700 FILE COPY
SURNAME:

Schmidt
Ellis
Johnson
Nelson
Thayer
Nelson
Johnson

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

FEB 15 1952

r. . . hurmond, Jr.
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a Tenz, e. exico

: Docket o. -15 3) (Copper)
ixt (Copper rospect Group
ocorro ount , New exico

Dear Mr. Thurmond:

Our application for aid in an exploration project on the ixt Copper rospect Group has received careful consideration.

rojects approved the efense Minerals Exploration dministration must show promise of producing material of sufficient value and quantity to improve the mineral supply for national defense.

careful study of your application and the property concerned reveals that the possibility of accomplishing this is not considered sufficiently promising to justify Government assistance.

Under these circumstances we regret to inform you that the application for aid amounting to 50% of $50,630.00 has been denied. If future work at your property reveals evidence which would materially alter this opinion, please let us know and we will be glad to consider a new application.

Sincerely yours,

C. O. Wittendorf (for) 2/15

cting Administrator
efense Minerals Exploration
dministration

APPROVED:

Schmidt/jen
2/8/52
cc to: Adm. Reading File
Docket
Messrs. Johnson, C.H. Rm. 3621
Nelson, Ned Rm. 4216 GS
Ellis
Schmidt
Field Team, Reg. IV (2)

_____
Member, Bureau of Mines

_____
Member, Geological Survey

OFFICE OF THE ADMINISTRATOR

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION

WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

January 24, 1952

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Final Report, Docket DMA 1553X, S. S. Thurmond, Jr., Sixty Copper Prospect Group, Magdalena Mining District, Socorro County, New Mexico

Enclosed herewith are the original and two copies of the report pertaining to the above application. The brochure is also enclosed. The application is for Government assistance in exploration work estimated to cost $50,630.00. The work proposals consist of an unspecified amount of churn drilling, a maximum of 350 feet of shaft sinking, and 300 feet of drifting.

The property is developed by a 54 foot shaft and various shallow pits and trenches. The terrain of the Sixty Copper Prospect Group is of gentle relief and rock exposures are of small vertical extent. From the exposures that can be studied, the only rocks present are tertiary volcanics which are flanked by recent alluvium. Scant copper mineralization occurs in the volcanic rocks and is associated with northerly trending shear zones. Based on the secondary character of the mineralization, exposed in the shaft and the various pits and trenches, from the lack of gossan or boxwork, and from lack of indications of the transportation of copper minerals after emplacement in the rock, the examining engineer concludes that the possibility for secondarily enriched ore bodies at depth is very unfavorable, if dependent on present exposures.

We concur in the conclusion and the recommendation that the application for Government assistance in exploration work be denied.

FEB 1 1952

J.H. East, Jr.

A. H. Koschmann

Enclosures

Mining Division
Region IV

January 24, 1952

Reviewed by
DMEA OPERATING COMMITTEE

2-4-52.
(date) (RL)

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 1553[illegible], S. S. Thurmond, Jr., Sixty Copper Prospect Group, Magdalena Mining District, Socorro County, New Mexico

Enclosed are the original and seven copies of the Engineering Report by the Bureau of Mines pertaining to the above application. The Geological Survey did not participate in the investigation.

It has been recommended that the application for Government assistance in exploration work be denied.

The brochure is enclosed.

W. H. King
W. H. King

Enclosures

JST:lM

cc: Docket, chron.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 1 1952

Mining Division
Date Recd.
JAN - - 1952
BUREAU OF MINES
Denver, Colorado

January 4, 1952

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Branch

Subject : Final Report, DMA Docket 1553X, R. F. Thurmond's "Sixty" Copper Prospect, Magdalena Mining District, Socorro County, N. Mex.

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

This report has my approval.

Brochure is enclosed.

Walter P. Storms

CC: P. T. Allsman (7)
C. A. Anderson
DMA-1553X
DF

WPStorms:als

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-1553X, S. S. Thurmond's "Sixty" Copper Prospect, Magdalena Mining District, Socorro County, N. Mex.

John H. Soule', Mining Engineer
U. S. Bureau of Mines

January 1952

als

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By John H. Soule'[1]

The "Sixty" copper prospect is located 10 miles west of Magdalena, N. Mex., just south of U. S Highway 60. The terrain is rolling and the relief is small. Most of the area can be crossed by car.

Although there is evidence that some prospecting was done many years ago, it was only recently that attention was given to the copper-stained outcrops of the area. S. S. Thurmond and 3 partners located 5 lode claims, did a small amount of trenching and test pitting, and sank a small shaft to a depth of 54 feet.

In May 1951, the owners applied for an exploratory loan from the Defense Minerals Administration. The application, Docket DMA 1553X, consisted of 2 phases of work and totaled $50,630, of which one-half was to be supplied by the Government.

Scant copper mineralization occurs in Tertiary volcanic rocks and is associated with northerly trending shear zones. This mineralization seems exotic and evidence indicates that ore bodies of the secondary enrichment type do not exist.

Ore reserves are very limited and the tenor of the material is very low. Chances for finding larger ore bodies of better grade are negligible.

A denial of the application is recommended.

1/ Mining Engineer, Bureau of Mines

S. S. Thurmond's
"Sixty" Copper Prospect
Magdalena Mining District
Socorro County, N. Mex.
DMA-1553X

Engineering Report

By John H. Soule'
Mining Engineer
U. S. Bureau of Mines

January 1952

S. S. THURMOND'S
"SIXTY" COPPER PROSPECT
MAGDALENA MINING DISTRICT
SOCORRO COUNTY, N. MEX.
DMA-1553X

CONTENTS

Engineering report	Page
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Ownership and extent	3
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Ore reserves	7
Conclusions	8
Recommendations	9

ILLUSTRATIONS

Figure		Following page
1.	Location map, "Sixty" copper prospect	2
2.	Surface map, "Sixty" copper prospect	2

INTRODUCTION

Although prospecting in the vicinity of the "Sixty" copper prospect dates back many years, the early work was done in searching for silver, and it is only the last few years that the copper-stained outcrops were of sufficient interest to warrant prospecting.

The locators of the property have done some shallow trenching and pitting, and on one outcrop have sunk a small shaft to a depth of 54 feet. While this shaft work was in progress, a request was made to the Bureau of Mines for assistance. W. D. McMillan, formerly Supervising Engineer of the New Mexico Field Office, examined the property in October 1950 and recommended that no further consideration be given it by the Bureau of Mines.[1/]

Subsequently in May 1951, the owners applied to the Defense Minerals Administration for Government aid in exploring the property. The application, Docket DMA-1553X, was for a maximum of $50,630, suggesting a 50 percent participation between Government and owners. The brochure was sent to the field and an examination of the property was requested. This report gives the results of that examination, which was made on November 27, 1951.

ACKNOWLEDGMENTS

Acknowledgment is made of the material supplied by S. S. Thurmond, part owner of the "Sixty" copper prospect, and to Thurmond and E. E. Cobb, partners, for showing the property to the examining engineer.

1/ Summ. Rpt. of Minerals Exam., "Highway 60 Copper Prospect, Socorro County, N. Mex.," W. D. McMillan No. 24, 10/13/50.

Acknowledgment also is made of the material available in the above-mentioned report on the property by W. D. McMillan, Mining Engineer, Bureau of Mines.

LOCATION, TOPOGRAPHY AND CLIMATE

The "Sixty" copper prospect is located 10 miles west of Magdalena, N. Mex., just south of U. S. Highway 60 (see Fig. 1). The main area of the deposits is located very near the middle of adjoining sec. 6, T. 3 S., R. 5 W., and sec. 1, T. 3 S., R. 6 W. The quarter corner marking the mid-point of the line between the sections lies a few feet north of the shaft (see Fig. 2).

The property is reached by traveling west on U. S. Highway 60 for 10 miles from Magdalena, N. Mex. This point is at the top of the highway grade and the property lies just south of the highway. The shaft is located on the southwest side of a small hill about 1,000 feet from the highway (see fig. 2).

The topography is very gentle. The relief is low with an overall difference of elevation of the highest and lowest points on the property of a little over 100 feet. Most of the surface is smooth. Minor bold rock outcrops occur only in the south part of the property. Practically all of the area may be traversed by automobile. The mean altitude of the property is about 7,200 feet.

There are no permanent streams in the area. The water table is estimated to lie about 350 feet below the surface as indicated in deep wells. The mean annual precipitation is about 13 inches of rainfall during the summer, and about 21 inches of snowfall during the winter

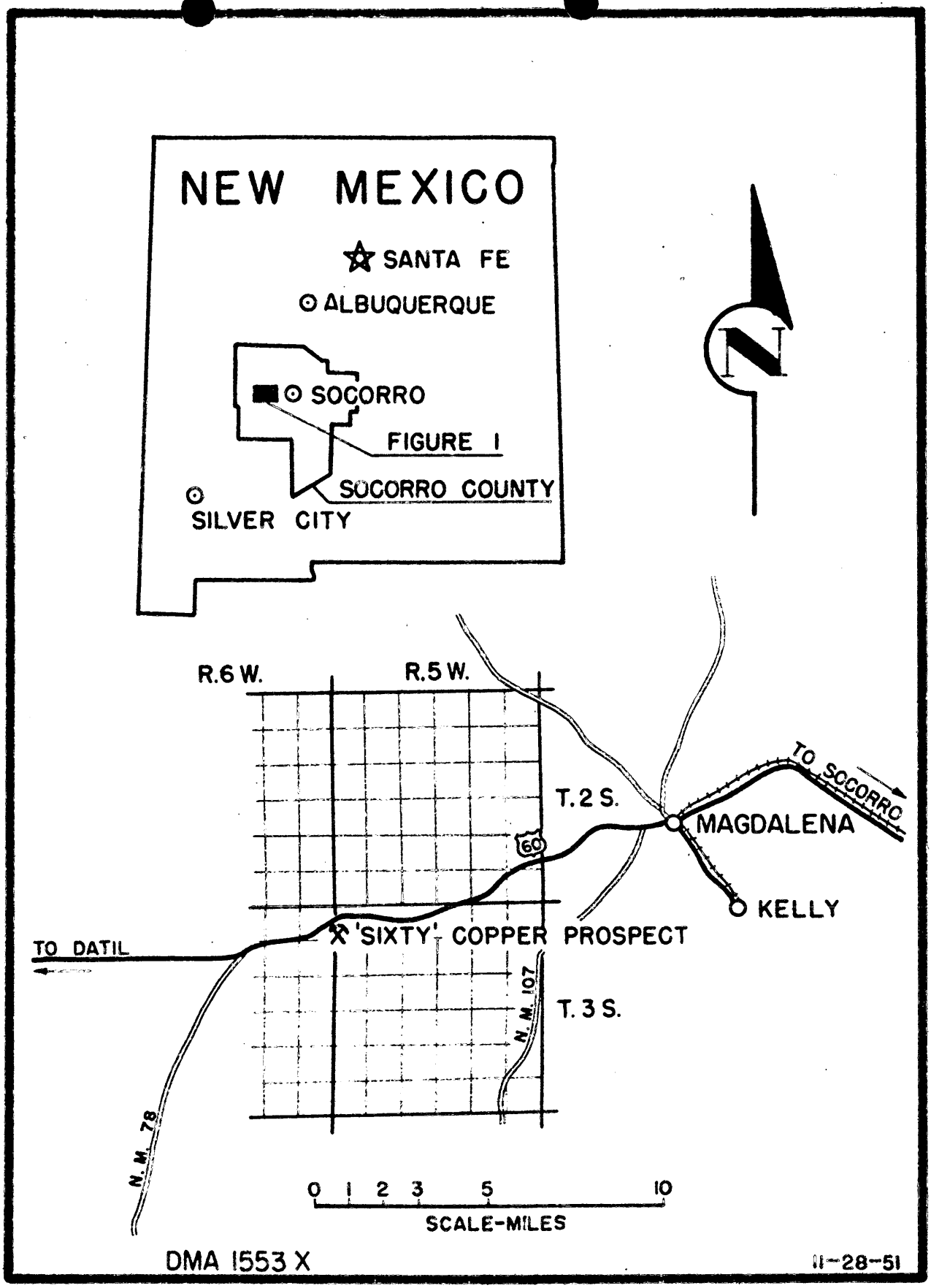

FIGURE 1.—LOCATION MAP, 'SIXTY' COPPER PROSPECT, SOCORRO COUNTY, N.M.

months. Cold periods may be severe but are usually not prolonged. Summer temperatures rarely exceed 100 degrees.

There are no living accommodations at the property but such may be obtained at Magdalena, 10 miles to the east. Rail freight, express, telephone, and telegraph services are available at Magdalena, which has an estimated population of about 1,200. Some skilled mining labor is available in that city.

A three-phase power line passes by the property. Water for an operation must be hauled from Magdalena, unless arrangements could be made to obtain water from ranchers' wells, close to the property.

HISTORY AND PRODUCTION

There is evidence of old prospecting in the vicinity of the "Sixty" copper prospect. That work was done on manganiferous calcite veins in searching for silver. It was only in the last couple of years that any attention was given to copper-stained outcrops. S. S. Thurmond, E. E. Cobb and J. W. Cobb located claims in the area and prospected for copper. Other than various shallow pits and trenches, they sunk one shaft 54 feet.

There has been no production of copper from the area and it is doubtful if any silver was found by previous work.

OWNERSHIP AND EXTENT

The "Sixty" copper prospect comprises 5 unpatented lode claims located within the past 2 years. The claims, with the exception of "Sixty" No. 3 which lies nearby, are shown in figure 2. The property

is owned by a partnership composed of S. S. Thurmond, E. E. Cobb, J. W. Cobb, and Clinton McCarty. All except McCarty live in Magdalena, N. Mex., while McCarty lives in Canutillo, Texas.

