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

Room 24 New Customhouse
Denver 2, Colorado

June 19, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration
Attention: Code 210

From: Field Team, Region IV

Subject: Final Report, DMA Docket 18191 (Zinc) Joe E. Moffett's Mid Day Zinc Deposits, Otero County, New Mexico

Enclosed are four copies of the final report on DMA 18191.

At the request of the applicant, the application was withdrawn.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Mining Division
Region IV

October 25, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 1819-X, Joe E. Moffett, applicant, Mid Bay Mine Deposits, Silver Hill (Cooperstown) Mining District, Otero County, New Mexico

The application of the subject docket was for an exploration loan of an unspecified amount.

The ore exposed on the claims consists of sphalerite, partially oxidized to smithsonite, as a replacement in highly gneissized and metamorphosed limestone. The major part of this limestone has been removed by erosion, which has uncovered the monzonite intrusive.

There are not any measurable reserves, and indicated reserves are only 41 tons of 22%. There are little data for estimating inferred reserves, but these may amount to 6,000 tons of 20 percent zinc ore.

The applicant did not submit details as to the proposed project, but the examining engineer suggests two drifts of 30 feet each on the present showing of ore, and recommends approval of a loan of $2,500.

The applicant has sufficient resources to supply his part of the cost of the project.

We concur with the recommendation of the examining engineer, with the provision that one of the miners should be competent to supervise the operation.

An exploration project contract is being processed.

Paul T. Allaman

Reviewed by
DMEA OPERATING COMMITTEE

6-27-52

Mining Division
Date Rec'd.

OCT 22 1951

BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

October 18, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

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

Subject : Final Report, DMA Docket 1819X, Joe S. Moffett's Bid Day Zinc Deposits, Silver Hill (Orogrande) Mining District, Otero County, N. Mex.

Enclosed are original and 7 copies of the above report by J. H. Soule' of the Bureau of Mines. No separate geological report will be submitted by the Geological Survey.

Although the author of this report states that the possibilities of finding much zinc ore seem remote, he has recommended that a total loan for $2,500 be made.

The report has my approval.

Brochure is enclosed.

Walter A. Storms

cc F. T. Allsman (7)
C. A. Anderson
DMA-1819X
DF

WAStorms:frj

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-1819X, Joe E. Moffett's Mid Day Zinc Deposits

Silver Hill (Orogrande) Mining District

Otero County, N. Mex.

John H. Soule', Mining Engineer

U. S. Bureau of Mines

October 1951

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By John H. Soule [1]

The Mid Day claim of the patented Alabama group in the Silver Hill (Orogrande) Mining District, Otero County, N. Mex., is owned by Joe E. Moffett of Alamogordo, N. Mex. Moffett applied to the Defense Minerals Administration in June 1951 for an exploration loan on the property. The application, Docket DMA-1819X, was sent to the field for an inspection. This examination was made by the writer on September 12, 1951.

Very little ore has been produced from this group of claims and on only one, the Mid Day, was any appreciable base metal mineralization noted. Appreciable zinc with a small amount of copper and lead were noted in two small exposures near the southeasterly limits of the Mid Day claim.

The zinc minerals occur as replacements in limestones which have been highly garnetized and marbelized. The limestone occurs as remnants after erosion has removed the bulk of this formation and has exposed the monzonite intrusive that lies beneath it.

Although the possibilities of discovering large ore bodies on the Mid Day claim are remote, the presence of zinc minerals in two places seems to indicate that a small amount of exploratory work would be worthwhile. This work should consist of drifting

[1] Mining Engineer, Bureau of Mines

on the known ore exposures. From the results of this project additional exploratory work in the area, especially to the southeast in the limestone flanks on the intrusive, might be suggested.

The program was planned by the examining engineer from data contained in the applicant's proposal and from data obtained from an examination of the property. The suggested project will cost about $2,500 and should be completed in one month. The applicant and the Government would share equally the costs of exploration.

It must be considered that while the success of the project is improbable, it may be possible to discover sufficient ore to repay the loan and to result in geological evidence that may indicate better ore deposits in the area. Under these conditions, the project is recommended.

