UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

Air Mail

September 19, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 1722-X, Tucson Mining Co., applicant, Tit-for-Tat, Bobby, Bonanza and Helmet Peak Zinc-Lead Mine, Pima Mining District, Pima County, Arizona

Enclosed herewith are the original and two copies of the report on the subject docket.

We concur with the conclusions and recommendations of the examining team that the exploration loans of $300,000 and the development loan of $172,500 be denied.

The brochure is enclosed.

for Stanley Allsman
J. H. East, Jr.

A. H. Koschmann
A. H. Koschmann

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

September 19, 1951

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 1722-X, Tucson Mining Co., applicant, Tit-for-Tat, Bobby, Bonanza, and Helmet Peak Zinc-Lead Mines, Pima Mining District, Pima County, Arizona

The applications with the subject docket were for three exploration loans of $100,000 each on the Tit-for-Tat, Bobby and Bonanza Claims and for a production loan of $172,500 on the Helmet Peak Mine.

Mineralization at the Tit-for-Tat, Bobbie and Bonanza claims consists of small discontinuous lenses of complex sulphide minerals in narrow, shallow-seated veins.

At the Helmet Peak Mine, an extensive zone of brecciated andesite has been altered and mineralized with pyrite and minor amounts of lead zinc and copper minerals. This has been developed to a depth of 600 feet, but there are not any records of production. In December, 1928, J. M. Libbey reported reserves, largely inferred, of 260,000 tons containing 0.50 percent copper, 1.2 percent lead and 3.3 percent zinc.

In view of the small size of the veins at the exploration project and the low grade of the ore at the development project, the examining engineer recommends denial of all the applications.

We concur with this recommendation of denial.

Paul T. Allsman

Paul T. Allsman

Mining Division
Date Rec'd.

SEP 17 1951

BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Arizona-New Mexico Branch
[redacted]
Box 4097
UNIVERSITY STATION

TUCSON, ARIZONA

MINING DIVISION
REGION IV

September 13, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Final Report, DMA Docket 1722X, Tucson Mining Co's. Tit-for-Tat, Bobby, Bonanza, and Helmet Peak Mines, Pima Mining District, Pima County, Ariz.

Enclosed are original and 7 copies of the above report by L. L. Farnham of the Bureau of Mines. No separate geological report will be submitted.

As the original application, docketed as DMA-1722X, contained four separate proposals for the four different properties, this report has been written to cover all properties although four separate reports probably should have been made.

The report has my approval.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC P. T. Allsman (7)
C. A. Anderson
DMA-1722X
DF

FOR VICTORY
BUY UNITED STATES SAVINGS BONDS AND STAMPS

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-1722X - Tucson Mining Co's. Tit-for-Tat, Bobby, Bonanza, and Helmet Peak Mines

Pima Mining District, Pima County, Arizona

L. L. Farnham, Mining Engineer
U. S. Bureau of Mines

September 1951

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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By L. L. Farnham 1/

In June 1951, the Tucson Mining Co. applied to the Defense Minerals Administration for three exploration loans and one production loan. These applications were all designated DMA-1722X. The exploration loans of $100,000 each were requested for three separate mining properties, known as the Tit-for-Tat, Bobbie, and Bonanza. The production loan of some $172,500 was to be used for equipment, rehabilitation, mine development and the construction of a 150-ton mill on the Helmet Peak deposit. The ores of all these properties are complex sulphides containing gold, silver, lead, zinc, and small amounts of copper.

The mines are in the old Olive Silver camp area of the Pima Mining District of Pima County, Ariz., about 20 miles southwest of Tucson, Ariz.

The Tit-for-Tat, Bobbie and Bonanza deposits are veins occupying brecciated fractures in volcanic rocks. The ore in the fractures occurs as narrow discontinuous streaks and lenses with an average width of less than 12 inches. There are a few hundred tons of indicated and inferred ore in the Tit-for-Tat vein, having a content of some 20 ounces of silver per ton and about 23 percent of combined lead and zinc, and 1.6 percent copper. The net value of this ore, after marketing, is about $46 a ton, while the cost of production will probably exceed $50 a ton.

1/ Mining Engineer, Bureau of Mines

The underground work on the Bobbie vein was inaccessible, but due to its similarity to the Tit-for-Tat, any ore reserves it might contain would no doubt, be sub-marginal.

The Bonanza deposit is an un-explored prospect with a narrow vein that does not appear promising.

Exploration by means of drilling, as suggested by the applicant, is not suitable for these steep dipping veins and their small sporadic ore shoots.

It seems unlikely that further exploration of these deposits would disclose any significant amount of base metal ores. Therefore, it is recommended that the application for exploration loans on the Tit-for-Tat, Bobbie and Bonanza properties be denied.

The Helmet Peak deposit is unique in the Olive camp area. Though mineralogically similar, it differs greatly in size from the narrow vein deposits that characterize the district. The Helmet Peak is of the disseminated type of mineralization occurring in a rather extensive zone of shattered andesite. The mineralized area has an apparent length of 300 feet or more, and a width of 150 to 250 feet. Sulphides of iron, zinc, lead, and copper have been erractically distributed as discontinuous streaks and aggregates within the altered breccia. The deposit has been rather extensively explored but only meager information is available as to the results of the work. Practically all of the mine workings now are inaccessible. The only information known concerning the value of the deposit is contained in two rather optimistic reports made when the mine was accessible.

One of these reports estimates that in the better mineralized areas of the mine there was 260,000 tons of ore that possibly could be mined separately. The average content of this ore was given as 0.01 ounces gold and 1.3 ounces silver per ton, 0.50 percent copper, 1.2 percent lead, and 3.3 percent zinc. At the present time if a mill recovery of 65 percent of the metal content could be obtained ore of the above grade would have a value of about $7 a ton. Operating costs, employing selective mining by cut-and-fill methods, would exceed $9 a ton.

In this spotty type of mineralization it appears doubtful to the writer that the areas of better grade ore would be persistent enough to permit of extensive selective mining, even if it were possible from an economic standpoint.

Judged from all available information it appears that the future value of the Helmet Peak deposit will depend upon the average metal content of the whole mineralized body rather than on certain scattered enriched areas. There is no information as to what the value of the whole deposit might be. Statements made in the report, previously mentioned, indicate that the higher grade portions may only constitute one half of the entire deposit. Thus, if the poorer areas are largely waste and have no appreciable value, then the deposit as a whole would be far below an economic grade.