DESCRIPTION OF THE DEPOSITS

Because of the gentle relief of the "Sixty" copper prospect terrain, rock exposures showing other than small vertical extent do not exist. From the exposures that can be studied, the only rocks present are Tertiary volcanics which are flanked by recent alluvium. Of the volcanics, there are probably 2 series represented, of which one has at least 2 phases.

The oldest rock is a probable andesite that exhibits a porphyritic texture. It is somewhat altered and weathered wherever seen. The phenocrysts are feldspar and light in color, while the groundmass is a dark brown color. No quartz was visible in this rock. It has been suggested that it is a dike but its occurrence in the topographic pattern suggests a sill, or more likely an underlying lava flow.

Overlying the andesite is a dense fine-grained rhyolite that forms the only worthwhile outcrop in the area. This rock is in places leached and in places silicified, which may account for the variable appearance. Parts of this rock seem to consist almost entirely of quartz while other parts seem to contain considerable feldspar. However, the grain size is so small that the individual minerals cannot be identified. An occasional rare phenocryst of feldspar altered to serpentine (?) was noted. In places there are numerous small cracks and cavities lined with quartz crystals. Although a definite correlation

was not possible from the time spent, this rhyolite is believed to correspond to the red rhyolite of Loughlin and Koschmann[2/] in the district to the east.

Although no dips of strata could be measured, it seems from topographic evidence that the flows have no more than a very gentle dip with a slight domed effect. The formations are all fractured and 3 major faults or fracture zones were observed. These all trended northerly with steep dips.

Copper mineralization occurred in each of the main fault zones but was more noticeable in the most westerly zone of the area. There the copper occurs as thin linings of the fractures with an occasional bleb of chrysacolla within the rock. Sulfide minerals were rare. The copper is present as chrysacolla with rare malachite and azurite. Also noted as an encrustation in some of the fracture planes in the mineralized zones was a thin coating of vanadanite, which probably accounts for the small amount of lead reported in the assays.

A study of the surface rocks reveals that the copper mineralization is largely confined to the shear zones, although minor copper stains may exist in intervening areas. However, the total area of possible mineralization containing a trace or more of copper seems confined to a roughly circular area about 600 feet in diameter.

All noted mineralization was secondary in character although some sulfide copper minerals were reported in the shaft at a depth of about 35 feet. Even the sulfides, covellite and chalcocite, tend to indicate secondary mineralization.

2/ Loughlin, G. F., & Koschmann, A. H., Geology and Ore Deposits of the Magdalena Mining District, New Mexico, U. S. Geological Survey Prof. Paper 200, 1942

There was very little gossan and very rare boxwork noted on the surface rocks. The gossan and boxwork are confined to small cracks and fissures within the shear zones. This fact would indicate that the copper mineralization is exotic and the source unknown, or if derived from primary mineralization in the fractures of the shear zones, it was derived from a very scant source, and in itself this secondary mineralization would necessarily be scant. Also, the limited amount of hydrothermal alteration would tend to indicate a relatively small amount of mineralizing activity. This meager mineralization is borne out by the assays.

The secondary character of the mineralization with no indication of transportation of copper minerals after emplacement in the rock, together with the lack of gossan and boxwork, indicates that the present "ore bodies" are the "secondarily" enriched "ore bodies" and that enrichment is a negligible factor. It certainly shows that secondarily enriched ore bodies at depth do not exist if dependent upon the present surface and near-surface sources of the copper minerals. Therefore, one can expect a lessening of the copper content of the zone as depth progresses, or at best a retention of the same grade which is low at the start.

Of course, minor small pods of richer material may exist within the zone, but only one small pod was reported in an area covered by about 200 feet of surface exposures and 54 feet of vertical exposure. This would not alter the picture of scant copper mineralization.

ORE RESERVES

The grade of copper-bearing material was derived from the assays of the applicant and of the Bureau of Mines. They seem in general agreement. The assays are listed as follows.

Thurmond assays from shaft

Depth, Ft.	Percent Copper
0 - 16 (dump)	0.27
16 - 28 (muck)	0.44
32 - 36 (muck)	3.27 *
28-32 and 36-48 (composite muck)	0.65

* An inspection of the shaft reveals that all of this material was removed in sinking.

Bureau of Mines assays - location on Figure 2

Locality	Percent Copper
Main shear zone (west)	1.30
Center shear zone	1.05
East shear zone *	0.55

* The applicants suspected the dark coloration of the rock to be due to chalcocite particles disseminated through the rock mass. This sample was cleaned of nearly all green copper minerals and assayed. From the low grade reported and from microscopic examination the dark coloration of the rock was not due to chalcocite. The estimated grade of the rock was about the same as the previous sample.

Based on rough economic analysis, it will be necessary for copper-bearing material to contain at least 2.5 percent copper to be considered as ore. In this case, there are practically no indicated reserves of ore within the "Sixty" copper property. At most, a few tons of ore may be inferred.

However, over a length of 200 feet and a depth of 54 feet and assuming a 5-foot width, which is optimistic, there may be indicated

4,320 tons of copper-bearing material that contain 0.67 percent copper. To this may be added a few tons containing 1.05 percent copper from the middle exposure and a like amount of similar grade from the eastern shear zone. Approximately 5,000 tons of copper-bearing material may be expected as a maximum.

No inferred reserves can be estimated except as a downward extension of the indicated material. Some doubt exists as to whether the copper mineralization extends to depth.

CONCLUSIONS

The following conclusions were derived from an examination of the "Sixty" copper prospect:

1. Surface copper mineralization is sparse and the bulk of it seems confined to northward-trending shear zones in a rhyolite flow;

2. The observed copper minerals were all secondary minerals although a small amount of sulfides were reported from one small mass about 35 feet below the collar of the shaft;

3. The almost complete lack of gossan and boxwork indicates an extremely small quantity of primary copper mineralization, tending to show that the present secondary mineralization is either exotic or was derived from scant primary mineralization;

4. This lack of gossan and boxwork, together with the minerals chrysacolla with minor malachite and azurite, indicates practically no migration of the copper minerals after emplacement in the rock. This would mean that secondarily enriched ore bodies dependent on visible

indications do not exist at depth. In other words, the present showing are the "secondary" ore bodies;

5. Because of the paucity of primary minerals and the presence of the secondary minerals, it must be assumed that the copper mineralization will probably decrease at depth, or at most would retain the same tenor as indicated on the surface;

6. Ore reserves are small and the probability of increasing these reserves is negligible.

RECOMMENDATIONS

Based on the foregoing conclusions, it must be recommended that the application for Government aid in exploring the "Sixty" copper prospect be denied.

310

FILE COPY
SURNAME:

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

Atwood
Gowen
Moore
Thayer

NOV 2 1951

Mr. S. S. Thurmond, Jr.
Box 183
Magdalena, New Mexico

Re: Docket No. DMA-1553X

Dear Mr. Thurmond:

This is to inform you that your application for aid for an exploration project has been referred to the field team for further study. You will hear from Mr. J. H. East, Jr., Executive Officer, DMA Field Team, Region IV, Bureau of Mines, 224 New Customhouse Building, Denver 2, Colorado or one of his staff when they are ready to visit your property.

Very truly yours,

SIGNED B.F. 11-2

Tom Lyon, Director
Supply Division

RVWaugh:rw
10-26-51

Copy to: Administrator's Reading File
Executive Officer, DMA Field Team IV
Coordinating Committee
Copper Branch
Mr. Nelson (GSA Building)
DMA Docket

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

NOV 2 1951

Mr. J. H. East, Jr.
Executive Officer, DMA Field Team IV
Bureau of Mines
224 New Customhouse Building
Denver 2, Colorado

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Docket No. 1555X

Commodity Copper

Applicant Mr. S. S. Thurmond, Jr., Box 183, Magdalena, New Mexico

Please expedite the consideration of this application with particular reference to the points raised in the attached "Review."

Very truly yours,

SIGNED
Chairman
Coordinating Committee

For Bureau of Mines

For Geological Survey

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

NOV 2 1951

Mr. J. H. East, Jr.
Executive Officer, DMA Field Team IV
Bureau of Mines
224 New Customhouse Building
Denver 2, Colorado

REGIONAL DIRECTOR'S
OFFICE
REGION IV
NOV 5 - 1951
BUREAU OF MINES
DENVER, COLORADO

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Docket No. 1553X

Commodity Copper

Applicant Mr. S. S. Thurmond, Jr., Box 183, Magdalena, New Mexico

Please expedite the consideration of this application with particular reference to the points raised in the attached "Review."

Very truly yours,

Tom Lyon
Chairman
Coordinating Committee

Lowell B. Moon
For Bureau of Mines

T. P. Thayer
For Geological Survey

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

NOV 2 1951

OFFICE
REGION IV
NOV 5 - 1951
BUREAU OF MINES
DENVER, COLORADO

Mr. J. H. East, Jr.
Executive Officer, DMA Field Team IV
Bureau of Mines
224 New Customhouse Building
Denver 2, Colorado

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Docket No. 1553X

Commodity Copper

Applicant Mr. S. S. Thurmond, Jr., Box 183, Magdalena, New Mexico

Please expedite the consideration of this application with particular reference to the points raised in the attached "Review."

Very truly yours,

Chairman
Coordinating Committee

For Bureau of Mines

For Geological Survey

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1553X

Date received 6-4-51

Participation

S. S. Thurmond, Jr.,
Sixty Copper Prospect Group
Box 183
Magdalena, New Mexico

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 4 - 1951
LANDON F. STROBEL
Executive Secretary

No BM rights
See Highway 60
McMillan
N Mex 324

Name and address of applicant

Date May 15, 1951

FILL IN THIS BLOCK

Date of application May 15, 1951

Estimated cost Phase I. . .$12,090 ($50,630
Phase II. . . 14,540 Total)
Phase III . 24,000 MAX.

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine Socorro County, New Mexico (10 miles west of Magdalena, N. M.)
in Sec. 6, Tshp. 3 south, Range 5 west, N.M.P.M.

Date of filing MF-100 no

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? A Partnership
*2. If a partnership, state names and addresses of partners. (see page 1, attached)
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. (see page 1, attached)
*5. Are you the owner or the lessee of the property? Owner
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. (pg. 1, attached)
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? (See page 2, attached)

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. on pg. 2 attached supplement

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any. 'Sixty' Copper Prospect

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. on pg 2 attached

*13. State source and quantity of water available for operations and its sufficiency at all seasons. State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. See pg 2 attached

15. State in detail how the ore could be shipped and how and where milled. " " "

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. " " "

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

(*a*) If mine is in production, furnish the following information: Not in production

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? See attached supplement

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each. See attached supplement

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent.

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

'Sixty' Copper Prospect Group
(Name of company)

By [signature]
(Signature of authorized official)

May 29, 1951
(Date)

Engineer —
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT

pursuant to Mineral Order 5, under Defense Production Act of 1950

THE APPLICANT

2. Applicant is a partnership, comprised as follows:

S. S. Thurmond, Jr.,	Box 183,	Magdalena,	New	Mexico
E. E. Cobb,	Box 193,	"	"	"
J. W. Cobb,	" "	"	"	"
Clinton McCarty,	Box 122,	Canutillo,	Texas	

4.(a & b) The applicant will manage exploration project, and experience of partners is as follows:

S. S. Thurmond, Jr. --- (for supervision, engineering, management of project) Graduate of New Mexico School of Mines, B. S. in Geol. Eng'nrg., 1939, eight years varied experience in mining industry as assayer, shift foreman, research dept., asst. to gen'l. foreman; employed by US.S.R.&M. Co., Cerro de Pasco Copper Corp., Phelps Dodge Corp., Burro Mtn. branch, and smaller operations. Currently completing 4 yrs. practice as independent engineer and surveyor (N.M. Lic. No. 720).

E. E. Cobb --- automotive mechanic and miner - general underground experience (Idarado Mining Co., Rosedale Gold Mines, A.S.&R., Magdalena unit) - 15 yrs. experience.

J. W. Cobb --- welder, blacksmith, surface and mine mechanic and maintenance foreman (A.S.&R.Co., Magdalena unit), and well drilling.

Clinton McCarty --- electrician, welder, well driller, stationary power operator (A.S.&R. Co.)

8. Financial Statement: (The property is non-producing prospect) The applicants currently have $1000.- cash, plus time and equipment pledged for exploration. No liabilities.

9. Proposed investment of the applicant is largely in the form of supervision and labor, plus partial supply of equipment and is sufficient to pay for fifty percent of the proposed exploration as detailed in answer to question 23, below. Applicant has a tentative part payment in stock agreement with drilling contractor for churn drilling phase of exploration.

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, New Mexico

THE PROPERTY

10. (a & b) Exploration project shall be on the 'Sixty' Nos. 1, 2, 3, and 4 unpatented mining claims as shown on the map filed herewith. The area within which claims are located is as follows:-
Northwest-quarter, and North-half, southwest-quarter, Sec. 6, T. 3 S., R. 5 W., N.M.P.M. ; Northeast-quarter, southeast-quarter; and east-half, northeast-quarter , Sec. 1, T. 3 S., R. 6 W., N.M.P.M.

12. The 'Sixty' claims are adjoining paved highway, 'U. S. '60" at a distance of 10 miles west from Magdalena, New Mexico, head of spur line of A. T.&S. F. Railroad.

13. Water supply: For exploration drilling would be hauled from Magdalena; or pending permission water might be used from a government owned well 1-1/2 miles west. For future consideration water may be had by wells tapping the adjacent underground basin of the Saint Augustine Plains. On basis of the abovesaid government well, water table should be in vicinity of 300 ft. depth at the mining claims.