JOE B. MOFFETT'S MID DAY ZINC DEPOSIT
SILVER HILL (ORO GRANDE) MINING DISTRICT
OTERO COUNTY, NEW MEXICO
DMA-1819X

Engineering Report

By John M. Soule
Mining Engineer
Bureau of Mines

October 1951

JOE A. MOFFETT'S MID BAY ZINC DEPOSITS
SILVER HILL (OROGRANDE) MINING DISTRICT
OTERO COUNTY, NEW MEXICO
DMA-1819X

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INTRODUCTION

In June 1951, Joe E. Moffett of Alamogordo, N. Mex. applied to the Defense Minerals Administration for an exploration loan under the Defense Production Act of 1950. It was intended to explore the Mid Day claim of the Alabama Group which Moffett owns and which is located in the Silver Hill (Orogrande) Mining District, Otero County, N. Mex. The application, Docket DMA-1819X, was sent to the field for an examination of the property to supply some data that was either missing or was not clear.

The district has had an appreciable past production of iron, copper, precious metals and turquoise. Other than turquoise, little production has been made from the Alabama group, although sampling has disclosed the presence of zinc minerals.

ACKNOWLEDGMENTS

Acknowledgment is made of the assistance rendered by Joe E. Moffett, who showed the examining engineer over the property.

LOCATION, TOPOGRAPHY AND CLIMATE

The Mid Day lode claim is one of 5 patented claims in the Alabama Group. This group is located in sec. 10, T. 22 S., R. 8 E., in the Silver Hill (Orogrande) Mining District, Otero County, N. Mex., (see figures 1 and 2).