Therefore, it is recommended that the application for a production loan on the Helmet Peak deposit be denied.

TUCSON MINING CO'S. TIT-FOR-TAT, BOBBY, BONANZA, AND HELMET PEAK MINES PIMA MINING DISTRICT, PIMA COUNTY, ARIZONA

Engineering Report

By L. L. Farnham
Mining Engineer
U. S. Bureau of Mines

September 1951

TUCSON MINING CO'S. TIT-FOR-TAT, BOBBY, BONANZA, AND HELMET PEAK MINES PIMA MINING DISTRICT, PIMA COUNTY, ARIZONA

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INTRODUCTION

This report covers the results of investigations of the Tit-for-Tat, Bobbie, Bonanza, and Helmet Peak properties made in connection with the loan application of the Tucson Mining Co. to the Defense Minerals Administration. The writer visited the properties during the week of August 13, 1951.

The applicant requested 3 exploration loans of $100,000 each for the Tit-for-Tat, Bobbie, and Bonanza mines and a production loan of $172,000 for the Helmet Peak deposit which was to be used for equipment, rehabilitation and development of the mine and the construction of a 150-ton mill. The ores of all the properties contain silver, lead, zinc, and minor amounts of copper. Although all these 4 mines are in the same vicinity they are separate and distinct deposits, so that work performed on one would not serve the others.

ACKNOWLEDGMENTS

Acknowledgments are hereby made to Sam Coldren, who had charge of the Tucson Mining Co's. operations at the time of this examination, for his help, and to the former engineers and geologists whose data were used in this report.

LOCATION AND PHYSICAL FEATURES

The Tit-for-Tat, Bobbie, Bonanza, and Helmet Peak properties are all located in the old Olive Camp area of the Pima Mining District, Pima County, Ariz. This district lies on the northeasterly flank of the Sierrita mountains, 21 miles southwest of

Tucson, Ariz. It is reached from Tucson over the San Xavier Mission and Twin Buttes road (Fig. 1). All but the last 8 miles of this highway now is paved. The Bobbie and Bonanza claims lie adjacent to this road about 1,500 feet south of the San Xavier mine shaft. The Helmet Peak property is about one mile west of the Twin Buttes highway and is reached over a branch road that leaves the highway about 0.6 of a mile south of the San Xavier mine. The Tit-for-Tat is on this same branch road about 1,200 feet west of the Helmet Peak deposit (Fig. 2).

The area covered by the claims is relatively flat with a few rounded hills and ridges rising less than 100 feet above the numerous washes. The altitude varies from 3,500 to 3,600 feet above sea level. Marble mountain, San Xavier ridge and Helmet Peak, lying to the northeast, rise prominently above the surrounding area. The climate is semi-arid and the region is covered with typical desert vegetation.

HISTORY AND PRODUCTION

Mining is said to have started in the Olive camp in 1886. The superficial mining of rich silver ore found in some of the numerous narrow veins continued until about 1893. The total production of the district has been estimated at not more than $3,000,000, coming from small sporadic shoots of ore in the oxide zone. Some of the ores are said to have contained several hundred ounces of silver a ton. Very few of the old workings are deeper than 300 feet and many are said to be much less.

Numerous attempts through the years have been made to operate

many of these old properties, but few, if any, appear to have been successful. Although there are no records, the Tit-for-Tat and Bobbie veins evidently produced some ore. The undeveloped vein on the Bonanza group has had no production, and little if any ore was produced from the Helmet Peak deposit.

OWNERSHIP AND EXTENT

Tax title to the Tit-for-Tat and Helmet Peak group of 7 patented claims was purchased by Fred W. Fickett and Ruth T. Fickett of Tucson. The Bobby group consists of 6 unpatented mining claims and is owned by Henry H. Mayer and Fred W. Fickett. The 8 unpatented claims comprising the Bonanza group are held by Henry H. Mayer and Eleanor C. Sellers.

In November 1950, J. C. Howard, Jr. of California obtained options to purchase these various groups. The exact terms and conditions of the lease and options are not know. In March 1951, J. C. Howard, Jr. assigned a one-half interest in these contracts to Warren Hessler of Los Angeles, Calif. Early in April 1951, a limited partnership was formed with Warren Hessler as general partner and some 19 others as limited partners. This partnership is known as the Tucson Mining Co.

DESCRIPTION OF THE DEPOSITS

The geology of the Olive Camp area is highly complex. Younger sedimentary rocks appear overlain by older formations. Volcanic flows spread over much of the district. Folding and faulting preceeded and followed an extensive invasion of later granite which forms the core of the Sierrita mountains. This granite contact

with the older rocks lies about three-quarters of a mile west of the Tit-for-Tat and Helmet Peak deposits while another small mass is exposed one-half mile to the north (Fig. 2). Most geologists who have studied the area believe that this granite underlies the Olive Camp at comparatively shallow depth. The productive veins of the district occupy narrow branching fractures in the older volcanics and sedimentary rocks. Near the main granite mass none of the veins appear to cross the contact into the granite. Some are reported as having a granite footwall but none are known lying solely within the granite.

Description of Tit-for-Tat Vein

The principal vein on the Tit-for-Tat claim is one of the numerous narrow, steeply-dipping, northeasterly-trending fracture zones in which the rich silver ores were sought in the eighties. It has recently been rehabilitated and further developed by the applicant. The accessible portions of the mine workings are shown on figure 3.

The vertical fracture cutting the andesite is exposed for about 500 feet along the strike and to a depth of 120 feet below the surface. The vein filling is principally crushed wall rocks through which run separate streaks and small lenticular masses of lead, silver, zinc, and copper minerals. The width of the fracture zone varies from 2 to 6 feet. The widest part of the ore observed was 12 inches, and in many places it was less than 2 inches.

The applicant at the time of this examination had completed about 45 feet of further shaft sinking below the 70-foot level and 105 feet of drifting. All of this work had followed the vein. From this 150 feet of work, by selective mining and sorting, about 50 tons of ore had been produced. The average width of the ore in this part of the mine was about 6 inches.

The ore minerals are sphalerite, galena, and minor amounts of chalcopyrite. Pyrite is abundant within the better mineralized parts of the vein and also is disseminated in the silicified wall rocks, whereas the lead-zinc minerals are largely confined to definite streaks and lenses in the vein matter.

