hatcher in 1928. He reported $400,000 expended or $12.00 per ton ore mined on which no profit had been realized. He considered the future outlook far from bright. During 1925-28 Carnahan Mines shipped lead concentrates to El Paso and zinc concentrates to Amarillo. Head assays were:

Ag	Pb	Zn
3 to 10 oz.	10 to 20%	10 to 23%

Stewart does not contemplate doing anything with this mine.

Los Cerrillos District, March 24th

5. Tom Payne Mine (Pb-Zn), located 61 miles northeast of Albuquerque--55 miles north on Santa Fe highway 85, then east 8 miles past the Tiffany Turquoise Mines. The mine has recently been acquired by Messrs. Stewart and Hunter and is being reopened on an R.F.C. loan of $25,000. It is developed by a single compartment shaft dipping about 70° with levels driven east and west for total distance of about 1000 feet at 100 and 200 feet below collar. Walls are good and 4.5 to 5 feet between walls. The ore is 18 to 30 inches in width with average assays of 3500 tons mined and milled by Harr Brooks in 1916: Ag 2.5 oz., Pb 9.0%, Zn 14.0%. Brooks had a small mill on the river at Los Cerrillos.

Tom Payne Mine, Con't.

Messrs. Stewart and Hunter have a small crew of men at work under the supervision of McCarthy and are repairing and retimbering caved areas getting ready to sink another 100 feet.

Our reports indicate narrow veins and short ore shoots. However, I believe the mine should be examined. It would be a small operation but seems to have possibilities. I suggested that Stewart send a representative sample to Hanover Mill.

For the purchase of the mine Stewart has made a small cash payment and the remainder $9000 will be paid out of royalties--10% of net mill or smelter proceeds. The owner is Harr Brooks of Albuquerque.

6. Cash Entry Mine(Pb-Zn) This mine, 3 miles east of the Tom Payne on the road to Los Cerrillos, in its day was a good sized operation. Our reports indicate that the veins are narrow and ore shoots are short.

It is owned by Baird of El Paso and is under lease and option to Messrs. Rieber and Phillips of Colorado with whom Mr. Benjosky is associated and in charge of mining operations. I talked with Mr. Benjosky who would like to have us look at the mine. I understand that the purchase price to present owners was $10,000, $5000 down and balance to be paid later.

The property consists of 150 acres of patented ground--one shaft 600 feet, another 450 feet, and one 92 feet which is the one Mr. Benjosky is driving and from which he has extracted some very good grade lead-zinc ore (sulphide). I understand that American Metals drilled this ground and rejected it, as did Howe Sound. With present premiums it may have added interest, and I recommend that it be investigated.

7. Pennsylvania Mine (Pb-Zn). This mine is located between the Tom Payne and Cash Entry mines and is under lease to W.S. Smith, a former State Highway Dept. employee, and Samuel K. Karnes of Santa Fe. Development money has been advanced by James Russell, insurance broker of Santa Fe and present operator of the Stauber Mine. I understand that Smith and Karnes have taken on many claims on a 10% royalty and minimum monthly royalty basis. They have, I understand, shipped three cars of good grade lead-zinc ore to Hanover Mill. I believe we should see what they have.

8. Harvard Copper Mine. Mr. A. B. Stewart spoke to me about this copper prospect three miles east of Chloride, N.M., and three miles southeast of Winston and said he would be glad to show it. It is patented ground--four claims known as Rifle Shot--and is owned by Harvard University. Mr. Stewart says there is rich copper carbonate ore on the surface with good values in gold. He thinks a large body of copper sulphide ore will come in a few feet below surface. This is only a prospect but might be worth investigation. Mr. Stewart is a Scotchman and mining engineer of wide experience in Canada, Australia, and the United States.

Pastura (Pintada) District, March 25

9. I.J. Stauber Mine, Guadalupe County. This mine is 2.5 miles north of Highway 54 between Pastura and Santa Rosa. It was located in 1925 by Stauber, one of a syndicate consisting of Ira Wright, Ira B. Joralemon, Hubert d'Autremont and Maurice d'Autremont. Stauber investigated the property for the syndicate and, as the others were not interested, he took it for himself and is said to have made about $175,000 in profits during the years he operated--1925 to 1930.