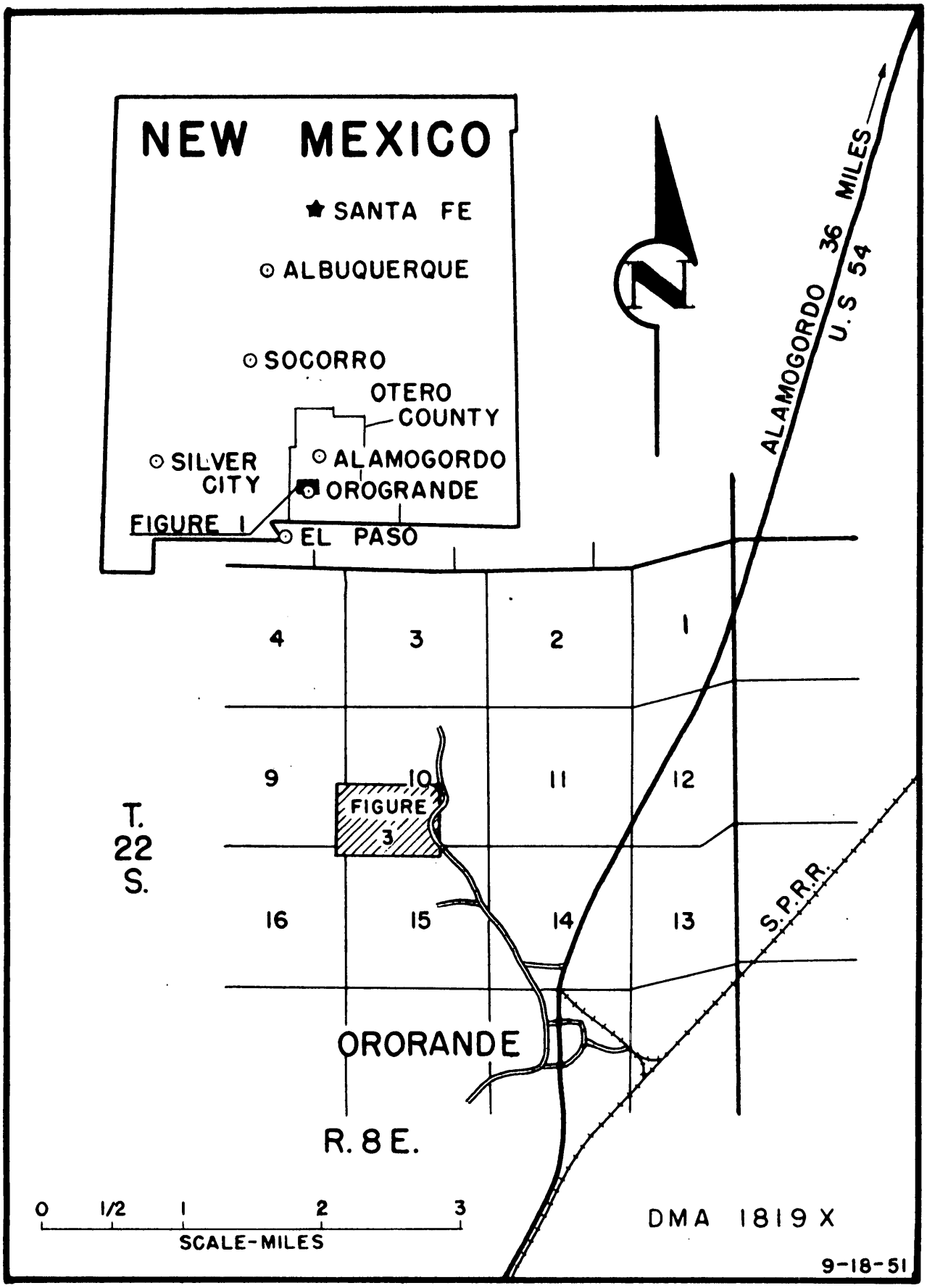

FIGURE 1-LOCATION MAP, ALABAMA GROUP (MID DAY LODE), OTERO COUNTY, N. MEX.

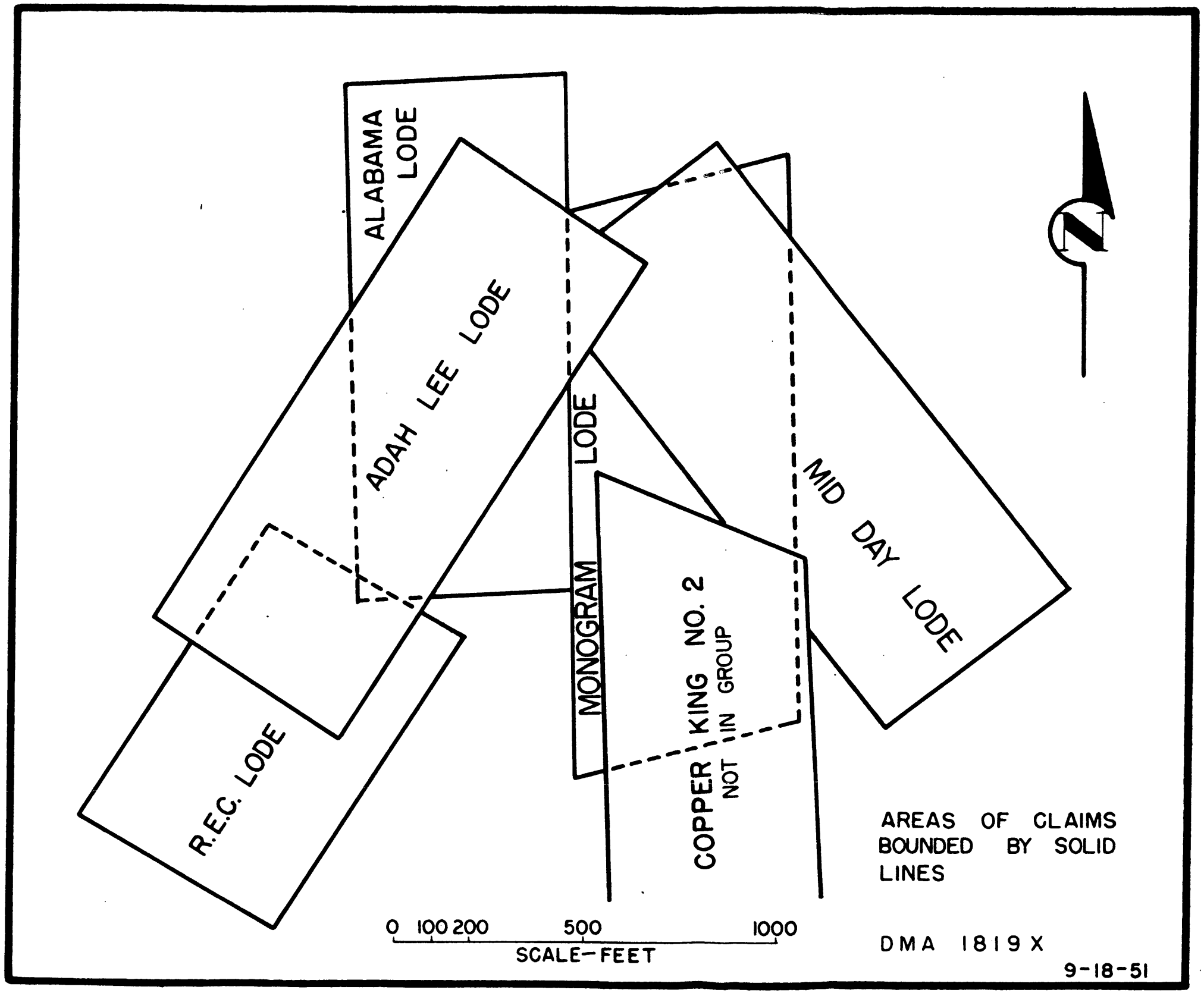

FIGURE 2.-CLAIM MAP, ALABAMA GROUP (MID DAY LODE), SURVEY NO. 1089

The mine is reached by traveling the well-graveled road northwest from Orogrande past a borrow pit and up the canyon for a distance of 1½ miles. A range fence is encountered across this road at this point. The property lies just north of the fence and west of the main creek (see figures 1 and 3).