Former stoping was evident but its extent and the resulting production are not known. In 1948, H. E. Krumlauf and associates did some exploration work on the Tit-for-Tat vein which included 3 short diamond drill holes. Two of these holes cut about 6 inches of sulphides at depths of 25 and 45 feet below the 70-foot level. The third hole near the westerly end of the level failed to intersect ore minerals (Fig. 3).

Description of the Bobby Vein

The principal vein on the Bobby No. 1 claim, as observed on the surface, appears to have the same characteristics as the Tit-for-Tat. It has been developed by four shafts, the deepest of which is said to be 300 feet. All of the underground work is now inaccessible. The fracture filling is brecciated wall rock, varying in width from 2 to 5 feet, in which lead, silver, zinc, and copper minerals were irregularily distributed. The mineralized portion of the fracture is traceable at intervals on the surface

for about 600 feet. It has a strike of N. 35° E. and a northerly dip of 60° (Fig. 4).

No information is available as to the past production or if any ore still remains in the mine. Two grab samples taken from a few tons of selected ore still remaining at shafts No. 1 and No. 3 averaged 0.09 ounces of gold and 9.3 ounces of silver per ton, 18.0 percent lead, 0.6 percent copper, and 0.5 percent zinc.

Description of the Romanza Vein

The narrow fracture zone on this group, which the applicant proposed to explore, is located on the Vienna claim (Fig. 2). Exploration was limited to a few surface cuts and a shallow prospect shaft, so that the possible extent of the vein was not disclosed. Some iron gossan was present but no ore minerals were evident.

Description of the Helmet Peak Deposit

The Helmet Peak deposit is not of the narrow vein type that characterize the other ore occurrences of the Olive Camp area. The mineralized body is more of the disseminated type occurring in a broad zone of shattered andesite. Part of its outcrop stands above the alluvium in the westerly end of the Camden No. 2 claim and evidently extends into the easterly portion of the Elsie claim (Fig. 2.) Pyrite, lead, zinc, and copper minerals have been deposited in a brecciated zone having an apparent length of 500 feet or more, and a width of 150 to 250 feet.

In the mid-twenties the deposit was rather extensively explored to a vertical depth of 600 feet with some 3,500 feet of lateral work (Fig. 5). Since that time the property has remained dormant.

Water now stands about 80 feet below the surface and with the exception of some minor shallow openings, all the mine workings are inaccessible. There are no production records. The available maps show no raises or stopes, so evidently little if any production resulted from this work. Very meager information exists as to the extent and value of the material exposed by this exploration.

The applicant recently rehabilitated a 52 foot shaft, known as the Billings, which is located near the center of the mineralized area (Fig. 5). From the bottom of this shaft about 100 feet of lateral work extends partially across the deposit. This work was accessible and was examined by the writer. There pyrite was the most abundant mineral and appeared rather uniformly disseminated through the soft altered rock. Minor amounts of copper, lead, and zinc minerals occurred sporadically in streaks and small bunches, apparently localized to some extent along the numerous irregular fracture planes. Various sized masses of un-replaced andesite were scattered within the mineralized material. Chalcocite coatings on the sulfide minerals were prominent, indicating that at this horizon some secondary enrichment of copper had taken place.

ORE RESERVES

Tit-for-Tat Vein

The vein where exposed on the Tit-for-Tat claim contains a few hundred tons of indicated and inferred ore which can be mined by roguing and sorting. Approximately 35 tons of ore recently

mined by the applicant was shipped to the custom mill of the American Smelting and Refining Co. at Deming, N. Mex. A sample of this shipment assayed 0.02 ounces gold and 20.31 ounces silver per ton, 8.63 percent lead, 1.66 percent copper, and 13.86 percent zinc. Under the terms of the mill schedule the outcome on this ore was $46.40 a ton after deducting the milling charges ($4.00) and the freight ($4.50) from Sahuarita, Ariz. to Deming, N. Mex. During the short operation of the property by Kremlauf in 1948, about 50 tons of ore were produced which is said to have averaged about 8.5 ounces silver per ton, 15 percent lead, and 10.2 percent zinc.

If the same care is used in the future mining and sorting as was used in the recovering of the above shipments the present mineable ore reserves would no doubt be of comparable value.

Bobby Vein

The old underground workings on the principal vein of the Bobby No. 1 claim were entirely inaccessible. There are no records as to production, extent of the workings, nor whether or not any ore remains in the mine.

The relative size of the waste dumps resulting from past development would indicate that probably only a small proportion of the vein matter was ore. Although leasing operations might produce ore, it appears unlikely that any significant production would result from the further exploration of this narrow vein.

Bonanza Vein

There are no ore reserves in this fracture, which the applicant proposes to explore. The appearance of the vein as exposed in a few shallow prospect openings does not appear promising enough

to justify further exploration.

Helmet Peak Deposit

C. J. Earle, a former professor of geology at the University of Arizona, made an examination of the Helmet Peak property in 1926. At that time the underground workings had reached a depth of 150 feet. In December 1928, J. M. Libbey, a registered mining engineer, examined the mine at which time it had reached its present depth of 600 feet. As far as known, these reports constitute all the published information there is concerning the value of the deposit. Since it is now impossible to gain access to the underground workings, the opinions expressed in this report are based upon the conclusions of the foregoing men.

C. J. Earle estimates that a certain portion of the deposit, lying between the 50 and the 150 foot levels of the Helmet Peak mine, contained 100,000 tons having an average content of 0.01 ounces gold and 1.67 ounces silver per ton, 1.56 percent copper, 0.9 percent lead, and 2.0 percent zinc. This estimate was based upon the results of 12 samples, nine of which represented the drifts on the 50-foot level of the Billings shaft and three samples from the westerly end of the 150 level (Fig. 5). Earle took 20 samples altogether in the mineralized area but excluded eight of the lower grade ones in his calculations of the value of the ore, assuming by so doing that the 100,000 tons could be mined without taking the lower grade areas. The average of all of Earle's samples was: trace of gold and 1.15 ounces of silver per ton, 0.89 percent copper, 0.63 percent lead, and 2.0 percent zinc. The location of the individual samples are shown on figure 5 and the assay results are shown in the appendix.