After his death a few years ago the property went to his wife Grace Stauber who leased the mine to Alexander Bonnyman, Jr., of Santa Fe. Mrs. Stauber subsequently died and ownership now lies with Stauber's brother and sister. Bonnyman has joined the Army and the mine is now being operated by Guadalupe Mining Company directed by James Russell, 137 Sena Plaza, Santa Fe, and his assistant Harold D. Walters, both of whom were formerly in the office of American Metals Company at Terrero and know the mining business. The mine superintendent is Richard Kelly, a former shift foreman at the Pecos Mine.

Mr. Walters accompanied me to the mine where I found the U.S. Bureau of Mines had set up a camp under supervision of Ray J. Holmquist, Santa Rosa, working out of the Silver City office. For the U.S. Geological Survey Mr. R.D. Sample, Box 321 Santa Rosa, made up a set of contour and mine maps. These departments are starting to make a careful study of this mine and the adjoining mine owned by H.H. and Maurice d'Autremont. They have already started several test pits on the Stauber ground. The purpose of the investigation, I understand, is to determine the extent and grade of this copper deposit in sandstone and to see if leaching the large tonnage of 2% Cu is feasible.

Harry P. Hill examined this mine in 1937 and reported on it under date of April 5, 1937 in Field Notes. Based on Joralemon's report of December 1928 showing total 43,085 tons, adding tonnage subsequently developed and deducting Stauber's shipments, Hill reported 22,599 tons remaining with average grade 4.77% Cu.

On March 27, 1940, Mr. W. R. Landwehr submitted a report on his examination made for El Paso Plant. At that time the Bonnyman lease had been in operation for nearly a year. Many of the caved workings reported by Hill had been cleaned out and modern equipment installed for mining and hauling. Mr. Landwehr estimated 25,000 tons remaining in pillars in the western area and estimated that adjacent areas might produce an additional 5000 tons or total 30,000 tons assaying: Ag 0.2 oz., Cu 4.8%, SiO_2 80%. Mr. Landwehr thought that there were good development possibilities and recommended that underground workings be driven from outcrops and that prospecting for extension of Stauber west orebody be carried on by extending present working face. These recommendations are being followed with encouraging results.

It is my opinion that this prospecting and development program, together with a possible increase in premium, may double the tonnage reported by Hill and Landwehr.

The present operators have done some stripping and are now trying to rent a large bulldozer or blade. On March 25th they had loaded 23

I.J.Stauber Mine, Con't.

60-ton cars since the first of March. If El Paso will permit them to ship 4000 tons per month, they can open up additional sections and will go to work in earnest on the basis of stripping rather than room-and-pillar mining. I believe they can do a large amount of stripping, but the beds are dipping into the hills to the north and theamount of mining to be done in this way is limited. However, it is reported that the beds take a roll upward so that stripping ratio will never exceed two waste to one of ore. My impression is that this mine now has intelligent management and supervision, and if it is possible to let them increase shipments they should be able to cut costs and supply El Paso Smelter with a minimum of 5000 tons per month of 4% to 4.5% Cu ore.

The following is a tabulation of receipts at El Paso from the time I.J. Stauber first opened the mine.

	Year	Dry Tons		Cu-%	SiO2-%
I.J.Stauber Shipments					
	1925(6 mos.)	3182		5.27	75.7
	1926	6642		5.24	79.6
	1927	6583		4.57	79.5
	1928	13685		4.64	82.2
	1929	16361		4.71	80.3
	1930(8 mos.)	10125		4.88	78.5
	Total		56578		
Alex Bonnyman,Jr.					
	1940	2605		4.75	82.0
	1941	2415		4.50	84.0
	1942(7 mos.)	3550		4.50	83.0
	Total		8570		
Guadalupe Mining Co.					
	1942(5 mos.)	3948		3.90	84.0
	1943				
	January	1071		4.07	84.2
	February	2010		3.69	82.6
	Total		7029		
Grand Total			72,177		

All shipments average 0.2 oz. silver, no gold.