The small town of Orogrande is 36 miles south and a little west of Alamogordo, N. Mex., and 50 miles north and a little east of El Paso, Texas. El Paso would be the source of mining supplies and equipment. A railroad loading-ramp is located ½ mile southeast of Orogrande and about 2 miles from the property.

The property is situated in the southeastern part of the Jarilla Hills, a small desert range of mountains about 10 miles long in a north-south direction and nearly 5 miles wide. The hills are completely flanked by alluvium and rise about 700 feet above the valley floor. The mean altitude of the property is about 4,500 feet. The highest point rises to an altitude of 4,851 feet. The slopes are steep in places but the topography is generally not rugged (see figure 3).

There are no permanent streams in the area, so water must be imported. The Southern Pacific railway has a reservoir near the property, the water being brought from the Sacramento Mountains to the east by pipe line. The pipe line is reported to be 26 miles in length. There are no data on the depth of the water in the area of the claims.

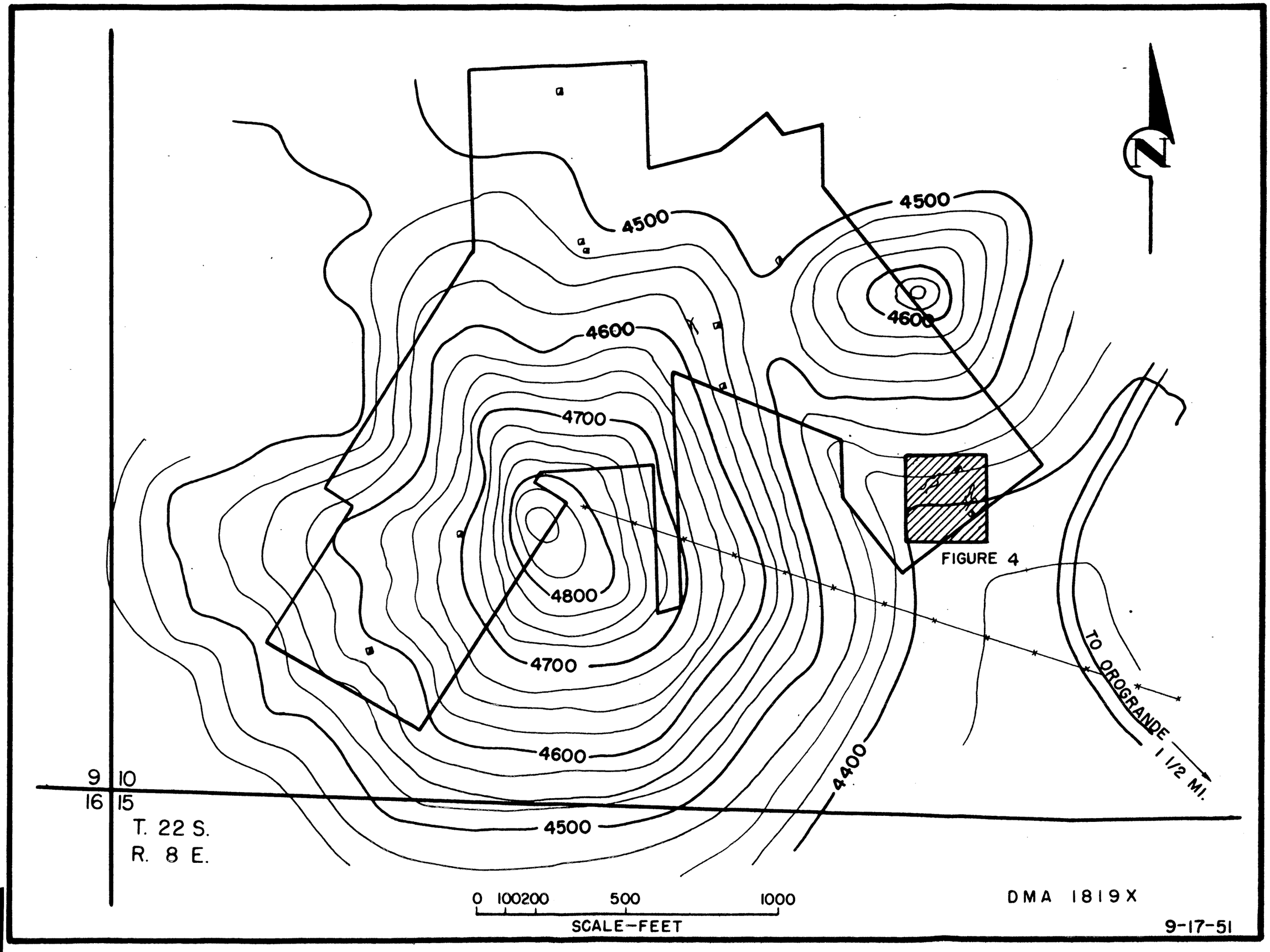

FIGURE 3.-TOPOGRAPHIC SKETCH AND ALABAMA GROUP CLAIM OUTLINE (MID DAY LODE ON EAST)

The average yearly precipitation is estimated to be about 10 inches. Summers are hot. Cold winter weather is neither severe nor prolonged.

Usual desert flora exist. There is no timber suitable for mining purposes.

HISTORY AND PRODUCTION

Although the Orogrande district has been known and prospected since 1879, the first attempts to conduct mining operations occurred about 1900. Precious and base metals were sought, as well as some turquoise. In 1907, a matting furnace was installed which operated intermittently for 2 years and treated copper ores. Base metal production since that time has been sporadic and small. In 1916, there was considerable activity in the iron mines. These were operated until 1921 when the increasing sulfur content and the decreasing iron content of the ores made them undesirable.

The approximate production of metals from the Orogrande area is shown in the following table:

Metal	Amount
Gold	$300,000
Silver	50,000 oz.
Copper	6,500,000 lbs.
Lead	1,400,000 lbs.
Iron	230,000 tons

The total value of these ores was approximately $2,800,000. A little tungsten was reportedly produced from the district, as well as an unknown amount of turquoise.