Libbey's report only summarizes the tonnage and average grade of certain selected sections of the deposit. His general average for 260,000 tons (largely inferred), lying between the 50 and 400 feet levels, was 0.01 ounces gold and 1.3 ounces silver per ton, 0.50 percent copper, 1.2 percent lead, and 3.3 percent zinc. The number of samples taken, their individual location and assay value was not given in his report. Libbey does say that:

> " Sections which showed distinct mineralization and appeared to be ore were mainly sampled. Approximately fifty percent of the lateral development footage shows distinct mineralization and has been sampled as ore. Owing to the fact that various ore areas outlined on the levels have not been connected up directly with raises or winzes, the actual thickness of the ore areas, which govern the actual amount of ore contained in the blocks, is more or less problematical. In the vein areas certain sections show sampling values sufficient to suggest the possibility of developing and mining these sections separately."

Thus, in the calculations of both Sarle and Libbey they only considered the better mineralized portions of the deposit, which in order to maintain the average grade indicated would have to be mined selectively. Judging from the sporadic localization of the ore minerals in this deposit and in others of the same type, it seems doubtful that the higher grade areas would be persistent enough to permit of an appreciable tonnage being mined in that manner. It appears to the writer that if the deposit was to be

mined it would have to be taken largely en masse, not only for the reason given above, but also to permit the use of a cheaper mining method. In case it was found impossible to selectively mine the higher grade portions of the deposit, then in the absence of any information as to the metal content, if any, of the lesser mineralized areas, the average value of the deposit as a whole remains unknown. In the event the lesser mineralized areas surrounding the higher grade mineralization had no appreciable value, then according to Libbey, the entire deposit would only contain about one-half the value he assigns to the 260,000 tons, which would be far below an economic grade.

PRESENT STATUS

The exploration and development openings on the properties discussed in this report are shown on the attached maps.

There are no buildings or any other equipment left upon any of the claims with the exception of the Tit-for-Tat. There the applicant has recently equipped the mine with a 215 c.f.m. portable air compressor, a 10 H.P. gasoline hoist and the other necessary small tools.

The water inflow at the Tit-for-Tat is about 5 gallons per minute. Nothing is known of the amount of water encountered in other properties.

PROJECT PROPOSALS

Tit-for-Tat, Bobbie, and Bonanza Veins

The Tucson Mining Co. has requested three exploration loans of $100,000 each for the Tit-for-Tat, Bobbie, and Bonanza mines. The

exploration work proposed by the applicant is exactly the same for each mine and calls for the following work in each case: the geologic mapping, the drilling of 12 holes either by core or churn to a depth of 800 feet, and the rehabilitation of an old shaft to the 200 foot level, and then crosscutting south for 300 feet. Evidently an error was made by the applicant in setting up these identical proposals for they are separate deposits and the same work preformed on one would not serve the needs of the others.

Drilling as a means of further exploration of the Helmet Peak deposit would be suitable but it would not be for the steep narrow veins of the Tit-for-Tat, Bobbie, and Bonanza, where the small sporadic ore shoots would present a very small target. The proposed rehabilitation of a shaft to the 200 foot level and the driving of a 300 foot crosscut to the south would only apply to the Bobbie No. 1 claim. There an old 400 feet shaft shown on figure 4 is evidently the one referred to in the application. It would probably take more than 500 feet of crosscutting from this shaft to reach the center of the mineralized portion of the Bobby vein. If further exploration were attempted on this claim it would seem more feasible to gain access to the old workings on the vein in order to determine whether or not further work of the proposed nature was justified.

Helmet Peak Proposals

The production loan requested for the Helmet Peak deposit calls for the following expenditures:

One-half mile of electric transmission line and installation of transformers	Cost not given
Mine hoist - sufficient for 1000 ft. depth	$6,000
Mine shop - bldg. 16 by 30 ft.	1,200
Steel sharpener	4,000
Bit sharpener	2,500
Forge & blacksmith tools	1,000
Warehouse & office, combined	1,800
Assay office - bldg. & equipment	6,000
Mill plant - 150 tons daily, constructed	150,000
Total called for in application	$172,500

The applicant's proposals for the exploration and development of the mine are given as follows:

" Unwatering and retimbering of No. 1 shaft to the 250-foot level to a point below the Billing's shaft and raise for a connection. "(Fig. 5)." Develop ore body indicated on attached map for cut and fill mining. Drive 150 level easterly from main shaft for exploration of that area and connect by raises from 250 level for transmission of waste for steps filling."

The applicant gave no estimate of the cost of this rehabilitation, exploration, and development work. No mention is made of the cost of a suitable air compressor, rock drills, slusher hoists, pipe, track, and the many other tools necessary for mining 150 tons daily.

The present-day cost of a new 150-ton selective flotation plant will probably exceed the applicant's estimate by at least 50 percent. Hence the amount of the loan requested would be insufficient to accomplish the proposed purpose.

The mine roads are adequate. Manpower would probably be obtainable due to the proximity of the property to Tucson. An electric power transmission line is within 1½ miles of the mine.

Nothing is known of the local water supply. The San Xavier mine, located about 1½ miles northeast of the Helmet Peak deposit, pumps about one million gallons of water daily from its lower levels. So long as the San Xavier continues pumping, this water might be available for use at the Helmet Peak property.

Production Plan - Helmet Peak

The applicant estimates that four months would be required to place the Helmet Peak mine on a production basis of 150 tons daily. No estimate is given of the time necessary to erect the mill. No mention is made of the amount of metal that may be recovered from the operation.

Mining Methods and Costs - Helmet Peak

The applicant proposes to mine the ore of the Helmet Peak deposit by horizontal cut-and-fill stopes with raises at 100 foot intervals, waste to be spread by scrapers, powered by air slusher hoists. Top slicing might be used on the fringes or irregular contacts at the extremities of the deposit. No estimate is given by the applicant as to the costs of mining by these methods.

At the present time the cost of cut-and-fill mining at an Arizona mine is about $6 a ton, including development.

Milling Methods - Helmet Peak

There are no ore testing data covering the Helmet Peak ores. The concentration of the ore would necessarily be by selective

flotation. If mill recoveries on this very low-grade material were assumed to average 65 percent for each of the valuable metals, the outcome on an ore of the grade estimated by Libbey would be approximately as follows: On material containing 0.01 ounces gold, and 1.3 ounces silver per ton, 0.50 percent copper, 1.2 percent lead, and 3.3 percent zinc, the recovered value at the mill would be about $10.25 a ton. If it were possible to make a lead concentrate assaying about 55 percent lead and containing the bulk of the copper, and a separate zinc concentrate with a grade of 50 percent zinc, then the marketing cost would approach $3 a ton of ore and the realized value would be about $7.25 a ton. With milling costs at say $3 a ton and selective mining at $6 the operation would result in a loss of $2 a ton before royalty and taxes.