14. Existing facilities: None (other than prospect headframe).

15. Shipment of ore would be by truck to rail-head (item 12), thence approximately 200 miles by rail to El Paso, Texas, smelter of A. S. & R. Co.

16. History of property:
(a) Previous exploration has been very limited comprising only a few scattered shallow workings most of which are very old. Search for technical or record reference has been unsuccessful.
(b) The well known Magdalena lead-zinc district of appreciable past production is 10 miles east. (U.S.G.S., Professional Paper 200)
(c) Copy of a limited report previously prepared by applicant is enclosed herewith.

THE EXPLORATION

20. Objective of exploration will be primarily to determine copper ore in a 'secondary enrichment' zone below mineralized 'capping'.

21. Exploration is proposed in three phases, <u>later phases dependent on favorable results of preceding work</u>, as follows:

Phase 1.- Four 'scout' churn drill holes located in and immediately adjacent to mineralized outcrop area to tentative maximum depth of 600 feet. (See Geologic map)-- Requiring three months.

Phase 11. (a) Continuation of existing prospect shaft (54' deep) or new shaft to groundwater table, maximum 350 feet - requiring six months.
(b) 300 feet of drifting - requiring three months.

Total . . . . One year (maximum)

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

THE EXPLORATION (continued)

21. (cont.) Proposed work, description -

Phase 111.- Depending on indications of first holes this phase might precede phase 11. For this phase eight churn-drill holes are planned to establish probable extent and continuity of the ore body encountered in phase 1. Four tentative locations are shown on map, the results of which would dictate distribution of four additional holes. (max. hole depth of 600 ft.) __ time max. of six months.

Total Time for Project: One year and six months -- this estimate is based on a minimum scale of operations, whereas actually all practical effort would be made to reduce time for total project to not more than one year.

22. Basis of Project:- A disseminated type of oxidized copper mineralization in the leached outcrop of an intensely fractured and otherwise porous rock gives a reasonable chance of commercial ore in a supergene enrichment zone at or near the ground water table (at approximately 300 ft. depth). Near surface occurrences of chalcocite and covellite in local areas of tight rock (assays 1% to 3% copper) are interpreted as residuals of mineralization leached from predominating fractured portions favorable to higher grade ore. (for additional detail see attached report)

THE REQUIREMENTS AND COSTS

23. Itemized statement: Phase 1.- four @ 600' churn-drill holes.---

(1) to be drilled by contract @ $4.-per ft.(max). . . . $ 9,600
(tentative agreement with contractor is $3.-/ ft. without casing; to 400 ft.; $4.-/ft. after 400 ft.; the higher figure is used in estimate to allow for any contingencies encountered in drilling)

(2) supervision, engineering, sampling, sample preparation ; and record data - one @ $350./mo. 1,050

(3) assaying and related expense, estimated @ $0.60/ft. . 1,440
(avg. 0.74 determinations/ft., incl. composites)

Total (phase 1 .) . . $12,090

24. (phase I., only) Time Schedule:

From approval of project to beginning of operation allow 30 to 60 days

Treat drilling on a hole unit basis, 20 days per hole actual drilling time, payment on completion of each hole (maximum $2400.)

Total time from beginning of operation three mos. at avg. $4,030/ mo.

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

THE REQUIREMENTS AND COSTS (continued)

23. Itemized statement for Phase II.:- (a) Prospect Shaft 350 ft. and (b) Drift 300 ft. --- to require three man crew for under ground and surface a total of 275 shifts each, maximum --- at estimated costs of (a) shaft @ $25./ ft. . .$8,750 Max. (b) drift @ $19./ft. . $5,700 Max. Itemized generally as follows:-

Labor and Supervision: 3 men @ avg. $11.20 ea. x 275 . . . $ 9,240

Equipment: compressor, drills, light hoist and accessories
(to be purchased at approx. cost of . . 5,500
(expected salvage value after 9 mos. . . $3000 min.

Rental of equipment would be alternate to above
at rate of approx. $400/ mo.

Materials and supplies: explosives, fuel, steel & bits, timber, repairs, miscellaneous, and smaller items of equipment . . 2,800
(including assaying)

Total $17,540
less salvage . . . 3,000

14,540

24. (phase II. only) Time and cost schedule:

Minimum initial capital outlay (providing purchase of equipment) approx.. . . . . $7,000
Plus operating expense at rate of per mo. 1,100

(a) Shaft avg. progress per shift worked, 2 ft. . . 175 shifts overall
(b) Drifting " " " " , 3 ft. . . 100 " "

23. PHASE III.- Tentatively eight churn-drill holes in addition to Phase I.

To cost from $2600 to $3,000 (as in phase I.) per hole
X 8 . . . .$20,800 to $24,000
(incl. supervision and assaying)
At avg. rate of one hole each 20 days

dmd 1553X

- The 'SIXTY' COPPER PROSPECT -

west of Magdalena, N. M.

A preliminary report of November, 1950
amended and revised in May, 1951

---

by: S. S. Thurmond, Jr.

of The'Sixty' Copper Prospect Group

- THE 'SIXTY' COPPER PROSPECT -
West Of Magdalena, N. M.

A Preliminary Report Of November, 1950
Amended And Revised In May, 1951

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- The 'Sixty' Copper Prospect -

west of Magdalena, N. M.

INTRODUCTION

The 'Sixty' mining prospect comprising four unpatented claims is located adjacent to U. S. Highway '60' ten miles west of the railhead town of Magdalena, New Mexico, and embraces the summit of a chain of low hills extending south and east from 'Tres Montosos' Peaks. The west quarter-section corner of section 6, Township 3 south, Range 5 west, N. M. P. M., Socorro County, N. M. is near the center of claim #1 and the other claims are adjoining.

SUMMARY

The 'Sixty' claims encompass a low rounded hill slightly more than one-quarter mile in diameter which is largely composed of a fine grained, highly siliceous, massive rock, tentatively considered a type of rhyolite. This formation is highly fractured and otherwise permeable. Prospect development consisting of shallow surface excavations and prospect shaft to fifty foot depth is in a six-hundred-foot diameter area showing a disseminated type of oxidized copper mineralization. Character or relations of assocciated surrounding formations of a number of felsic igneous rocks ranging from near-granitic to micro-crystalline in texture is as yet poorly known.

In addition to the normal copper minerals copper-lead vanadates are found in appreciable quantity to limited extent of exploration in the highly leached oxide zone. Near surface occurrences of the sulphides, chalcocite and covellite, in local reefs of tight rock are interpreted as residuals of the mineralization which has been leached from the predominating fractured portions favorable to higher grade ore. Values ranging to 3.9% copper are indicated in zones of restrained leaching, but average values for prospect shaft excavation to 48 feet were:- 0.3 ozs. silver, 0.8% copper, 1.2% lead per ton.

CONCLUSIONS

Bearing in mind the superficial extent of exploration, lack of discovery of a 'gossan', or very appreciable iron stain as indicators; and with the absence to date of a theory as to origin of mineralization; the opinion is yet offered that sufficient is found to suggest possibilities of commercial scale values. The manner of occurrence of the copper sulphides in conjunction with leached appearance and abundant fracture voids in the 'ore rock' is believed to be adequate basis for expecting an appreciable zone of supergene or secondary enrichment ore near the ground water level at a depth of not more than 350 feet.

The measure of risk against prospective values in proving a deposit of the considered type is inherently favorable in that the expense neccessary to yield definite information is comparatively small. The initial expense can be closely fixed in advance, and each additional phase of exploration is expected to be justified by favorable results of the prededing operation.

CONCLUSIONS (continued)

It is proposed to prospect below the copper bearing outcrop first by means of one or more churn-drill holes to depth of 600 feet at an overall maximum cost of $3000 each to prove or disprove a probability of ore existence. Though there is some possibility that indications to be had from the individual drill hole will be indefinite it is felt more likely that one or at most two holes may define rather exactly either the lack of promise or the basis to fully warrant additional procedure.

With an indicated probability of valuable ore thus obtained it would become expedient to extend churn-drilling to include about four holes in or near the area of surface mineralization, followed by widely spaced holes (minimum of four) in the 'ore-host' formation to the north and east wherewith idea as to approximate continuity and grade of ore might be known. Final extent of churn-drilling would of course depend largely on continued finding of ore, but the neccessity of more than twelve holes total is not foreseen, as consideration is for the present limited to the boundaries in common with the surrounding rock formations.

As final proof and culmination of strictly prospecting operations a small shaft and limited amount of drifting in the ore zone would be advantageous, if not absolutely neccessary to proper interpretation of character of ore. Assuming that an expense of $10,000 to $15,000 for the shaft and drifting will have been properly justified by indications from drilling, the risk of this investment will be relatively small.

SCOPE AND PURPOSE OF REPORT

This report was originally written on the basis of a three month period of prospecting development work consisting of a number of trenches or shallow open cuts, one short-lived and unsuccessful attempt at diamond drilling, a prospect shaft to 54 feet on claim #1, and an 11-foot location and prospect shaft on claim #2. Mapping and original surface reconaissance has been considerably augmented to the end that appreciable corrections are neccessary, particularly with respect to the geology of the surrounding formations. By means of Brunton Compass and hand-level field methods an approximately accurate topographic map has been prepared, upon which the formations, thier contacts and other features have been plotted.

The writer, being part owner in the properties treated herewith, is not a disinterested party. This report is intended, however, to employ logical inference in it's first part wherein certain investment risk is proposed; and in it's second part to list impartially and organize all evidence which may have bearing or value in judging that risk.

GENERAL TOPOGRAPHY AND GEOLOGY

The 'Sixty' Prospect at an elevation of 7200 feet above sealevel is in an area of mild relief, low hills of entirely igneous origin rise little more than 100 feet above a surrounding alluvial pediment. Drainage slopes grade from an average 4-percent around the higher points to less than 2-percent in merging onto the alluvial plain. Limited rock outcrops coincide with a minimum distribution of local steeper slopes. Sequence, form and structural relation of geological components are made obscure by the predominant occurence of contacts beneath fill in small shallow valleys and other slope depressions.

THE ROCKS

Classification of rocks is limited here to field type tentative determinations supplemented, however, by correlation with the rocks of the Magdalena District[1], ten miles eastward. Studied comparison has been made with the descriptions given in U.S.G.S. Professional Paper 200, and partially with specimens collected in the district using the geologic map thereof as guide. Rocks of the 'Sixty' Prospect area are accordingly adentified where similiarities permit, but it is neccessary to emphasize that this comparison study is incomplete.

Adequate parrallel may be drawn to classify the host rock of copper mineralization as the "Banded Rhyolite". For purposes of the 'Sixty' area this formation is sub-divided as Type I., a multi-shade light grey, dense, flint-like flow containing thinly scattered small phenocrysts of orthoclase and rarely quartz in groundmass streaked by unequal distribution of iron oxide dust; Type-II., the 'ore-rock', of less determineable character due to hydrothermal alteration and silicification, has the same general texture and contains the remains of similiar phenocrysts of orthoclase (altered to soft sericite or kaolin); Type-III., comprised of patches and dike-like forms within the main formation, though of apparently identical texture and general composition, is colored in shades of light to darker purple. The separate designation of Type-III. may not be warranted on the basis that the purple color may come from inclusions of an andesite porphyry found in this rock, but providing the color is of endomorphic origin, a tight contact of sharp color contrast would seem contrary to the idea of a contiguous mass. In considering the andesite inclusions it may be noted that thier occurence is not near any known contact.

1- U.S. Geological Survey Professional Paper 200, pgs. 23 to 44 incl.

THE ROCKS (continued)

"Rhyolite Porphyry"[1] of near-granitic texture, probably a laccolithic sill is found in igneous contact below "Purple Andesite"[2], a lavender to dark purple porphyry characterized by abundant feldspar phenocrysts, complete alteration of ferro-magnesian minerals to psuedomorpous iron oxide, and lack of quartz phenocrysts which are characteristic of the rhyolite porphyry.

A second type of andesite porphyry ('Type-II.) is composed of abundant partially altered feldspar phenocrysts in a granular dark-purple-gray or blackish-gray groundmass, distinct from the "Purple Andsite" flow rock, is intrusive, occuring as a wide dike on the north of the banded rhyolite. In another occurence of the identical type in the valley-fault-contact on the south of the banded rhyolite the rock has undergone hydrothermal alteration and impregnation with pyrite, the phenocrysts are entirely changed to calcite or other secondary minerals and the groundmass is dull green. Two small rock exposures along this contact have been mapped as the 'Type-II.' andesite though so highly altered and decomposed as to make classification very uncertain.

A Latite Porphyry, where found in a single fresh rock exposure, is characterized by altered small but well defined biotite and horneblende phenocrysts and less well defined feldspar phenocrysts in a light grey, micro-granular groundmass, which appears as a very light purple shade of white under the hand lens. In the more accessible exposures near contact this rock appears noticeably finer-textured, and is altered to a light-greenish-brown color. Bearing appreciable resemblence to latite dikes of the Magdalena District[3] is suspected as a very wide dike or sill, located in fault contact with the north-east side of the banded rhyolite, but the opposite wall or boundary is hidden under the overlapping alluvial pediment.

Basalt, typical black flow rock, caps gently rounded hills about one-half mile across a wide valley to eastward, outside of the area mapped.