Tonnage Remaining in Stauber Mine: In 1937 Mr. Harry P. Hill estimated tonnage remaining in the mine 22,599 tons. Since then Alexander Bonnyman,Jr., and Guadalupe Mining Company shipped up to March 11,1943, a total of 15,599 tons, including pillars that Hill figured would not be mined. In 1940 Mr. Landwehr estimated 30,000 tons. Following Mr. Landwehr's report themine produced about 13000 tons, leaving 17000 tons remaining as compared with 7000 tons according to figures based on Mr. Hill's estimate.

Referring to Joralemon's report of December 20, 1928, at a time when the mine had produced 27,333 tons, he estimated the combined mined and developed tonnage as follows:

I.J.Stauber Mine,Con't

Area I (East		48,085 tons
" II (West)		40,563
Total		88,648
Area III -Later developed by Stauber		50,914
Total		139,562
Less 20% loss in pillars		27,912
Net available		111,650 tons
Less shipments by:		
Stauber	56578	
Bonnyuan	8570	
Guadalupe Mg. Co.to3/1/43	7029	72,177
Balance remaining		39,473 tons

I believe El Paso may safely count on at least 20,000 tons yet to come from this mine and possibly up to 40,000 or 50,000 depending on method of mining and price paid for copper.

10. d'Autremont Property: Messrs. H.H. and Maurice d'Autremont, 204 Southern Arizona Bank Bldg.,Tucson, own four 40-acre plots northeast and directly adjoining the Stauber Mine. In 1940 Mr. Maurice d'Autremont tested this area by diamond drilling and delimited the orebody. He estimates 3000 tons of 4% Cu or 5000 tons of 3% Cu ore. We have agreed to take at El Paso up to 1000 tons per month and he is now making arrangements to get started. The War Production Board has indicated they will give him an additional premium of 3¢ per pound copper which he must have in order to make the operation pay. He has all equipment needed to start mining but will have to ask the Southern Pacific to do something about car loading facilities at Guadalupe. The siding now holds only six cars and has two ramps built by Guadalupe Mining Company. Mr. Russell tells me he cannot let d'Autremont use these, especially if he increases tonnage. The railroad could easily extend the present siding several more car lengths and connect the west end with the main line the same as the east end.

Deming, March 26

11. Manganese Project: I visited the stockpile area, talked with the clamshell operator, looked at the crushing layout, and then had a talk with Mr. Blickensderfer. At Albuquerque a few days previously I met Mr. Rufus Little of Newalpitt Corporation who unburdened himself to me. He has two well founded complaints:
(a) Our sampling facilities (approved by Metals Reserve Company) have no provision for handling lumpy ore and he feels that sampling is inaccurate and that he may not be getting correct payment for manganese content of his ore. He understands our position but claims that the Smelting Company is getting a bad name because of poor sampling practice.

Deming Manganese Project, Con't.

(b) Metals Reserve Company has refused to give him a "plate" sample from reject at Deming. He must therefore wait several days, or a week or two at times, for his sample as prepared by El Paso Testing Laboratories. He insists he should be given a sample from each car as unloaded. I understand that Metals Reserve says no.

I am satisfied that our sampling is as good as could be expected under the circumstances, but under no circumstance could it be considered as accurate. While Newalpitt fears it is not being paid for enough manganese, it may be the other way around. Of course we are taking every precaution to guard against errors in sampling, but any sampling of coarse lumpy ore mixed with fine ore can approach accuracy only when the larger pieces are reduced in size before the sample cut is taken. An error of 1% Mn on the tonnage involved would more than pay the cost of a crushing and sampling plant.

All of this has been the subject of correspondence between Messrs. Guess, Blickensderfer, Newalpitt Corporation, and Metals Reserve Company. The latter company ~~apparently~~ approves the present sampling procedure and there is little we can do under the circumstances.

BRENT N. RICKARD

2/1/45

Memo from the desk of

B. N. RICKARD

To

Dear Mr Kaanta

You may find something of interest in these reports - But please dont pass them around, our shippers might object - and besides - it is confidential information -

Best Regards -

Brent M Rennaid

Date

CAIRNS PRINTING CO.—EL PASO