As discussed previously in this report, it appears very doubtful that the higher grade portions of the deposit could be mined without serious dilution by the surrounding lower grade material. Thus the deposit as a whole would have a lower metal content than that established by Libbey. Libby's estimate was used in the preceeding calculations.

Due to the apparent size of the mineralized area and its potential tonnage it may be of more interest in the years to come and worthy of further investigation.

MINING METHODS AND COSTS

Tit-for-Tat, Bobbie, and Bonanza Veins

In the Tit-for-Tat, Bobbie, and Bonanza veins, where the average width of the ore is less than 12 inches, the cost of mining will exceed $35 a ton. The development cost per ton will vary from $15 to $25 depending upon the relative amount of ore found for each foot of shaft sinking. The mill net on the recent shipment from the Tit-for-Tat was estimated at $46.40 a ton. Thus, when considering the high cost of exploration, development, and mining of these narrow ore shoots, the operation at this time can only result in a loss. Owing to the general similarity of all the narrow veins in the area to the Tit-for-Tat, it seems reasonable to conclude that the Bobbie and Bonanza also would prove sub-marginal.

MILLING FACILITIES

Two custom flotation mills are available to shippers of the sulfide ores found in the district. The Sahuarita mill of the Eagle-Picher Mining Co. is within a 9 mile radius of the area. The other custom mill is that of the American Smelting and Refining Co., located at Deming, N. Mex. The nearest rail loading point is Sahuarita, Ariz., which is on the Southern Pacific Railroad.

CONCLUSIONS AND RECOMMENDATIONS

The Tit-for-Tat, Bobbie, and Bonanza properties, for which exploration loans are requested, are narrow, shallow-seated veins containing small discontinuous lenses of complex sulpide minerals. Over 100 feet of recent lateral work on the Tit-for-Tat vein found the ore to have an average width of about 6 inches. The ore

produced by this work had a gross recoverable value in gold, silver, lead, zinc, and copper of about $55 a ton. The realized value from custom milling after deducting freight and treatment was $46.40 a ton. There are a few hundred tons of indicated and inferred ore of comparable grade in the Tit-for-Tat. The cost of exploration, development, and mining these short narrow ore shoots will exceed $50 a ton.

Although the underground workings on the Bobbie vein were inaccessible, it is a vein similar to the Tit-for-Tat and presumably the ore occurrence is of the same nature. A few tons of ore left on the dumps by the former operators had a gross recoverable value of about $46 a ton in gold, silver, and lead. Producing this ore would no doubt exceed its value at this time.

The vein on the Bonanza group as exposed in two shallow prospect openings did not appear promising. The fact that it had not been explored more extensively is indicative that it looked value.

Exploration by means of drilling is not suitable for these steeply dipping narrow veins with their small sporadic ore shoots. If further exploration is attempted it should be done by the conventional method of following the ore.

Therefore, it is recommended that the application for exploration loans on the Tit-for-Tat, Bobbie, and Bonanza veins be denied.

The Helmet Peak deposit for which the Tucson Mining Co. has requested a production loan, differs greatly in size from the

other narrow vein deposits of the district. The deposit occurs in rather an extensive zone of brecciated andesite which has been altered and mineralized with pyrite and minor amounts of lead, zinc, and copper minerals. The ore minerals are erratically distributed in various-sized, discontinuous streaks and aggregates. The evident horizontal dimensions of the mineralized area are from 500 to 600 feet long by 150 to 250 feet in width. The andesite in which the deposit occurs is a volcanic flow of unknown thickness.

The mineralized zone was rather extensively explored in the twenties to a depth of 600 feet, but it is not known whether or not the mineralization extended to that depth. There are no records of any production and existing mine maps show no stopes or raises. Practically all the underground workings now are inaccessible. Water stands about 30 feet below the surface. Two engineering reports made when the mine was accessible show that only the scattered higher-grade portions of the deposit were sampled and the value of the mine was based on the assumption that these higher grade areas could be mined selectively. In this type of mineralization it appears doubtful that these better areas would be persistent enough to permit of extensive selective mining. If this is true, then in mining the deposit it would have to be taken largely en masse. There is no reliable information as to what the average grade of the whole deposit might be. One of the reports previously mentioned, made in 1928, estimates that the better mineralized

areas between the 50-and 400-foot levels contained 260,000 tons of ore having an average content of 0.01 ounces gold and 1.3 ounces silver per ton, 0.50 percent copper, 1.2 percent lead, and 3.3 percent zinc. In the absence of any metallurgical data and to gain an idea of the probable value of this ore, it was assumed that if a recovery of 65 percent of the valuable metals was possible, the realized value of this grade of ore, after marketing, would be about $7 a ton. Operating costs employing selective mining were estimated at more than $9 a ton. Thus, it would not be profitable even if selective mining of only the higher grade areas were possible. Although the deposit as a whole might be mined by block caving it is feared that even then it would be below a commercial grade at this time.

Therefore, it is recommended that the request for a production loan on the Helmet Peak deposit be denied.

COPY OF TABULATION OF ASSAYS

Showing

Width Cut 1/

By C. J. Sarle

NOTE: The position of these assays is shown on the accompanying geologic sketch map, of the Helmet Peak Mining and Milling Company.

Number of Assay	% Cu.	% Pb.	% Zn.	Oz. Au.	Oz. Ag.	Width Cut	Gross Value
1	1.05	0.2	1.0	Trace	0.5	6.0 ft.	$ 5.09
2	0.20	1.1	1.4	"	0.5	21.0 "	4.89
3	0.46	1.0	1.6	"	0.6	9.0 "	5.79
4	0.40	1.0	3.2	0.01	1.6	9.0 "	8.80
5	0.66	1.4	2.5	0.02	3.4	5.3 "	10.55
6	0.65	1.4	4.0	0.01	1.8	6.0 "	11.52
7	0.41	1.2	2.3	0.01	1.1	5.7 "	7.55
8	4.05	0.3	1.0	0.01	2.1	14.5 "	14.88
9	1.62	2.0	3.9	0.02	3.8	11.7 "	16.61
10	0.05	tr.	0.7	0.01	0.1	14.2 "	1.43
11	0.61	0.4	1.5	0.01	1.2	4.7 "	5.58
12	2.11	0.2	0.5	tr.	0.8	5.0 "	7.52
13	4.92	0.3	1.8	0.01	2.7	4.5 "	18.87
14	2.75	0.2	1.8	0.01	2.0	12.0 "	12.17
15	0.59	0.2	0.9	0.01	1.1	12.0 "	4.22
16	0.25	0.5	2.0	0.01	1.2	12.0 "	5.48
17	0.15	0.1	2.5	tr.	0.5	12.0 "	4.59
18	0.05	0.1	0.5	0.01	0.2	13.0 "	1.39
19	0.11	0.3	1.8	tr.	0.4	18.5 "	3.74
20	0.32	0.9	4.0	0.01	0.8	26.0 "	9.08

Assays by E. A. Jacobs,
Registered Assayer,
Tucson, Arizona

(Prices based on market quotations for Aug. 25, 1926, E.&M.J.P., Cu. 14.03, Pb. 8.90, Zn. 7.35)

1/ These were evidently horizontal cuts along the sides of the drifts and /or crosscuts.