From the small mine workings on the Alabama group of claims, there has been very little production of base metal or iron ores. Any small production seems to have been derived from the Mid Day claim, the most easterly of the group, as shown in figure 2. A considerable part of the district production of turquoise may have been obtained from this group of claims.

OWNERSHIP AND EXTENT

The Alabama group of claims consists of 5 patented lode claims. This group, Survey 1089, was patented in 1903 and consists of the following claims: Mid Day Lode, Alabama Lode, Adah Lee Lode, A. E. C. Lode, and the Monogram Lode. The claims are shown in figure 2. There is considerable overlap of the various claims so the area of the group is but 58.159 acres.

The claims are owned by Joe E. Moffett of Alamogordo, N. Mex. Moffett has paid the taxes for at least the last 4 years, as noted from the tax receipts.

DESCRIPTION OF THE DEPOSITS

The Alabama group of claims is located in the southeastern part of the Jarilla Hills. These hills once consisted of sedimentary rocks of probable Pennsylvanian age that were domed and intruded by an irregular stock of monzonite and some minor intrusives. Subsequent erosion has removed most of these sedimentary rocks leaving only small patches of limestone within the hills. This formation becomes thick on the flanks where it dips away from the hills and into the valley floor.

Two small remnant patches of limestone are present on the Alabama group, as well as a tongue of the flanks which just enters the southeastern part of the group. This tongue is the limestone shown in figures 4 and 5. The patches are obviously shallow and can contain no sizable ore bodies, so consequently are of little interest. The tongue is more extensive than the patches and may contain ore bodies, especially down dip to the southeast and probably beyond the claim boundary. This is indicated in section in figure 5.

The sedimentary rocks consist principally of limestones with some interbedded shale. Near the contact with the intrusive, alteration is intense with the formation of magnetite, garnet, and other silicate rocks. Some marbelization was noted. Sphalerite was noted in 2 short adits on the Mid Day claim. The exposures are shown in figure 4 and the assay results are listed as follows:

Assay Results

Sample No.	Length, ft.	Percent Cu	Pb	Total Zn	Oxide Zn
1	3.0	1.00	0.15	14.95	4.40
2	1.7	0.20	0.10	38.50	——

The sphalerite occurs as a replacement of a limestone bed in Sample No. 2 and is wholly unoxidized. In Sample No. 1 the zinc is partially oxidized and occurs near a fracture in the metamorphosied limestones.