STRUCTURE AND ROCK DISTRIBUTION (See Geologic Map)

The copper-bearing rhyolite formation forms a fault-block, tentatively in down-thrown position, and the center of the hill which it comprises is traversed by a dominant fault striking N.25°E. This fault which has the west half containing the specific mineralized zone in the upthrown position is responsible for exposing the "rhyolite porhyry" in the hill to the south as a geological ridge sandwhiched between the "purple andesite" downthrown on the east and overlying "purple andesite" in igneous contact on the west (low angle dip westward?). Thence revolving clockwise across valley fill the Type-I. "banded Rhyolite" is found in contact with another exposure of the rhyolite porphyry on the west ofthe ore zone. Thence again across valley fill the Type-II., 'ore-rock' facies may be traced northwestward. Relation of the latite porphyry in fault contact on the northeast, striking N.35°W. and dipping 50° to 68° southwest is the least known in regard to form and sequence.

1,2,3 op. cit., pgs. 33, 27, 33

CHARACTER OF THE MINERALIZED ROCK

The copper-mineralized rock appears as a whitish, fine textued, allmost totally siliceous, massive formation particularly well exposed on the south slope of the hill which it comprises. On sub-surface excavation the rock is found to be intensely fractured, in magnitude ranging from the microscopic to pronounced fissures of moderate extent, accompanied by multiple-direction shearing. Movement between blocks is evidenced by thin gouge seams, breccia, and slickenside surfaces, but the amount of displacement appears limited with few exceptions. The predominant plane of fracture or shear, if any may be so designated, trends north-south and dips nearly vertically.

Though generally uniform the character of the rock embodies some variation in bands or blocks, textures ranging from dense flint-like to finely granular, and form varying from massive to platy, the former being very hard and tough and the latter, with other portions, somewhat softer. A variable intensity of fracturing has resulted in an over-emphasis of the irregular tight reef-like blocks in outcrops through residual effect of erosion.

MINERALIZATION

General Character.--- Copper mineralization is visible in the massive outcrops over an area roughly 600 feet in diameter, if not on the natural weathered surface at least by breaking to a depth of a few inches. Samples of these exposures yield assays of 0.25% to 3-plus% copper. This mineralized zone is bounded on the south and west by the contacts with the adjacent formations, but no explanation is yet found for limits where the rhyolite formation extends on the north and east. Boundary on the north is indefinite under soil cover of mild slopes with only a few limited rock outcrops.

Interpretation and evaluation of mineral showings must be with full consideration of variations in rock character, particularly so with regard to intensity of fracturing. To the shallow extent of present exploration the copper minerals, other than in the form of vanadates, are largely confined to the tighter, lesser-fractured rock portions. The degree of mineral oxidation and leaching being inversely proportional to porosity the more finely broken material is nearly if not completely impoverished.

Mineralization is of a disseminated type, occuring as thin closely spaced seams or veinlets and in the rock between as shots and fine dust-like specks. Minerals which have been found are listed and briefly described as follows:-

Chrysocolla.-- most visibly abundant mineral associated with smaller amounts of malachite and uncommon occurence of azurite.

Copper-lead Vanadates.-- occurs filling or lining fractures, as stains, globular incrustations, fine radiated, or fine powdery masses; in shades of yellow, brown, green or black color. The vanadates were discovered in panning, both from ravine sands and residual soil; subsequent use has been made as a 'tracer' in prospecting soil covered areas for extent of mineralized zone. Though not so visibly apparent the vanadates are suggested by assays as being the most common mineral of the oxidized zone, unexpectedly and without exception lead has assayed just over one-percent (See Sample Assays, following).

Native Copper.-- found sparingly as small scales in pan concentrates.

MINERALIZATION (Continued)

Chalcocite.-- occurs in tight fractures and disseminated as spots and dust-like clouds in rock, also finely divided in later-stage quartz fracture and breccia filling (see assays). First definitely determined in prospect shaft at 32 to 36-foot depth, where leaching action had been locally minimized, in the form of relatively thick seams of grey-black chalcocite assocciated with an equal or greater proportion of blue-black covellite; and later as the cloud-like impregnations in reefs of tighter rock both in the shaft and on the surface. It was found that light to dark grey rock color was due to capillary size particles of chalcocite.

Chalcopyrite.-- very small yellow metallic particles have been seen occuring very sparingly in high grade specimens of the secondary sulphides, interpreted as relict cores.

Limonite - Hematite.-- as light to heavy stains in, and emanating from fractures, and as fracture filling mixed with large proportion of clay, distribution is local, being completely absent in some portions of the formation (without noticeable relation to grade of copper mineralization). Minor amounts of manganese oxides are noted locally.

Small limonite pseudomorphs after pyrite are sparsely distributed throughout the 'banded rhyolite' formation, but are particularly noticeable in some sections only, such as the tuff exposed on the lower east slope. These occurrences may be related more to rock forming than to mineralizing stage as they are found where there is little other mineral evidence; but conversely stronger concentrations are found in vicinities of faults and a number of formation contacts.

Gangue Minerals.-- Consist in addition to fine grained quartz as above-mentioned only of limited quantity of clay in fault gouge, and local simple fracture filling by secondary kaolin, or other clay minerals formed by descending waters.

Other Mineralization.-- Though no vein formations are found within the copper zone, good size fault fissure veins of quartz, calcite, manganese, barite type containing small amounts of galena, are prolific in the formations surrounding the rhyolite. Though one such fault fissure traverses the center of the rhyolite formation on the east edge of the ore zone the vein filling seems limited to a relatively small amount of quartz. These veins, characteristically low temperature shallow zone type, are thought to be later than the copper mineralization, and mineralogically unrelated. No trace or evidence of copper minerals has been found outside of the highly fractured siliceous rhyolite member; no vanadates are found with the oxidation minerals rimming occasional galena crystals of the veins; nor has any lead in form other than the vanadate been found in the copper zone.

Still another type of mineralization is indicated by hydrothermally altered andesite (?) containing rather densely scattered pyrite (limonite psuedomorphs). There are only two small exposures of a few square yards each in the bottom of the deeply eroded channel of the main drainage artery adjacent to the copper zone on the south. This type of mineralization, to which attention has only very recently been attracted, has not been seen in any of the existing shallow prospect workings of the area. Though here again there is no readily apparent relation with the copper zone the hypothetical possibilities of such relation warrant exploration of this vicinity.

SAMPLES -- ASSAYS

Prospect Shaft ('Sixty' #1 Claim).*---

Sample No.	Description	Depth from-to	Gold Oz./T.	Silver Oz./T.	Copper %	Lead %
13	grab sample, 100# q'rtrd, of dump	0'-16'	-	0.10	0.27	-
23	Sample by decimation	16'-28'	-	0.42	0.44	1.02
30	" " "	32'- 36'	trace	1.06	3.27	1.33
29 & 31-37	" " " (Composite) -and--	28'-32'-- 36'-48'	-	0.38	0.65	1.23
	AVERAGE (per foot of shaft)			0.3	0.8	1.2

*- After 16 ft. depth one shovel-full taken for each wheelbarrow load (approx. 30 shovels) of excavated material from bucket at collar of shaft; for each round sample was crushed to minus-3/4" and quartered to 10 lbs. for assay, (subsequently most samples composited in proportion to footage represented). Assays by R. A. Matuzeski, New Mexico Bureau of Mines & Min. Resources.

Other Samples.--

43	Tight grey rock with disseminated fine chalcocite . . (from open-cut 140' north of shaft)		2.18 .	. -
45	Breccia, finely divided sulphide in tight quartz . . groundmass (from shaft)		2.40 .	. -
24	Fault-gouge material ...approx. 16'-28' ... (values apparently as vanadates)	0.14	1.42	1.23
21	Selected material, oxide Cu minerals (")	1.10	1.31	-
22	" " " " " 26'-28'	1.08	0.87	-
42	" " " " " approx. 40'	-	3.49	-
41	Residual top soil and clay from trench . . . (100 ft. south #2 shaft - 30# sample)	0.30	0.82	1.02
1 & 2	Surface outcrops, random sample of oxide . . . . mineral showings (chrysocolla)		1.30 & 2.18	
3	" " - hematite veinlets . .trace	0.26	0.54	
4 & 5	Composite - unsuccessful attempt sand ** . . . . at diamond drilling (to 16 ft.) slime (** plus small pieces of core)		0.33 0.44	

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 1553X

Commodity COPPER

Total Amount $50,630.00

Govt. Participation $25,315.00

1. Name and Address of Applicant S.S. THURMOND JR.
SIXTY COPPER PROSPECT GROUP, BOX 183, MAGDALENA, NEW MEXICO

2. Location of Property SEC 6 T 3S, R 5W N.M.P.M SEC 1, T 3S
R 6W, NMPM SOCORRO COUNTY, NEW MEXICO

3. Mineral or metal COPPER Is it listed in Section 9 of MO-5? YES

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination ✓

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? YES - OWNER
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? —

Does the lease have sufficient time to run to cover a future

productive period? —

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? —

b) MF-202 —

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower No Mention Made of this

b) Equipment and supplies To Be Acquired
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Not Too Good at Present

e) Power (question 13)* Yes Not stated

OK for exploration

Is a field check needed on any of these points? Yes Water & Power
I think not important at this stage.

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

Is a field check needed on this point? No

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? Yes

If not, are there sufficient data given so that you can describe the project? — If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? N/A for Phase II

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? —

Is this part a worthwhile exploration project? —

d) Are the cost estimates detailed? Yes No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? YES If so, attach a draft.

e) Are the cost estimates reasonable? No EQUIPMENT COSTS IN PHASE II TOO LOW SHAFT SINKING COSTS TOO LOW.

f) Should more information be requested from applicant? YES

g) Is a field examination necessary to complete Exhibit A? YES

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished? — If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? e & f FOR PHASE II

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? YES

d) Is a field check needed? YES

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? YES

b) Is the schedule adequate for the work proposed? YES

c) Is the schedule excessive for the work proposed? No

d) Are the proposed wages and salaries reasonable? YES

e) Is a field check needed? ~~No~~ Yes

Possibly too high PHASE I

EXHIBIT A

PHASE I - Four churn drill holes located in and immediately adjacent to mineralized outcrop area to ventilation maximum depth of 600'

PHASE II - a.) Extension of existing prospect shaft (54' deep) a new shaft to groundwater table, maximum 350'

b.) 300' of drifting

PHASE III - Depending on indications of first holes this phase might precede phase II. For this phase 8 churn-drill holes are planned to establish portable extent and continuity of ore or body encountered in phase I.

PHASE I

DRILLING - $4/ft for 4-600' CHURN-DRILL HOLES	$9,600.00
SUPERVISION @ $350/Mo.	1,050.00
ASSAYING & RELATED EXPENSE @ $0.60/ft.	1,440.00
TOTAL	$12,090.00

PHASE II

SINKING SHAFT @ $25/ft. for 350'	Maximum approximate	8,750.00
DRIFTING @ $19/ft. for 300'	Maximum approximate	5700.00
LABOR & SUPERVISION 3 MEN @ AVG. $11.20 EA X 275 SHIFTS		$9,240.00
EQUIPMENT (SALVAGE AFTER 9 MOS - $3000 MIN.		5,500.00
MATERIALS & SUPPLIES		2,500.00
TOTAL		17,540.00
LESS SALVAGE		3000.00
		$14,540.00

PHASE III

8 CHURN-DRILL HOLES @ $2600 - $3000/HOLE	20,800 - $24,000
INCL. SUPERVISION & ASSAYING	

EXHIBIT C

e. COMPRESSOR, DRILLS, LIGHT HOIST & ACCESSORIES (PHASE II) $5,500

f. Contracting drilling (churn) for PHASE I & II

g. If applicant does not purchase Equipment in Phase II will rent same at $400/Mo.

g. NOT APPLICABLE

14. Exhibit E (question 23-c)*

a) Is it applicable? N/A

b) Sufficient data? -

c) Reasonable? -

d) Field check needed? N/A

15. In your judgment, can the proposed work be done in the proposed time? YES

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? Check Costs and feasibility, desirability of project. Might it not be advisable to drill more than 4 holes befor starting underground work? Phase divines possibility and number & location of additional holes with applicant. In this case, should more holes be drilled after shaft sinking is started? Get a firm bid from drilling contractor. Can Applicant finance first 2-3 months, befor Govt repayment?