DEFENSE MATERIALS PROCUREMENT AGENCY
WASHINGTON 25, D. C.

DIRECTOR'S OFFICE REGION IV
DEC 26 1951
BUREAU OF MINES
DENVER, COLORADO

DEC 17 1951

DMA-1722
Tucson Mining Company
Helmet Peak Mine
Pima County, Arizona
Direct loan $172,500
Zinc, Lead

Tucson Mining Company
133 North Stone
Tucson, Arizona

Gentlemen:

Your application for a loan of $172,500 to develop your Helmet Peak Mine, has been reviewed by the Defense Materials Procurement Agency on the basis of a report on your property submitted by the Field Team.

To qualify for a loan such as you requested it is necessary that the property for which the monies are to be used has a sufficient tonnage of proven ore reserves that can be mined with a net return sufficient to amortize the loan. According to the information we have on hand your deposit does not have these qualifications. By considering only the better mineralized parts of the deposit, it would be necessary to mine the deposit selectively, and it appears doubtful that the higher grade areas are persistent enough to obtain an appreciable tonnage. In addition, operating costs based upon selective mining by the cut-and-fill method would be in excess of the value of the ore.

Although the average grade of the entire mineralized body is not known, it appears that the grade of ore that could be mined from the entire deposit would be below economical grade.

Under these conditions we regret that we are not able to justify an expenditure of Government funds for the development of your property.

Very truly yours,

Tom Lyon

Tom Lyon, Director
Program Development Division

GEJOHNSON:pk
12/11/51

cc: Adm. Files Mr. Douglas Mr. G. E. Johnson DMPA Files
Mr. Young Mr. Feiss Mr. Lyon Field Team IV

DEFENSE MATERIALS PROCUREMENT AGENCY
WASHINGTON 25, D. C.

Central Center

December 11, 1951

DIRECTOR'S OFFICE RECEIVED DEC 26 1951 BUREAU OF MINES DENVER, COLORADO

Tom Lyon, Director, Program Development Division

Application for Government loan of Mrs. Ethel Ferguson, P. O. Box 1397, El Paso, Texas, DMA-1147, Commodity-Copper

It is recommended that this application be denied since a search of the records by the Bureau of Mines' examining engineer raised some serious doubts as to ownership of the mineral rights.

A letter has been prepared notifying the applicant of this denial and suggesting that she apply for exploration aid, should clear title be established or if she is able to get together with the legal owners to work out a proposal.

Transmitted herewith for your disposal is the complete file consisting of:

1 NSMB-146
1 Report on Ferguson Copper Mine
1 War Minerals Report
1 Sheet listing claims
1 Location Map (7 copies)
1 Claim Map
1 Clipping
1 Field Team Report on Last Chance & Ebeling Copper Claims and cover letter
1 Brief Synopsis of the Ferguson Copper Mine
1 Sheet written by Mrs. Ferguson
L. F. Strobel, May 11, 1951
Tom Lyon, June 4, 1951 (2 copies)
1 Letter to Dr. J. Boyd, from Mrs. E. Ferguson, April 28, 1951 (2 copies)
1 Letter to Mr. East, from Tom Lyon, June 4, 1951 (2 copies)

Tom Lyon, Director
Program Development Division

Attachment

RVWaugh:ez
12/11/51
cc: Mr. Young
Mr. Feiss
Mr. Douglas

Region IV Lyon, Gowen, DMPA-Files

J. H. East, Jr. Region IV

350

REGIONAL DIRECTOR'S
OFFICE
REGION IV
DEC 26 1951
BUREAU OF MINES
DENVER, COLORADO

DEC 17 1951

Memorandum

Control Center

To: ~~Reports and Records Unit~~
~~Administrative Management Div.~~

Re: Docket DLA-1722
Tucson Mining Company
Helmet Peak Mine
Pima County, Arizona
Direct loan, $172,500
Zinc, lead

From: Chief, Lead-Zinc Branch

Subject: Recommendation for denial of application submitted by the Tucson Mining Company for a direct loan to apply to the Helmet Peak mine, Pima County, Arizona.

Included in the original application were requests for a direct loan on the Helmet Peak mine and three exploration loans on the Tit-for-Tat, Bobby, and Bonanza claims. The exploration loans are discussed in a separate memorandum to the Reports and Records Unit. All four applications were given the same docket number.

The four properties have been examined and reported on in a single report by the field team.

The applicant proposed the following program for the Helmet Peak mine:

"Unwatering and retimbering of No. 1 shaft to the 250 ft. level to a point below the Billing's shaft and raise for a connection. Develop ore body indicated on attached map for cut and fill mining. Drive 150 level easterly from main shaft for exploration of that area and connect by raises from 250 level for transmission of waste for stope filling."

Total estimated cost is $172,500.

The Helmet Peak mine is a disseminated deposit occurring in an extensive zone of shattered andesite, the mineralized area being 500 ft. or more in length and 150 to 250 ft. wide. Throughout this area iron, zinc, lead, and copper sulfides are erratically distributed as discontinuous streaks and aggregates.

Although the property has been rather extensively explored, information concerning the results is meager and the workings are inaccessible at present. Two reports made when the mine was open are available.

A report by C. J. Sarle states that 100,000 tons of ore averaging 0.01 oz. Au, 1.67 oz. Ag, 1.50% Cu, 0.9% Pb, and 2.0% Zn are available. J. M. Libbey estimates that the deposit contains 260,000 tons of inferred ore averaging 0.01 oz. Au, 1.3 oz. Ag, 0.50% Cu, 1.2% Pb, and 3.3% Zn.