ORE RESERVES

There are practically no measured ore reserves on the property. Indicated reserves are small and are tabulated as follows:

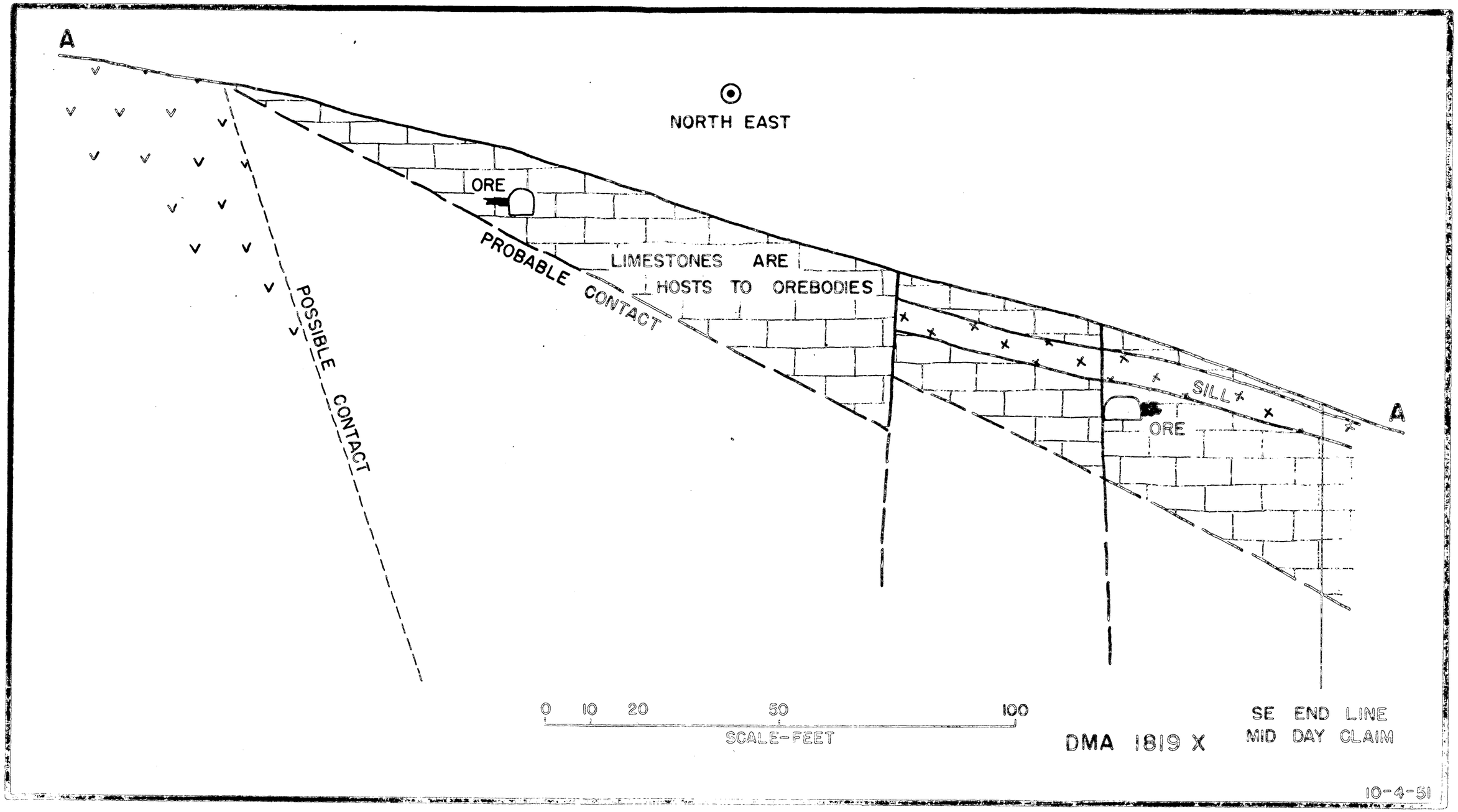

FIGURE 5.—SKETCH SECTION A—A, MID DAY LODE

Sample No.	Tons	Sulfide Zinc Percent
1	24	10.55
2	17	38.50

There are very little data available to compute inferred reserves, but assuming that one limestone bed was replaced over the lateral extent of the sedimentary outcrop, shown in figure 4, and that mineralization is 3 feet thick, an expectable inferred reserve would be on the order of 6,000 tons of zinc ore. As there is a probable maximum of 44,000 tons of altered sedimentary rocks within the claim boundaries and as surface and subsurface indications show a very small percentage of this rock to contain zinc mineralization, the 6,000 tons of inferred ore may be considered the maximum quantity of ore that could exist within these boundaries.