Reviewed by: R Waugh
D R Mackaven
C Johnson
J B Gowen

Date

97692

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 1553X

Commodity Copper

Total Amount $50,630.00

Govt. Participation $25,315.00

1. Name and Address of Applicant S. S. Thurmond Jr.
Sixty Copper Prospect Group, Box 183, Magdalena, New Mexico

2. Location of Property Sec 6 T 3S, R 5W N.M.P.M. Sec 1, T 3S
R 6W, NMPM Socorro County, New Mexico

3. Mineral or metal Copper Is it listed in Section 9 of MO-5? YES

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination ✓

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? YES - Owner
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? —

Does the lease have sufficient time to run to cover a future

productive period? —

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? –

b) MF-202

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower No Mention Made of this

b) Equipment and supplies To Be Acquired
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Not To Good ~~Am~~ Present } Not very important for proposed exploration

e) Power (question 13)* ~~Yes~~ Not Stated

Is a field check needed on any of these points? Yes Water - & Power

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

Is a field check needed on this point? No

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? Yes

If not, are there sufficient data given so that you can describe the project? – If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? N/A for Phase II

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? –

Is this part a worthwhile exploration project? —

d) Are the cost estimates detailed? ~~Yes~~ No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? YES If so, attach a draft.

e) Are the cost estimates reasonable? No EQUIPMENT COSTS IN PHASE II TO LOW SHAFT SINKING COSTS TO LOW.

f) Should more information be requested from applicant? YES

g) Is a field examination necessary to complete Exhibit A? YES

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished? — If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? e & f FOR PHASE II

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? YES

d) Is a field check needed? YES

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? YES

b) Is the schedule adequate for the work proposed? YES

c) Is the schedule excessive for the work proposed? No

d) Are the proposed wages and salaries reasonable? YES Supervision charge may be excessive in Phase II

e) Is a field check needed? ~~No~~ Yes

EXHIBIT A

PHASE I - Ten churn drill holes located in and immediately adjacent to mineralized, intrusive area to initial maximum depth / 600'

PHASE II - a) Continuation of existing prospect shaft (54' deep) a new shaft to groundwater table, maximum 350'

b) 300' of drifting

PHASE III - Depending on evaluation of first holes the phase may follow phase II i.e. the phase 8 churn-drill holes are planned to establish positive extent and continuity of ore body encountered in phase I

PHASE I

DRILLING - $4/ft for 4-600' CHURN DRILL HOLES	$9,600.00
SUPERVISION @ $350/mo.	1,050.00
ASSAYING (RELATED EXPENSE @ $0.60/ft.	1,440.00
TOTAL	$12,090.00

PHASE II

SINKING SHAFT @ $25/ft for 350' Maximum approximate	8,750.00
DRIFTING @ $19/ft for 300' Maximum approximate	5700.00
LABOR, SUPERVISION 3 MEN @ AVG. $11.20 EA x 275 SHIFTS	$9,240.00
EQUIPMENT (SALVAGE AFTER 4 MOS - $3000 MIN.	5,500.00
MATERIALS / SUPPLIES	2,500.00
TOTAL	17,540.00
LESS SALVAGE	3000.00
	$14,540.00

PHASE III

8 CHURN-DRILL HOLES @ $600 - $3000/HOLE	20,800 - 24,000
INCL. SUPERVISION & ASSAYING	

EXHIBIT C

e. COMPRESSOR, DRILLS, LIGHT HOIST & ACCESSORIES (PHASE II) $5500

f. Contracting drilling (churn) for PHASE I & II

g. If applicant does not purchase Equipment in Phase II would rent same at $400/mo.

g. NOT APPLICABLE

14. Exhibit E (question 23-c)*

a) Is it applicable? N/A

b) Sufficient data?

c) Reasonable?

d) Field check needed? N/A

15. In your judgment, can the proposed work be done in the proposed time? YES

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? Check costs and feasibility of development project. Might it not be advisable to drill more than 4 holes before starting underground work? Please discuss possibility and number + location of additional holes with applicant. In this case, should more holes be drilled after sinking is started? Get a firm bid from drilling contractor. Can Applicant finance 1st 2-3 months, before Govt repayment

Reviewed by: R Wang

DR MacKown

C Johnson

J B Gowen

Date

97692

OCT 2 1951

Mr. S. S. Thurmond, Jr.
Box 163
Magdalena, New Mexico

Re: Docket No. DMA-1953X

Dear Mr. Thurmond:

This is to inform you that your application for aid for an exploration project has been referred to the field team for further study. You will hear from Mr. J. H. East, Jr., Executive Officer, DMA Field Team, Region IV, Bureau of Mines, 221 New Customhouse Building, Denver 2, Colorado or one of his staff when they are ready to visit your property.

Very truly yours,

SIGNED

Tom Lyon, Director
Supply Division

RWaughtrw
10-26-51

Copy to: Administrator's Reading File
Executive Officer, DMA Field Team IV
Coordinating Committee
Copper Branch
Mr. Nelson (GSA Building)
DMA Docket

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

Mr. J. H. East, Jr.
Executive Officer, DMA Field Team IV
Bureau of Mines
221, New Customhouse Building
Denver 2, Colorado

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Docket No. 1553X

Commodity Copper

Applicant Mr. S. S. Thurmond, Jr., Box 153, Magdalena, New Mexico

Please expedite the consideration of this application with particular reference to the points raised in the attached "Review."

Very truly yours,

Chairman
Coordinating Committee

For Bureau of Mines

For Geological Survey

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 1553 X

Commodity COPPER

Total Amount $50,630.00

Govt. Participation $25315.00

1. Name and Address of Applicant S S THURMOND Jr.
BOX 183, MAGDALENA, NEW MEXICO

2. Location of Property SEC 6, T 3S, R 5W NM PM
SOCORRO COUNTY, NEW MEXICO

3. Mineral or metal COPPER Is it listed in Section 9 of MO-5? YES

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination ✓

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? YES OWNER
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached?

Does the lease have sufficient time to run to cover a future productive period?

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? —

b) MF-202 —

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower YES

b) Equipment and supplies YES
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* YES

d) Water (question 13)* No To good.

e) Power (question 13)* YES

Is a field check needed on any of these points? YES — WATER

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* YES

Is a field check needed on this point? No

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? YES

If not, are there sufficient data given so that you can describe the project? — If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? YES — but not.

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? YES

If not, what part of it is? —

Is this part a worthwhile exploration project? —

d) Are the cost estimates detailed? All but equipment

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? YES If so, attach a draft.

e) Are the cost estimates reasonable? YES

f) Should more information be requested from applicant? No

g) Is a field examination necessary to complete Exhibit A? No

11. Exhibit B (question 23-d)*

a) Is it applicable? NO

b) If so, are sufficient data furnished? — If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? ~~the~~ lis - pendens

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? —

d) Is a field check needed? YES - list of equipment & cost of each.

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? YES

b) Is the schedule adequate for the work proposed? YES

c) Is the schedule excessive for the work proposed? No

d) Are the proposed wages and salaries reasonable? YES

e) Is a field check needed? No.

DMA 1553X

EXHIBIT A

Exploration Project.

Phase 1 - four 'scout' churn drill holes located in and immediately adjacent to mineralized outcrop area to tentative maximum depth of 600 feet - 3 Months

Phase 2 - a) Continuation of existing prospect shaft (54' deep) or new shaft to groundwater table, maximum 350 feet - 6 Months.

b. 300 feet of drifting - 3 Months

Phase 3 - Depending on indications of first holes this phase might precede phase 2. For this phase 8 churn-drill holes are planned to establish positive extent and continuity of zones as body encountered in phase 1. Four tentative locations are shown on map, the results of which would dictate distribution of four additional holes (max hole depth of 600 ft) - 6 Months

Total time for project - 1½ years.

Summary of Costs.

DRILLING	$33600.00
SUPERVISION	1050.00
ASSAYING	1440.00
Labor	9240.00
Equipment	2500.00
Supplies	2800.00
	$50,630.00

23. d. Not applicable

e. Compressor, drills, light hoist + accessories $5500

expected salvage after 9 Mos (M.M) 3000

$2500

f. not applicable.

g. not applicable

h. Supplies - explosives, fuel, steel bits, tools, repairs, misc. & smaller items of equipment $2800.00

i. Misc. - assay & related expense, est. @ .60/ft 1440.00
(avg. .74 determinations/ft incl. composites)

a. Labor - 3 men @ 11.20 each avg. x 275 shifts $9240.00

b. Supervision engineering, sampling, sample preparation & record data - one @ 350/mo. for 3 mos. 1050.00

c. None.

Drilling in Phase I - 4 holes @ 600' churn drill to be drilled by contract @ $4/ft (max) $9600.00
(tentative agreement not contract is 3-/ft without casing, to 400 ft. $4-/ft after 400 ft; the higher figure is used in estimate to allow for any contingencies encountered in drilling)

Drilling in Phase III - 8 churn drill holes tentatively at cost for $2600 - 3,000/hole including supervision and assaying $24,000.00
Average rate of one hole each 20 days.

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data? —

c) Reasonable? —

d) Field check needed? No

15. In your judgment, can the proposed work be done in the proposed time? YES

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? Check feasibility & geology. If showing merits exploration, determine best procedures (churn drilling or other work) and most suitable scale and schedule of operation, and confer with Applicant to try to obtain acceptable project.

Reviewed by: [illegible]
R W Lewis
C Coffman

Date

INT.-DUP. SEC., WASH., D.C. 99009

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 1553 A

Commodity COPPER

Total Amount $50.630 00

Govt. Participation $25315 00

1. Name and Address of Applicant SS THURMOND JR.
BOX 183, MAGDALENA, NEW MEXICO

2. Location of Property SEC 6, T 3S, R 5W NM PM
SOCORRO COUNTY, NEW MEXICO

3. Mineral or metal COPPER Is it listed in Section 9 of MO-5? YES

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination ✓

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? YES OWNER
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? N/A

Does the lease have sufficient time to run to cover a future

productive period?

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? —

b) MF-202 —

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower YES

b) Equipment and supplies YES
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* YES

d) Water (question 13)* No Tc good.

e) Power (question 13)* YES

Is a field check needed on any of these points? YES — WATER

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* YES

Is a field check needed on this point? No

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? YES

If not, are there sufficient data given so that you can describe the project? — If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? YES - but not

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? YES

If not, what part of it is? —

Is this part a worthwhile exploration project? —

d) Are the cost estimates detailed? all but equipment

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? YES If so, attach a draft.

e) Are the cost estimates reasonable? YES

f) Should more information be requested from applicant? No

g) Is a field examination necessary to complete Exhibit A? No

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished? — If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? ~~the~~ e is - f and g not

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? —

d) Is a field check needed? YES - list of equipment & cost of each.

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? YES

b) Is the schedule adequate for the work proposed? YES

c) Is the schedule excessive for the work proposed? No

d) Are the proposed wages and salaries reasonable? YES

e) Is a field check needed? No.

DMA 1553X

EXHIBIT A

Exploration Project.

Phase 1 - four 'scout' churn drill holes located in and immediately adjacent to mineralized outcrop area to tentative maximum depth of 600 feet - 3 Months

Phase 2 - a) Continuation of existing prospect shaft (54' deep) or new shaft to groundwater table, maximum 350 feet - 6 Months.

b. 300 feet of drifting - 3 Months.

Phase 3 - Depending on indications of first holes this phase might precede phase 2. For this phase 8 churn-drill holes are planned to establish outside extent and continuity of the ore body encountered in phase 1. Four tentative locations are shown on map, the results of which would dictate distribution of four additional holes (max hole depth of 600 ft) - 6 Months.

Total time for project - 1½ years.

Summary of Costs.

DRILLING	$33600.00
SUPERVISION	1050.00
ASSAYING	1440.00
Labor	9240.00
Equipment	2500.00
Supplies	2800.00
	$50,630.00

23. d. Not applicable

e. Compressor, drills, light hoist + accessories $5500

expected salvage after 9 Mos (M.M) 3000

$2500

1. not applicable

g. not applicable

h. Supplies - explosives, fuel, blast bits, tools, repairs, misc., smaller items of equipment $2800.00

i. Misc. - assay & related expense, est. @ .60/ft 1440.00
(Avg. .74 determinations/ft incl. composites)

a. Labor - 3 men @ 11.20 each avg. x 275 shifts $9240.00

b. Supervision engineering, sampling, sample preparation & record data - one @ 350/mo. for 3 mo 1050.00

c. None.

Drilling in Phase I - 4 holes @ 600': churn drill to be drilled by contract @ $4/ft (max) $9600.00
(tentative agreement with contractor is 3-/ft without casing, to 400 ft. $4-/ft after 400 ft; the higher figure is used in estimate to allow for any contingencies encountered in drilling)

Drilling in Phase III - 8 churn drill holes tentatively to cost per $2600 - 3,000/hole including supervision and assaying $24,000.00
Average rate of one hole each 20 days.

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data? —

c) Reasonable? —

d) Field check needed? No

15. In your judgment, can the proposed work be done in the proposed time? YES

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? Check feasibility of geology. If showing merits exploration, determine best procedures (churn drilling or other) and most suitable scale and schedule of operation, then confer with Applicant to try to obtain acceptable project

Reviewed by: [illegible]
R W Lewis
C E Johnson

Date

INT.-DUP. SEC., WASH., D.C. 99009

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 1553 A

Commodity COPPER

Total Amount $50,130.00

Govt. Participation $25,315.00

1. Name and Address of Applicant SS CHILMOND JR.
BOX 183, MAGDALENA, NEW MEXICO

2. Location of Property SEC 6, T 3S, R 5W NM PM
SOCORRO COUNTY, NEW MEXICO

3. Mineral or metal COPPER Is it listed in Section 9 of MO-5? YES

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination

e) Is there an alternative and favorable project? ✓
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? YES OWNER
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? N/A

Does the lease have sufficient time to run to cover a future productive period?

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? —

b) MF-202 —

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower YES

b) Equipment and supplies YES
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* YES

d) Water (question 13)* No Tested

e) Power (question 13)* YES

Is a field check needed on any of these points? YES - WATER

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* YES

Is a field check needed on this point? No

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? YES

If not, are there sufficient data given so that you can describe the project? — If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? YES - Incl

Incl.

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? YES

If not, what part of it is? —

Is this part a worthwhile exploration project? —

d) Are the cost estimates detailed? Cost list equipment

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? Yes If so, attach a draft.

e) Are the cost estimates reasonable? Yes

f) Should more information be requested from applicant? No

g) Is a field examination necessary to complete Exhibit A? No

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished? _____ If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? No - Management

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? —

d) Is a field check needed? Yes - Land Improvements, cost of each.

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? Yes

b) Is the schedule adequate for the work proposed? Yes

c) Is the schedule excessive for the work proposed? No

d) Are the proposed wages and salaries reasonable? Yes

e) Is a field check needed? No

DMA 1553K

EXHIBIT A

Exploration Project.

Phase 1 - from scout churn drill holes located in any immediate vicinity adjacent to mineralized outcrop area to tentative maximum depth of 600 feet - 3 Months

Phase 2 - Continuation of existing prospect shaft (541' deep) or new shaft to groundwater table, maximum 350 feet - 6 Months.

b. 300 feet of drifting - 3 Months

Phase 3 - Depending on indications of first holes this phase might precede phase 2. For this phase 8 churn drill holes are planned to establish ore strike extent and continuity of ore body encountered in phase 1. For tentative location see phase 2. Depending on results of work a more detailed distribution of from additional holes (max hole depth of 600 ft) - 6 Months

Total time for project - 1½ years.