In both of these reports only the better mineralized parts of the deposit are considered and in order to maintain the estimated grade, it would be necessary to mine the deposit selectively. However, because of the erratic distribution of the mineralization, it appears doubtful whether the higher grade areas are persistent enough to obtain an appreciable tonnage. Furthermore, the value of ore of the above grade at the present time is about $7.00 per ton, while operating costs based upon selective mining by the cut and fill method would exceed $9.00 per ton.

Although the average grade of the entire mineralized body is not known, the report by Libbey states that the higher grade areas may constitute only one-half of the entire body and thus, if the entire deposit were mined, the ore would be below economical grade.

The field team, therefore, recommends that the application for a direct loan be denied. The Lead-Zinc Branch concurs with this recommendation.

Returned herewith are:

3 copies Form MF-101 with supporting data.
2 copies Form MF-100 " " "
1 copy of tabulation of assays.
1 copy of Certificate of Limited Partnership.
2 copies of letter to applicant from Tom Lyon.
1 copy of field team report with 7 sets of maps.

Approved:

Tom Lyon

T. P. Billings, Chief
Lead-Zinc Branch

~~Director, Supply Division~~
Program Development Division

EJLyons:emp
G 10-1-51

Directors r. files 4214 GSA
Br. r. files 4214 GSA
Administrators r. file
DMA docket files

Copies to: Defense Production Administration
J. H. East, Jr. Region IV (2)
Chief, Lead-Zinc Branch
E. T. McKnight 4204 GSA
O. M. Bishop

J. H. East, Jr. Region IV

350

DMA

OFFICE
REGION IV
1951
BUREAU OF MINES

OCT 4 1951

Memorandum

To: Reports and Records Unit
Administrative Management Div.

From: Chief, Lead-Zinc Branch

Ref: D[illegible]-1722
Tucson Mining Company
Tit-for-Tat, Bobby, and
Bonanza claims,
Pima County, Arizona
Lead-zinc-silver-copper
Exploration loan, $300,000

Subject: Recommendation for denial of application submitted by the Tucson Mining Company, to explore the Tit-for-Tat, Bobby, and Bonanza claims, Pima County, Arizona.

The original application was submitted for exploration loans on the three subject properties and also for a direct loan on the Helmet Peak mine. The present memorandum applies only to the request for exploration loans. A separate memorandum discusses the request for a direct loan on the Helmet Peak mine. The four applications were given the same docket number.

All four properties have been examined and discussed in a single report by the field team.

The applicant requested an exploration loan of $100,000 for each of the three separate properties, the Tit-for-Tat, Bobby, and Bonanza. The work proposed for each prospect was exactly the same and consisted of the following:

Geologic mapping
Twelve drill holes, either core or churn, to a depth of [illegible]00 ft.
Rehabilitation of shaft to the 200 ft. level.
Driving a 300 ft. crosscut to explore a vein structure.

The applicant evidently erred in setting up the projects because the properties are separate and work suitable for one would not apply to the others.

All of the deposits are veins in brecciated fractures in volcanic rocks. The ore occurs as narrow, discontinuous streaks and lenses with an average width of less than 12 inches. In the Tit-for-Tat vein there are a few hundred tons of indicated and inferred ore containing about 20 oz. Ag, 23% combined zinc and lead, and 1.6% Cu. Net value of this ore, after marketing, would be about

$46 per ton, but the production cost probably would exceed $50 per ton.

The workings on the Bobby vein are inaccessible, but its similarity to the Tit-for-Tat suggest that the ore is submarginal.

No extensive work has been done on the Bonanza prospect but its narrow vein is not promising.

The examining engineer does not believe that further exploration work would disclose any significant amount of base metal ores and recommends that the application be denied. The Lead-Zinc Branch concurs with this recommendation.

The following material is attached:

3 copies Form MF-103 applying to the Tit-for-Tat property with 1 copy of report by R. J. Leonard.
3 copies of Form MF-103 applying to the Bobby group with 1 copy of report by R. J. Leonard.
3 copies of Form MF-103 applying to Bonanza and Bobby group with 1 copy of report by R. J. Leonard.
1 copy of report by J. C. Anderson on Swastika group of mines.
1 copy of transmittal letter to field team.
1 telegram, dated June 25, to Otto Herres from H.R. Freeman.
3 copies of claims map of Bobby group.

T. P. Billings, Chief
Lead-Zinc Branch

Approved:

Tom Lyon
Director, Supply Division

EJLyons:emp
G 10-1-51
Copies to: J. H. East, Jr. Region IV (2)
Chief, Lead-Zinc Branch
E. T. McKnight 4204 GSA
O. M. Bishop
Directors r. files 4214 GSA
Br. r. files 4214 GSA
Administrators r. file
DMA docket files

OCT 5 1951

Re: Docket DMA-1722

REGIONAL DIRECTOR'S
OFFICE
REGION IV
OCT 10 1951
BUREAU OF MINES
DENVER, COLORADO

Tucson Mining Company
133 W. Stone Avenue
Tucson, Arizona

Gentlemen:

Your application for a direct loan to bring into production the Helmet Peak mine in Pima County, Arizona, has been referred to the Defense Production Administration and the Reconstruction Finance Corporation for their review and consideration.

Your request for financial aid to explore the Tit-for-Tat, Bobby, and Bonanza groups of claims has been reviewed by the Defense Mineral Administration on the basis of a report submitted by the field team after examination of the properties. Study of this report indicates that there is little possibility of obtaining significant tonnages of ore of minable grade by further exploration. In view of this, we are unable to justify expenditure of public funds for this project. I regret, therefore, that your application must be denied.

We wish to thank you for bringing these properties to our attention.

Very truly yours,

ABP Tom Lyon

for Tom Lyon, Director
Supply Division

EJLyons:emp
G 10-1-51

Copies to: J. H. East, Jr. Region IV (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
O. M. Bishop
Directors r. files 4214 GSA
Br. r. files 4214 GSA
Administrators f. files
DMA docket files

Mining Division
Region IV

September 19, 1951

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 1722-I, Tuscan Mining Co., applicant, Tit-for-Tat, Bobby, Bonanza, and Helmet Peak Zinc-Lead Mines, Zinc Mining District, Inyo County, California

Ten applications with the subject docket were for three exploration leases of $100,000 each on the Tit-for-Tat, Bobby and Bonanza Claims and for a production lease of $172,500 on the Helmet Peak Mine.