PRESENT STATUS

The property is idle at the present time and has been idle for many years. There are no extensive workings, only shallow adits, shafts, and pits. Two of the most important adits were recently cleaned out for inspection and sampling. These are shown in figure 4.

There is no equipment of any kind on the property.

PROPOSED EXPLORATION

Practically no details of the proposed exploration were given in the application for Government assistance. Conversations with the owner disclosed that he had very little idea of what was to be done.

In view of the fact that zinc mineralization does occur, it may prove advantageous to perform a small amount of exploratory work on the Mid Bay claim. While it is known that no extensive zinc ore deposits can occur on this claim, small lenses of fairly high-grade ore may occur. The exploration of these may give valuable clues to the existence of larger ore bodies outside of the claim limits to the southeast.

The following program is suggested as the quickest and cheapest method of exploring the deposits. It is based on the fundamental idea of following the ore. Two short drifts of about 30 feet in length driven from points inside the adits should suffice. One should be driven from the point marked Sample No. 1 on figure 4. This drift should be driven easterly to start and then follow in the direction of mineralization. The second tunnel would start northerly from Sample No. 2 and follow the ore. It would be better, perhaps, to start and concentrate on the Sample No. 2 location as it is here that high grade mineralization occurs.

Including the time necessary to prepare for the tunnel work, this program should be completed in one month. Subsequent work can be planned from the results obtained in this preliminary exploration.

ESTIMATED COSTS

As the project has a short life, all major items of equipment should be obtained on a rental basis with the rental applied to purchase if subsequent events warrant. The major items are listed as follows with 10 percent of the new price estimated as rental:

Compressor, 165 cfm	$390
Tugger hoist, with 200 ft. of cable	75
Rock drill, hoses and pressure tank	75
Mine car	20
	$560

As the original adits shown in figure 4 are in part inclined, the small hoist is necessary to pull the cars out of the underground workings.

Other necessary materials may not be rentable but may be obtained in a used condition. However, the following tabulation is estimated on the basis of new costs:

Drill steel and bits	$75
300 feet of track, 12 lb. rail	200
300 feet of 1½-in. pipe and fittings	80
Small tools, shovels, lamps and extras	200
	$555

The following supplies and services will be necessary:

Explosives	$80
Gasoline and oil	160
Freight on supplies	140
Water and supply haulage	50
Carbide and other small items	50
Tent for laborers	65
Analyses	30
	$575

The application states the need of 3 men (2 miners and a mucker) to be paid $6.00 per day. It is doubtful if qualified miners can be obtained at this rate. Ten dollars per day would be a better rate.

The following wage table is based on this increased wage:

3 men at $10.00 per day for 27 days ---------- $810

The costs are recapitualted as follows:

Equipment rental	$560
Pipe, track and tools	555
Supplies	575
Labor	810
	$2,500

PROPOSED FINANCING

Mr. Moffett, owner of the Alabama group of claims, states that he has sufficient resources to cover his share of a small exploration project. Under the Defense Production Act, the costs of a project as outlined would be equally shared by the applicant and the Government.

CONCLUSIONS

Although the potentialities of finding sizable zinc ore bodies on the Mid Bay claim of the Alabama group are very small, some exploratory work seems justified to determine the extent of 2 known unexplored areas where zinc mineralization is known to exist. A small amount of drifting, starting on the known areas of mineralization and following this mineralization, appears to be the simplest way of exploring the possible deposits. This work may give geologic information of value to the district in locating other ore bodies.

RECOMMENDATIONS

It is recommended that a small exploration project, costing $2,500, be approved, with the Government and the applicant sharing the costs on an equal basis. The phases of the recommended project are recapitulated as follows.

1. The work will consist of driving 2 short drifts, each following the mineralized zone. One will start at a point marked Sample Nr. 1 in figure 4 and the other will start at the point marked Sample No. 2 of the same figure.

2. As the project will last but a short time, no facilities are necessary other than a tent to house the laborers during the period of the project, about one month. A tent would cost about $65.

3. There is no equipment on the property and a complete mine plant must be obtained. All of the major items should be acquired on a rental basis with option to purchase if the results obtained by the preliminary project warrants purchase of the equipment.