Summary of Costs.

DRILLING	$33600.00
SUPERVISION	1050.00
ASSAYING	1440.00
Labor	9240.00
Equipment	250.00
Supplies	2800.00
	$50,630.00

23 d Not applicable

e. Compressor, drills, light hoists, accessories $5.500

operated average after 4 Mos (M.M) 3.000

$2500

f. not applicable

g. not applicable

h. Supplies - explosives, fuel, steel bits, tools, repairs, misc., smaller items of equipment $3800.00

i. Misc. - Assay & related expense, est. @ $.60/ft 1440.00
(Avg. .74 determinations/ft incl. composites)

a. Labor - 3 men @ 11.20 each avg. 1275 shifts. $4240.00

b. Supervision engineering, sampling, assayed preparation & record data - me @ 350/mo. for 3 mo. 1050.00

c. None.

Drilling in Phase I 4 holes @ 600' churn drill holes drilled by contract @ $4/ft (max) $9600.00
(tentative agreement reached contractor is 3-/ft without casing, to 400 ft. $4-/ft after 400 ft; the higher figure is used in estimate to allow for any contingencies encountered in drilling)

Drilling in Phase III - 8 churn drill holes tentatively to cost for $2600 - 3,000/hole including supervision and assaying $24,000.00

Average rate for one hole each 20 days.

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data? —

c) Reasonable? —

d) Field check needed? No

15. In your judgment, can the proposed work be done in the proposed time? Yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? [illegible]

If showing merits exploration, determine most suitable procedures (churn drilling or other) and best scale and rate of operation, then confer with Applicant to obtain an acceptable project.

Reviewed by: [illegible]

R W Lewis

C J Thurson

Date

INT.-DUP. SEC., WASH., D.C. 99009

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1553X

Date received 6-4-51

Participation

S. S. Thurmond, Jr.
Sixty Copper Prospect Group
Box 183
Magdalena, New Mexico

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 4 - 1951
LANDON F. STROBEL
Executive Secretary

Name and address of applicant

Date May 15, 1951

FILL IN THIS BLOCK

Phase I. . . $12,090 ($50,630
Phase II. . . 14,540 Total)
Phase III . 24,000 MAX.

Date of application May 15, 1951

Estimated cost

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine Socorro County, New Mexico (10 miles west of Magdalena, N. M.)

in Sec. 6, Tshp. 3 south, Range 5 west, N.M.P.M.

Date of filing MF-100 no

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? A Partnership
*2. If a partnership, state names and addresses of partners. (see page 1, attached)
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. (see page 1, attached)
*5. Are you the owner or the lessee of the property? Owner
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. (pg. 1, attached)
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? (See page 2, attached)

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any exist mine or operating property. on pg. 2 attached supplement.

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any. 'Sixty' Copper Prospect

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. on pg 2 attached

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. See pg 2 attached

15. State in detail how the ore could be shipped and how and where milled. " " "

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

(*a*) If mine is in production, furnish the following information: Not in production

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? See attached supplement

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each. See attached supplement

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent.

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

'Sixty' Copper Prospect Group
(Name of company)

By [signature]
(Signature of authorized official)

May 29, 1951
(Date)

Engineer
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT

pursuant to Mineral Order 5, under Defense Production Act of 1950

THE APPLICANT

2. Applicant is a partnership, comprised as follows:

S. S. Thurmond, Jr.,	Box 183,	Magdalena,	New	Mexico
E. E. Cobb,	Box 193,	"	"	"
J. W. Cobb,	" "	"	"	"
Clinton McCarty,	Box 122,	Canutille,	Texas	

4.(a & b) The applicant will manage exploration project, and experience of partners is as follows:

S. S. Thurmond, Jr. --- (for supervision, engineering, management of project) Graduate of New Mexico School of Mines, B. S. in Geol. Eng'nrg., 1939, eight years varied experience in mining industry as assayer, shift foreman, research dept., asst. to gen'l. foreman; employed by US.S.R.&M. Co., Cerro de Pasco Copper Corp., Phelps Dodge Corp., Burro Mtn. branch, and smaller operations. Currently completing 4 yrs. practice as independent engineer and surveyor (N.M. Lic. No. 720).

E. E. Cobb --- automotive mechanic and miner - general underground experience (Idarado Mining Co., Rosedale Gold Mines, A.S.&R., Magdalena unit) - 15 yrs. experience.

J. W. Cobb --- welder, blacksmith, surface and mine mechanic and maintenance foreman (A.S.&R.Co., Magdalena unit), and well drilling.

Clinton McCarty --- electrician, welder, well driller, stationary power operator (A.S.&R. Co.)

8. Financial Statement: (The property is non-producing prospect) The applicants currently have $1000.- cash, plus time and equipment pledged for exploration. No liabilities.

9. Proposed investment of the applicant is largely in the form of supervision and labor, plus partial supply of equipment and is sufficient to pay for fifty percent of the proposed exploration as detailed in answer to question 23, below. Applicant has a tentative part payment in stock agreement with drilling contractor for churn drilling phase of exploration.

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, New Mexico

THE PROPERTY

10. (a & b) Exploration project shall be on the 'Sixty' Nos. 1, 2, 3, and 4 unpatented mining claims as shown on the map filed herewith. The area within which claims are located is as follows:-
Northwest-quarter, and North-half, southwest-quarter, Sec. 6, T. 3 S., R. 5 W., N.M.P.M. ; Northeast-quarter, southeast-quarter; and east-half, northeast-quarter , Sec. 1, T. 3 S., R. 6 W., N.M.P.M.

12. The 'Sixty' claims are adjoining paved highway, 'U. S. '60" at a distance of 10 miles west from Magdalena, New Mexico, head of spur line of A. T.&S. F. Railroad.

13. Water supply: For exploration drilling would be hauled from Magdalena; or pending permission water might be used from a government owned well 1-1/2 miles west. For future consideration water may be had by wells tapping the adjacent underground basin of the Saint Augustine Plains. On basis of the abovesaid government well, water table should be in vicinity of 300 ft. depth at the mining claims.

14. Existing facilities: None (other than prospect headframe).

15. Shipment of ore would be by truck to rail-head (item 12), thence approximately 200 miles by rail to El Paso, Texas, smelter of A. S. & R. Co.

16. History of property:
(a) Previous exploration has been very limited comprising only a few scattered shallow workings most of which are very old. Search for technical or record reference has been unsuccessful.
(b) The well known Magdalena lead-zinc district of appreciable past production is 10 miles east. (U.S.G.S., Professional Paper 200)
(c) Copy of a limited report previously prepared by applicant is enclosed herewith.

THE EXPLORATION

20. Objective of exploration will be primarily to determine copper ore in a 'secondary enrichment' zone below mineralized 'capping'.

21. Exploration is proposed in three phases, <u>later phases dependent on favorable results of preceding work</u>, as follows:

Phase 1.- Four 'scout' churn drill holes located in and immediately adjacent to mineralized outcrop area to tentative maximum depth of 600 feet. (See Geologic map)-- Requiring three months.

Phase 11. (a) Continuation of existing prospect shaft (54' deep) or new shaft to groundwater table, maximum 350 feet - requiring six months.
(b) 300 feet of drifting - requiring three months.

Total . . . . One year (maximum)

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

THE EXPLORATION (continued)

21. (cont.) Proposed work, description -

Phase 111.- Depending on indications of first holes this phase might precede phase 11. For this phase eight churn-drill holes are planned to establish probable extent and continuity of the ore body encountered in phase 1. Four tentative locations are shown on map, the results of which would dictate distribution of four additional holes. (max. hole depth of 600 ft.) __ time max. of six months.

Total Time for Project: One year and six months — this estimate is based on a minimum scale of operations, whereas actually all practical effort would be made to reduce time for total project to not more than one year.

22. Basis of Project:- A disseminated type of oxidized copper mineralization in the leached outcrop of an intensely fractured and otherwise porous rock gives a reasonable chance of commercial ore in a supergene enrichment zone at or near the ground water table (at approximately 300 ft. depth). Near surface occurrences of chalcocite and covellite in local areas of tight rock (assays 1% to 3% copper) are interpreted as residuals of mineralization leached from predominating fractured portions favorable to higher grade ore. (for additional detail see attached report)

THE REQUIREMENTS AND COSTS

23. Itemized statement: Phase 1.- four @ 600' churn-drill holes.—

(1) to be drilled by contract @ $4.-per ft.(max). . . . $ 9,600
(tentative agreement with contractor is $3.-/ ft. without casing; to 400 ft. $4.-/ft. after 400 ft.; the higher figure is used in estimate to allow for any contingencies encountered in drilling)

(2) supervision, engineering, sampling, sample preparation , and record data - one @ $350./mo. 1,050

(3) assaying and related expense, estimated @ $0.60/ft. . 1,440
(avg. 0.74 determinations/ft., incl. composites)

Total (phase 1 .) . . $12,090

24. (phase I., only) Time Schedule:

From approval of project to beginning of operation allow 30 to 60 days

Treat drilling on a hole unit basis, 20 days per hole actual drilling time, payment on completion of each hole (maximum $2400.)

Total time from beginning of operation three mos. at avg. $4,030/ mo.

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

THE REQUIREMENTS AND COSTS (continued)

23. **Itemized statement for Phase II.:-** (a) Prospect Shaft 350 ft. and (b) Drift 300 ft. --- to require three man crew for under ground and surface a total of 275 shifts each, maximum --- at estimated costs of (a) shaft @ $25./ ft. . .$8,750 Max. (b) drift @ $19./ft. . $5,700 Max. Itemized generally as follows:-

Labor and Supervision: 3 men @ avg. $11.20 ea. x 275 . . . $ 9,240

Equipment: compressor, drills, light hoist and accessories
(to be purchased at approx. cost of . . 5,500
(expected salvage value after 9 mos. . . $3000 min.

Rental of equipment would be <u>alternate</u> to above
at rate of approx. $400/ mo.

Materials and supplies: explosives, fuel, steel & bits, timber, repairs, miscellaneous, and smaller items of equipment . . 2,800
(including assaying)

Total $17,540
less salvage . . . 3,000

14,540

24. (phase II. only) Time and cost schedule:

Minimum initial capital outlay (providing purchase of equipment) approx.. . . . . $7,000
Plus operating expense at rate of per mo. 1,100

(a) Shaft avg. progress per shift worked, 2 ft. . . 175 shifts <u>overall</u>
(b) Drifting " " " " , 3 ft. . . 100 " "

23. PHASE III.- Tentatively eight churn-drill holes in addition to Phase I.

To cost from $2600 to $3,000 (as in phase I.) per hole
X 8 . . . .$20,800 to $24,000
(incl. supervision and assaying)
At avg. rate of one hole each 20 days

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1553X

Date received 6/4/51

Participation

S.S. Thurmond, Jr.
Sixty Copper Prospect Group
Box 183
Magdalena, New Mexico

Name and address of applicant

Date May 15, 1951

FILL IN THIS BLOCK

Date of application May 15, 1951

Estimated cost Phase I.... $12,090 ($50,630 Total)
Phase II... 14,540
Phase III..- 24,000 Max.

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine Socorro County, New Mexico (10 Miles west of Magdalena, N. M.)
in Sec. 6, Tshp. 3 south, Range 5 west, N.M.P.M.

Date of filing MF-100 no

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? Partnership
*2. If a partnership, state names and addresses of partners. See page 1, attached
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. See page 1, attached
*5. Are you the owner or the lessee of the property? Owner
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. page 1, attached
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?
See page 2, attached

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. On page 2 attached

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any. 'Sixty' Copper Prospect

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. On page 2 attached

*13. State source and quantity of water available for operations and its sufficiency at all seasons. State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. See page 2 attached

15. State in detail how the ore could be shipped and how and where milled. " " " "

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. " " " "

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

(*a*) If mine is in production, furnish the following information: Not in production

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? See attached

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each. See attached

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent.

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

"Sixty" Copper Prospect Group
(Name of company)

By /s/ S. S. Thurmond, Jr.
(Signature of authorized official)

May 29, 1951
(Date)

Engineer
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT

pursuant to Mineral Order 5, under Defense Production Act of 1950

THE APPLICANT

2. Applicant is a partnership, comprised as follows:

S. S. Thurmond, Jr.,	Box 183,	Magdalena,	New Mexico	
E. E. Cobb,	Box 193,	"	"	"
J. W. Cobb,	" "	"	"	"
Clinton McCarty,	Box 122,	Canutillo,	Texas	

4. (a&b) The Applicant will manage exploration project, and experience of partners is as follows:

S. S. Thurmond, Jr.---(for supervision, engineering, management of project) Graduate of New Mexico School of Mines, B. S. in Geol. Eng'nrg., 1939, eight years varied experience in mining industry as assayer, shift foreman, research dept., asst. to gen'l foreman; employed by US.S.R.&M. Co., Cerro de Pasco Copper Corp., Phelps Dodge Corp., Burro Mtn. branch, and smaller operations. Currently completing 4 yrs. practice as independent engineer and surveyor (N.M. Lic No. 720).

E. E. Cobb----automotive mechanic and miner-general underground experience (Idarado Mining Co., Rosedale Gold Mines, A.S.&R., Magdalena unit)-15 yrs. experience.

J. W. Cobb---welder, blacksmith, surface and mine mechanic and maintenance foreman (A.S.&R. Co., Magdalena unit), and well drilling.

Clinton McCarty---electrician, welder, well driller, stationary power operator (A.S.&R. Co.)

8. Financial Statement: (The property is non-producing prospect) The applicants currently have $1000.-cash, plus time and equipment pledged for exploration. No liabilities.