Mineralization at the Tit-for-Tat, Bobbie and Bonanza claims consists of small discontinuous lenses of complex sulphide minerals in narrow, shallow-seated veins.

At the Helmet Peak Mine, an extensive zone of brecciated andesite has been altered and mineralized with pyrite and minor amounts of lead zinc and copper minerals. This has been developed to a depth of 600 feet, but there are not any records of production. In December, 1948, J. M. Libbey reported reserves, largely inferred, of 260,000 tons containing 0.50 percent copper, 1.2 percent lead and 3.3 percent zinc.

In view of the small size of the veins at the exploration project and the low grade of the ore at the development project, the examining engineer recommends denial of all the applications.

I concur with this recommendation of denial.

Paul T. Allen

WDM:oj
cc: DMA Subject
Chronological

224 New Customhouse
Denver 2, Colorado

Air Mail

September 19, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 1722-I, Tucson Mining Co., applicant, Tit-for-Tat, Bobby, Bonanza and Helmet Peak Zinc-Lead Mine, Pima Mining District, Pima County, Arizona

Enclosed herewith are the original and two copies of the report on the subject docket.

We concur with the conclusions and recommendations of the examining team that the exploration loans of $300,000 and the development loan of $172,500 be denied.

The brochure is enclosed.

for Paul Wallman
J. H. Vest, Jr.

A. H. Koschmann
A. H. Koschmann

Enclosures

WDM:oj
cc: DMA Subject
Chronological

Mining Division
Date Rec'd.

SEP 7 1951

BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

September 5, 1951

Re: DMA Docket 1722X
Pima County, Ariz.

Registered

Mr. Warren Hassler
c/o Ziff, Larkin and Donahue
133 N. Stone Ave.
Tucson, Arizona.

My dear Mr. Hassler:

We are returning herewith all the reports and other data that your representative, Mr. Sam Coldren, so kindly let our Mr. L. L. Farnham have during the field investigation of your mining properties.

Sincerely yours,

Walter R. Storms, Chief
Arizona-New Mexico Branch

CC P. T. Allsman
C. A. Anderson
DMA-1722X
DF

L.L.Farnham:frj

Mining Division
Date Rec'd.
AUG 13 1951
BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

August 9, 1951
Re: DMA Docket
1722X

Mr. Sam Coldren
Tucson Mining Co.
133 N. Stone Ave.,
Tucson, Arizona

Dear Sam:

We now have your applications for exploration loans on the Tit-for-Tat, Bonanza, and Bobby properties, and your application for a production loan on the Helmet Peak mine.

We expect to have an engineer available next week to examine your properties, so will you please get in touch with me?

With best personal regards, I am

Sincerely yours,

Walter R. Storms, Chief
Arizona-New Mexico Br.

CC P.T. Allsman
Anderson
DMA 1722X
DF

WRStorms:als

FWO

July 25, 1951

Memorandum

To: W. R. Storms (with brochure)

(Through Chief, Mining Division)

Charles Anderson

From: DMR Field Team, Region IV

Subject: DMR Docket 1722-N, Tuscon Mining Company, Pit-Cap-Zat, Bonanza and Bobby Exploration Projects, Helvetia Peak Production Loan, Pima Mining District, Pima County, Ariz.

Enclosed herewith are the above zinc-lead-copper exploration and development requests.

Although all of these are given only one docket number, they will probably have to be separated into three exploration projects and one direct loan. The Coordinating Committee suggests that a geologic appraisal be made of the reserve possibilities of the Helvetia Peak property and the geologic possibility of finding ore on the proposed exploration projects.

If a review of the available information at Tucson indicates favorable action, the examination should be done jointly by the Geological Survey and the Bureau of Mines so as to have the engineering phases.

J. H. Eastman

J. H. East, Jr.

A. H. Koschmann

A. H. Koschmann

Enclosures
1A
cc: DMR, Koschmann

JUL 7 1958

DMA-1722X
Tucson Mining Co.
Lead-zinc-copper
Exploration loan

Mr. J. H. East, Jr.
Executive Officer, DMA Field Team
Region IV
224 New Customhouse
Denver 2, Colorado

Dear Mr. East:

Enclosed are 4 applications submitted by the Tucson Mining Company which are being referred to the field for further information and advice. There are 3 exploration loan requests each for $100,000 on the Bonanza Group, Bobby Group and Tit-for-Tat Claim.

The work that the applicant proposes to do on each of these claims is exactly the same, namely, to complete a geologic mapping job, to drill 12 holes each to a depth of 800 feet and to retimber the vertical shaft to the 200 ft. level and crosscut south for 300 feet. It is not evident from the application whether this represents 3 separate jobs or the same job that will serve all 3 claims.

There is also included in this application a request for a straight loan for an unstated amount, although probably in excess of $200,000, to develop the ore on the Helmet Peak Mines Group. The applicant states that there are 100,000 tons of proven ore on this property, but the evidence of this is not convincing from the material submitted with the application. The ore is said to be in the brecciated andesite and its assay is given in dollars instead of metal percentages. The reported reserves date from a geologic examination made in 1926.

We do not have enough information in Washington to judge these various applications which are all included under the one docket number. The Helmet Peak Mine is briefly described by Eldred Wilson in the volume on Arizona zinc and lead deposits, published in 1950. He points out that a more detailed report is a University of Arizona thesis by M. N. Mayuga, which is presumably available to the field team for study. The other claims that the applicant proposes to explore are in the same section, township, and range, as the Helmet Peak Mine, so presumably the Mayuga report will cover them also.

These various applications will probably have to be separated into at least 2, one covering the direct loan on the Helmet Peak Mine and the other covering exploration on the other prospects. The field

team should make a geologic appraisal of the ore reserve possibilities of the Helmet Peak Mine and of the geologic possibilities of finding new ore on the prospects proposed for exploration. If these geologic appraisals are favorable, then the engineering phases of the 2 proposals can be considered.

There is enclosed in this docket material, a geologic report on the Swastika copper and silver mining property. We can find no evidence that any Federal assistance is requested on this property and assume that the report is presented to give geologic information on land closely adjacent to that being developed by the applicant.

Very truly yours,

Tom Lyon, Chairman
Coordinating Committee

Approved:

_____
For Bureau of Mines

_____
For Geological Survey

ETMcKNIGHT:emp
G 7/17/51
Copies to: Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
R. H. Mote
Records and Reports Unit
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files