4. Only 3 men will be required for this project. The applicant states that these are available. The supervision will be done by the applicant at no cost to the project.

5. Very little rehabilitation will be necessary other than laying track and pipe to the various working places. A small amount of road work is necessary to reach the property. The few hundred feet of road can be made passable in less than 3 man-shifts.

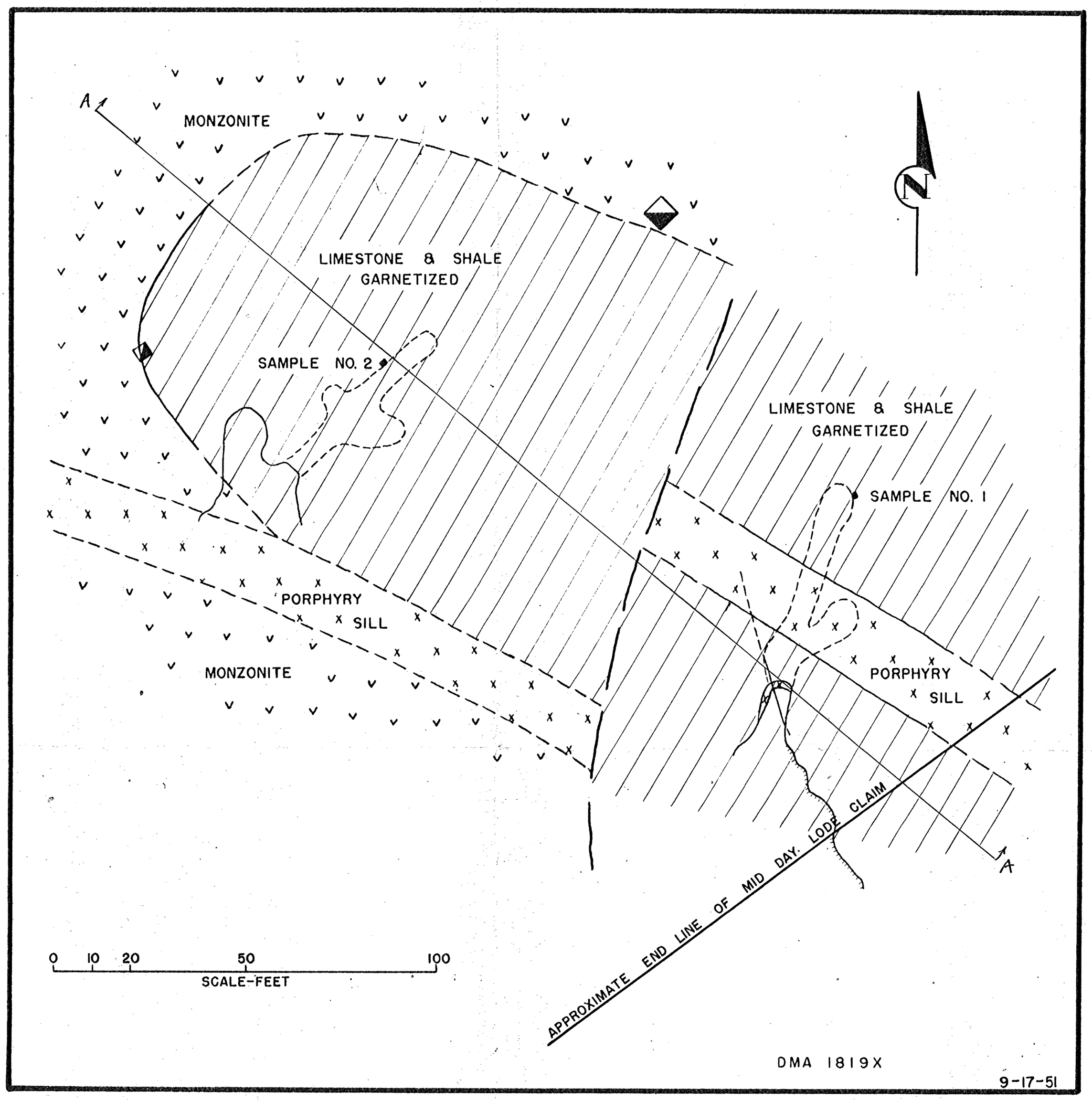

FIGURE 4.-SKETCH OF GEOLOGY AND UNDERGROUND WORKINGS OF MID DAY LODE (ALABAMA GROUP)