9. Proposed investment of the applicant is largely in the form of supervision and labor, plus partial supply of equipment and is sufficient to pay for fifty percent of the proposed exploration as detailed in answer to question 23, below. Applicant has a tentative part payment in stock agreement with drilling contractor for churn drilling phase of exploration.

Sixty Copper Prospect Group/S. S. Thurmond, Jr.
Box 183, Magdalena, New Mexico

THE PROPERTY

10. (a & b) Exploration project shall be on the "Sixty" Nos. 1, 2, 3, and 4 unpatented mining claims as shown on the map filed herewith. The area within which claims are located is as follows:-
Northwest-quarter, and North-half, southwest-quarter, Sec. 6, T. 3 S., R. 5 W., N.M.P.M.; Northesat-quarter, southeast-quarter; and east-half, northeast-quarter, Sec. 1, T. 3 S., R. 6 W., N.M.P.M.

12. The "Sixty" claims are adjoining paved highway, "U. S. "60" at a distance of 10 miles west from Magdalena, New Mexico, head of spur line of A. T. & S. F. Railroad.

13. Water supply: For exploration drilling would be hauled from Magdalena; or pending permission water might be used from a government owned well 1-½ miles west. For future consideration water may be had by wells tapping the adjacent underground basin of the Saint Augustine Plains. On basis of the above said government well, water table should be in. vicinity of 300 ft. depth at the mining claims.

14. Existing facilities: None (other than prospect headframe).

15. Shipment of ore would be by truck to rail-head (item 12), thence approximately 200 miles by rail to El Paso, Texas, smalter of A.S.&R. Co.

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(a) Previous exploration has been very limited comprising only a few scattered shallow workings most of which are very old. Search for technical or record reference has been unsuccessful.
(b) The well known Magdalena lead-zinc district of appreciable past production is 10 miles east. (U.S.G.S., Professional Paper 200)
(c) Copy of a limited report previously prepared by applicant is enclosed herewith.

THE EXPLORATION

20. Objective of exploration will be primarily to determine copper ore in a "secondary enrichment" zone below mineralized "capping".

21. Exploration is proposed in three phases, <u>later phases dependent on favorable results of preceding work</u>, as follows:

Phase 1.- Four "scout" churn drill holes located in and immediately adjacent to mineralized outcrop area to tentative maximum depth of 600 feet. (See Geologic map)--Requiring three months.

Phase 11. (a) Continuation of existing prospect shaft (54' deep) or new shaft to groundwater table, maximum 350 feet- requiring six months.
(b) 300 feet of drifting-requiring three months.

Total . . . . .One year (maximum)

Sixty Copper Prospect Group/S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

THE EXPLORATION (continued)

21. (cont.) Proposed work, description-

Phase 111.-Depending on indications of first holes this phase might precede phase 11. For this phase eight churn-drill holes are planned to establish probable extent and continuity of the ore body encountered in phase 1. Four tentative locations are shown on map, the results of which would dictate distribution of four additional holes. (max. hole depth of 600 ft.)--time max. of six months.

Total Time for Project: One year and six months---this estimate is based on a minimum scale of operations, whereas actually all practical effort would be made to reduce time for total project to not more than one year.

22. Basis of Project:-A disseminated type of oxidized copper mineralization in the leached outcrop of an intensely fractured and otherwise porous rock gives a reasonable chance of commercial ore in a supergene enrichment zone at or near the ground water table (at approximately 300 ft. depth). Near surface occurrences of chalcocite and covellite in local areas of tight rock (assays 1% and 3% copper) are interpreted as residuals of mineralization leached from predominating fractured portions favorable to higher grade ore. (for additional detail see attached report)

THE REQUIREMENTS AND COSTS

23. Itemized statement: Phase 1.-four @ 600' churn-drill holes.---

(1) to be drilled by contract @ $4.-per ft. (max)..... $9,600
(tentative agreement with contractor is $3.-/ft. without casing; to 400 ft. $4.-/ft. after 400 ft.; the higher figure is used in estimate to allow for any contingencies encountered in drilling)

(2) supervision, engineering, sampling, sample preparation, and record data-one @ $350./mo. 1,050

(3) assaying and related expense, estimated @ $0.60/ft. . 1,440
(avg. 0.74 determinations/ft., incl. composites)

Total (phase 1.) . . . $ 12,090

24. (phase I., only) Time Schedule:

From approval of project to beginning of operation allow 30 to 60 days

Treat drilling on a hole unit basis, 20 days per hole actual drilling time, payment on completion of each hole (maximum $2400.)

Total time from beginning of operation three mos. at avg. $4,030/mo.

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

THE REQUIREMENTS AND COSTS (continued)

23. Itemized statement for Phase II.:- (a) Prospect Shaft 350 ft. and (b) Drift 300 ft. --- to require three man crew for under ground and surface a total of 275 shifts each, maximum --- at estimated costs of (a) shaft @ $25./ft.....$8,750 Max. (b) drift @ $19./ft. .$5,700 Max. Itemized generally as follows:-

Labor and Supervision: 3 men @ avg. $11.20 ea. x 275 . . .$9,240

Equipment: compressor, drills, light hoist and accessories
(to be purchased at approx. cost of . . 5,500
(expected salvage value after 9 mos. . . $3000 min.

Rental of equipment would be alternate to above
at rate of approx. $400/mo.

Materials and supplies: explosives, fuel, steel & bits, timber, repairs, miscellaneous, and smaller items of equipment . 2,800
(including assaying)

Total $17,540
less salvage. . . 3,000

14,540

24. (phase II. only) Time and cost schedule:

Minimum initial capital outlay (providing purchase of equipment.) approx.. . . . . $ 7,000
Plus operating expense at rate of per mo. 1,100

(a) Shaft avg. progress per shift worked, 2 ft. . . 175 shifts overall
(b) Drifting " " " " 3 " 100 " "

23. Phase III.- Tentatively eight churn-drill holes in addition to Phase I.

To cost from $2600 to $3,000 (as in phase I.) per hole
X 8 . . .$20,800 to $24,000
(incl. supervision and assaying)
At avg. rate of one hole each 20 days

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1553X

Date received 6/4/51

Participation

S.S. Thurmond, Jr.
Sixty Copper Prospect Group
Box 183
Magdalena, New Mexico

Name and address of applicant

Date May 15, 1951

FILL IN THIS BLOCK

Date of application May 15, 1951

Estimated cost Phase I.... $12,090 ($50,630 Total)
Phase II... 14,540
Phase III..- 24,000 Max.

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine Socorro County, New Mexico (10 Miles west of Magdalena, N. M.)
in Sec. 6, Tshp. 3 south, Range 5 west, N.M.P.M.

Date of filing MF-100 no

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? Partnership

*2. If a partnership, state names and addresses of partners. See page 1, attached

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. See page 1, attached

*5. Are you the owner or the lessee of the property? Owner

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None

7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. page 1, attached

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? See page 2, attached

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. On page 2 attached

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any. 'Sixty' Copper Prospect

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. On page 2 attached

*13. State source and quantity of water available for operations and its sufficiency at all seasons. State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. See page 2 attached

15. State in detail how the ore could be shipped and how and where milled. " " " "

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. " " " "

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

(*a*) If mine is in production, furnish the following information: Not in production

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? See attached

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each. See attached

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent.

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

"Sixty" Copper Prospect Group
(Name of company)

By /s/ S. S. Thurmond, Jr.
(Signature of authorized official)

May 29, 1951
(Date)

Engineer
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT

pursuant to Mineral Order 5, under Defense Production Act of 1950

THE APPLICANT

2. Applicant is a partnership, comprised as follows:

S. S. Thurmond, Jr.,	Box 183,	Magdalena,	New	Mexico
E. E. Cobb,	Box 193,	"	"	"
J. W. Cobb,	" "	"	"	"
Clinton McCarty,	Box 122,	Canutillo,	Texas	

4. (a&b) The Applicant will manage exploration project, and experience of partners is as follows:

S. S. Thurmond, Jr.---(for supervision, engineering, management of project) Graduate of New Mexico School of Mines, B. S. in Geol. Eng'nrg., 1939, eight years varied experience in mining industry as assayer, shift foreman, research dept., asst. to gen'l foreman; employed by US.S.R.&M. Co., Cerro de Pasco Copper Corp., Phelps Dodge Corp., Burro Mtn. branch, and smaller operations. Currently completing 4 yrs. practice as independent engineer and surveyor (N.M. Lic No. 720).

E. E. Cobb----automotive mechanic and miner-general underground experience (Idarado Mining Co., Rosedale Gold Mines, A.S.&R., Magdalena unit)- 15 yrs. experience.

J. W. Cobb---welder, blacksmith, surface and mine mechanic and maintenance foreman (A.S.&R. Co., Magdalena unit), and well drilling.

Clinton McCarty---electrician, welder, well driller, stationary power operator (A.S.&R. Co.)

8. Financial Statement: (The property is non-producing prospect) The applicants currently have $1000.-cash, plus time and equipment pledged for exploration. No liabilities.

9. Proposed investment of the applicant is largely in the form of supervision and labor, plus partial supply of equipment and is sufficient to pay for fifty percent of the proposed exploration as detailed in answer to question 23, below. Applicant has a tentative part payment in stock agreement with drilling contractor for churn drilling phase of exploration.

Sixty Copper Prospect Group/S. S. Thurmond, Jr.
Box 183, Magdalena, New Mexico

THE PROPERTY

10. (a & b) Exploration project shall be on the "Sixty" Nos. 1, 2, 3, and 4 unpatented mining claims as shown on the map filed herewith. The area within which claims are located is as follows:-
Northwest-quarter, and North-half, southwest-quarter, Sec. 6, T. 3 S., R. 5 W., N.M.P.M.; Northesat-quarter, southeast-quarter; and east-half, northeast-quarter, Sec. 1, T. 3 S., R. 6 W., N.M.P.M.

12. The "Sixty" claims are adjoining paved highway, "U. S. "60" at a distance of 10 miles west from Magdalena, New Mexico, head of spur line of A. T. & S. F. Railroad.

13. Water supply: For exploration drilling would be hauled from Magdalena; or pending permission water might be used from a government owned well 1-½ miles west. For future consideration water may be had by wells tapping the adjacent underground basin of the Saint Augustine Plains. On basis of the above said government well, water table should be in. vicinity of 300 ft. depth at the mining claims.

14. Existing facilities: None (other than prospect headframe).

15. Shipment of ore would be by truck to rail-head (item 12), thence approximately 200 miles by rail to El Paso, Texas, smalter of A.S.&R. Co.

16. History of property:
(a) Previous exploration has been very limited comprising only a few scattered shallow workings most of which are very old. Search for technical or record reference has been unsuccessful.
(b) The well known Magdalena lead-zinc district of appreciable past production is 10 miles east. (U.S.G.S., Professional Paper 200)
(c) Copy of a limited report previously prepared by applicant is enclosed herewith.

THE EXPLORATION

20. Objective of exploration will be primarily to determine copper ore in a "secondary enrichment" zone below mineralized "capping".

21. Exploration is proposed in three phases, <u>later phases dependent on favorable results of preceding work</u>, as follows:

Phase 1.- Four "scout" churn drill holes located in and immediately adjacent to mineralized outcrop area to tentative maximum depth of 600 feet. (See Geologic map)—Requiring three months.

Phase 11. (a) Continuation of existing prospect shaft (54' deep) or new shaft to groundwater table, maximum 350 feet- requiring six months.
(b) 300 feet of drifting-requiring three months.
Total . . . . . <u>One year (maximum)</u>

Sixty Copper Prospect Group/S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

THE EXPLORATION (continued)

21. (cont.) Proposed work, description-

Phase 111.-Depending on indications of first holes this phase might precede phase 11. For this phase eight churn-drill holes are planned to establish probable extent and continuity of the ore body encountered in phase 1. Four tentative locations are shown on map, the results of which would dictate distribution of four additional holes. (max. hole depth of 600 ft.)--time max. of six months.

Total Time for Project: One year and six months---this estimate is based on a minimum scale of operations, whereas actually all practical effort would be made to reduce time for total project to not more than one year.

22. Basis of Project:-A disseminated type of oxidized copper mineralization in the leached outcrop of an intensely fractured and otherwise porous rock gives a reasonable chance of commercial ore in a supergene enrichment zone at or near the ground water table (at approximately 300 ft. depth). Near surface occurrences of chalcocite and covellite in local areas of tight rock (assays 1% and 3% copper) are interpreted as residuals of mineralization leached from predominating fractured portions favorable to higher grade ore. (for additional detail see attached report)

THE REQUIREMENTS AND COSTS

23. Itemized statement: Phase 1.-four @ 600' churn-drill holes.---

(1) to be drilled by contract @ $4.-per ft. (max)..... $9,600
(tentative agreement with contractor is $3.-/ft. without casing; to 400 ft. $4.-/ft. after 400 ft.; the higher figure is used in estimate to allow for any contingencies encountered in drilling)

(2) supervision, engineering, sampling, sample preparation, and record data-one @ $350./mO. 1,050

(3) assaying and related expense, estimated @ $0.60/ft. . 1,440
(avg. 0.74 determinations/ft., incl. composites)

Total (phase 1.)1 . . . $ 12,090

24. (phase I., only) Time Schedule:

From approval of project to beginning of operation allow 30 to 60 days

Treat drilling on a hole unit basis, 20 days per hole actual drilling time, payment on completion of each hole (maximum $2400.)

Total time from beginning of operation three mos. at avg. $4,030/mo.

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

THE REQUIREMENTS AND COSTS (continued)

23. Itemized statement for Phase II.:- (a) Prospect Shaft 350 ft. and (b) Drift 300 ft. --- to require three man crew for under ground and surface a total of 275 shifts each, maximum --- at estimated costs of (a) shaft @ $25./ft.....$8,750 Max. (b) drift @ $19./ft. .$5,700 Max. Itemized generally as follows:-

Labor and Supervision: 3 men @ avg. $11.20 ea. x 275 . . .$9,240

Equipment: compressor, drills, light hoist and accessories
(to be purchased at approx. cost of . . 5,500
(expected salvage value after 9 mos. . . $3000 min.

Rental of equipment would be alternate to above
at rate of approx. $400/mo.

Materials and supplies: explosives, fuel, steel & bits, timber, repairs, miscellaneous, and smaller items of equipment . . 2,800
(including assaying)

Total $17,540
less salvage. . . 3,000

14,540

24. (phase II. only) Time and cost schedule:

Minimum initial capital outlay (providing purchase of equipment.) approx.. . . . . $ 7,000
Plus operating expense at rate of per mo. 1,100

(a) Shaft avg. progress per shift worked, 2 ft. . . 175 shifts overall
(b) Drifting " " " " 3 " 100 " "

23. Phase III.- Tentatively eight churn-drill holes in addition to Phase I.

To cost from $2600 to $3,000 (as in phase I.) per hole
X 8 . . .$20,800 to $24,000
(incl. supervision and assaying)
At avg. rate of one hole each 20 days

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1553X

Date received 6-4-51

Participation

S. S. Thurmond, Jr.,
Sixty Copper Prospect Group
Box 183
Magdalena, New Mexico

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 4 - 1951
LANDON F. STROBEL
Executive Secretary

Name and address of applicant

Date May 15, 1951

FILL IN THIS BLOCK

Date of application May 15, 1951

Estimated cost Phase I. . .$12,090 ($50,630 Total)
Phase II. . . 14,540
Phase III . 24,000 MAX.

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine Socorro County, New Mexico (10 miles west of Magdalena, N. M.)
in Sec. 6, Tshp. 3 south, Range 5 west, N.M.P.M.

Date of filing MF-100 no

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? A Partnership
*2. If a partnership, state names and addresses of partners. (see page 1, attached)
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. (see page 1, attached)
*5. Are you the owner or the lessee of the property? Owner
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. (pg. 1, attached)
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? (See page 2, attached)

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. on pg. 2 attached supplement

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any. 'Sixty' Copper Prospect

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. on pg 2 attached

*13. State source and quantity of water available for operations and its sufficiency at all seasons. State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled. See pg 2 attached

*16. History: " " "

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. " " "

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

(*a*) If mine is in production, furnish the following information: Not in production

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? See attached supplement

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each. See attached supplement

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent.

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

'Sixty' Copper Prospect Group (Name of company) By [signature] (Signature of authorized official)

May 29, 1951 (Date) Engineer (Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT

pursuant to Mineral Order 5, under Defense Production Act of 1950

THE APPLICANT

2. Applicant is a partnership, comprised as follows:

S. S. Thurmond, Jr.,	Box 183,	Magdalena,	New	Mexico
E. E. Cobb,	Box 193,	"	"	"
J. W. Cobb,	" "	"	"	"
Clinton McCarty,	Box 122,	Canutillo,	Texas	

4.(a & b) The applicant will manage exploration project, and experience of partners is as follows:

S. S. Thurmond, Jr. --- (for supervision, engineering, management of project) Graduate of New Mexico School of Mines, B. S. in Geol. Eng'nrg., 1939, eight years varied experience in mining industry as assayer, shift foreman, research dept., asst. to gen'l. foreman; employed by US.S.R.&M. Co., Cerro de Pasco Copper Corp., Phelps Dodge Corp., Burro Mtn. branch, and smaller operations. Currently completing 4 yrs. practice as independent engineer and surveyor (N.M. Lic. No. 720).

E. E. Cobb --- automotive mechanic and miner - general underground experience (Idarado Mining Co., Rosedale Gold Mines, A.S.&R., Magdalena unit) - 15 yrs. experience.

J. W. Cobb --- welder, blacksmith, surface and mine mechanic and maintenance foreman (A.S.&R.Co., Magdalena unit), and well drilling.

Clinton McCarty --- electrician, welder, well driller, stationary power operator (A.S.&R. Co.)

8. Financial Statement: (The property is non-producing prospect) The applicants currently have $1000.- cash, plus time and equipment pledged for exploration. No liabilities.

9. Proposed investment of the applicant is largely in the form of supervision and labor, plus partial supply of equipment and is sufficient to pay for fifty percent of the proposed exploration as detailed in answer to question 23, below. Applicant has a tentative part payment in stock agreement with drilling contractor for churn drilling phase of exploration.

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, New Mexico

THE PROPERTY

10. (a & b) Exploration project shall be on the 'Sixty' Nos. 1, 2, 3, and 4 unpatented mining claims as shown on the map filed herewith. The area within which claims are located is as follows:-
Northwest-quarter, and North-half, southwest-quarter, Sec. 6, T. 3 S., R. 5 W., N.M.P.M. ; Northeast-quarter, southeast-quarter; and east-half, northeast-quarter , Sec. 1, T. 3 S., R. 6 W., N.M.P.M.

12. The 'Sixty' claims are adjoining paved highway, "U. S. '60" at a distance of 10 miles west from Magdalena, New Mexico, head of spur line of A. T.&S. F. Railroad.

13. Water supply: For exploration drilling would be hauled from Magdalena; or pending permission water might be used from a government owned well 1-1/2 miles west. For future consideration water may be had by wells tapping the adjacent underground basin of the Saint Augustine Plains. On basis of the abovesaid government well, water table should be in vicinity of 300 ft. depth at the mining claims.

14. Existing facilities: None (other than prospect headframe).

15. Shipment of ore would be by truck to rail-head (item 12), thence approximately 200 miles by rail to El Paso, Texas, smelter of A. S. & R. Co.

16. History of property:
(a) Previous exploration has been very limited comprising only a few scattered shallow workings most of which are very old. Search for technical or record reference has been unsuccessful.
(b) The well known Magdalena lead-zinc district of appreciable past production is 10 miles east. (U.S.G.S., Professional Paper 200)
(c) Copy of a limited report previously prepared by applicant is enclosed herewith.

THE EXPLORATION

20. Objective of exploration will be primarily to determine copper ore in a 'secondary enrichment' zone below mineralized 'capping'.

21. Exploration is proposed in three phases, <u>later phases dependent on favorable results of preceding work</u>, as follows:

Phase 1.- Four 'scout' churn drill holes located in and immediately adjacent to mineralized outcrop area to tentative maximum depth of 600 feet. (See Geologic map)-- Requiring three months.

Phase 11. (a) Continuation of existing prospect shaft (54' deep) or new shaft to groundwater table, maximum 350 feet - requiring six months.
(b) 300 feet of drifting - requiring three months.

Total . . . . One year (maximum)

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

THE EXPLORATION (continued)

21. (cont.) Proposed work, description -

Phase 111.- Depending on indications of first holes this phase might precede phase 11. For this phase eight churn-drill holes are planned to establish probable extent and continuity of the ore body encountered in phase 1. Four tentative locations are shown on map, the results of which would dictate distribution of four additional holes. (max. hole depth of 600 ft.) __ time max. of six months.

Total Time for Project: One year and six months — this estimate is based on a minimum scale of operations, whereas actually all practical effort would be made to reduce time for total project to not more than one year.

22. Basis of Project:- A disseminated type of oxidized copper mineralization in the leached outcrop of an intensely fractured and otherwise porous rock gives a reasonable chance of commercial ore in a supergene enrichment zone at or near the ground water table (at approximately 300 ft. depth). Near surface occurrences of chalcocite and covellite in local areas of tight rock (assays 1% to 3% copper) are interpreted as residuals of mineralization leached from predominating fractured portions favorable to higher grade ore. (for additional detail see attached report)

THE REQUIREMENTS AND COSTS

23. Itemized statement: Phase 1.- four @ 600' churn-drill holes.---

(1) to be drilled by contract @ $4.-per ft.(max). . . . $ 9,600
(tentative agreement with contractor is $3.-/ ft. without casing; to 400 ft. $4.-/ft. after 400 ft.; the higher figure is used in estimate to allow for any contingencies encountered in drilling)

(2) supervision, engineering, sampling, sample preparation , and record data - one @ $350./mo. 1,050

(3) assaying and related expense, estimated @ $0.60/ft. . 1,440
(avg. 0.74 determinations/ft., incl. composites)

Total (phase 1 .) . . $12,090

24. (phase I., only) Time Schedule:

From approval of project to beginning of operation allow 30 to 60 days

Treat drilling on a hole unit basis, 20 days per hole actual drilling time, payment on completion of each hole (maximum $2400.)

Total time from beginning of operation three mos. at avg. $4,030/ mo.

Sinty Copper Prospect Group/ G. S. Thurmond, Jr.
Box 133, Magdalena, N. M.

THE REQUIREMENTS AND COSTS (continued)

23. Itemized statement for Phase II.:- (a) Prospect Shaft 350 ft. and (b) Drift 300 ft. --- to require three man crew for under ground and surface a total of 275 shifts each, maximum --- at estimated costs of (a) shaft @ $25./ ft. . . $8,750 Max. (b) drift @ $19./ft. . $5,700 Max. Itemized generally as follows:-

Labor and Supervision: 3 men @ avg. $11.20 ea. x 275 . . .	$ 9,240
Equipment: compressor, drills, light hoist and accessories (to be purchased at approx. cost of . .	5,500
(expected salvage value after 9 mos. . . $3000 min.	
Rental of equipment would be alternate to above at rate of approx. $400/ mo.	
Materials and supplies: explosives, fuel, steel & bits, timber, repairs, miscellaneous, and smaller items of equipment . . (including assaying)	2,800
Total	17,540
less salvage	3,000
	14,540

24. (phase II. only) Time and cost schedule:

Minimum initial capital outlay (providing purchase of equipment) approx..	7,000
Plus operating expense at rate of per mo.	1,100

(a) Shaft avg. progress per shift worked, 2 ft. . . 175 shifts overall
(b) Drifting " " " , 3 ft. . . 100 " "

23. PHASE III.- Tentatively eight churn-drill holes in addition to Phase I.

To cost from $2600 to $3,000 (as in phase I.) per hole
X 8 . . . . $20,800 to $24,000
(incl. supervision and assaying)
At avg. rate of one hole each 20 days

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma 1553X

Date received 6-4-51

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 4 - 1951
LANDON F. STROBEL
Executive Secretary

Name and address of applicant

S. S. Thurmond, Jr.,
Silky Copper Prospect Group
Box 163
Magdalena, New Mexico

Date May 15, 1951

FILL IN THIS BLOCK

Date of application May 15, 1951

Estimated cost Phase I. . . $12,090 ($50,630 Total)
Phase II. . . 14,540
Phase III . 24,000 MAX.

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine Socorro County, New Mexico (10 miles west of Magdalena, N. M.)
in Sec. 6, Tshp. 3 south, Range 5 west, N.M.P.M.

Date of filing MF-100 no

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? a Partnership (see page 1, attached)
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (a) the applicant and (b) the person or persons who will manage the project. (see page 2, attached)
*5. Are you the owner or the lessee of the property? Owner
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract. (pg. 1, attached)

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? (see page 4, attached)

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. on pg. 2 attached supplement

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any. 'Sixty' Copper Prospect

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. on pg 2 attached

*13. State source and quantity of water available for operations and its sufficiency at all seasons. State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. See pg 2 attached

15. State in detail how the ore could be shipped and how and where milled. " " "

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. " " "

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

(*a*) If mine is in production, furnish the following information: Not in production

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? See attached supplement

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each. See attached supplement

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent.

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

'Sixty' Copper Prospect Group (Name of company) — By [signature] (Signature of authorized official)

May 29, 1951 (Date) — Engineer (Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, N. M.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT

pursuant to Mineral Order 5, under Defense Production Act of 1950

THE APPLICANT

2. Applicant is a partnership, comprised as follows:

S. S. Thurmond, Jr.,	Box 183,	Magdalena,	New Mexico
E. E. Cobb,	Box 193,	"	" "
J. W. Cobb,	" "	"	" "
Clinton McCarty,	Box 122,	Canutillo,	Texas

4.(a & b) The applicant will manage exploration project, and experience of partners is as follows:

S. S. Thurmond, Jr. --- (for supervision, engineering, management of project) Graduate of New Mexico School of Mines, B. S. in Geol. Eng'nrg., 1939, eight years varied experience in mining industry as assayer, shift foreman, research dept., asst. to gen'l. foreman; employed by US.S.R.&M. Co., Cerro de Pasco Copper Corp., Phelps Dodge Corp., Burro Mtn. branch, and smaller operations. Currently completing 4 yrs. practice as independent engineer and surveyor (N.M. Lic. No. 720).

E. E. Cobb --- automotive mechanic and miner - general underground experience (Idarado Mining Co., Rosedale Gold Mines, A.S.&R., Magdalena unit) - 15 yrs. experience.

J. W. Cobb --- welder, blacksmith, surface and mine mechanic and maintenance foreman (A.S.&M.Co., Magdalena unit), and well drilling.

Clinton McCarty --- electrician, welder, well driller, stationary power operator (A.S.&M. Co.)

8. Financial Statement: (The property is non-producing prospect) The applicants currently have $1000.- cash, plus time and equipment pledged for exploration. No liabilities.

9. Proposed investment of the applicant is largely in the form of supervision and labor, plus partial supply of equipment and is sufficient to pay for fifty percent of the proposed exploration as detailed in answer to question 23, below. Applicant has a tentative part payment in stock agreement with drilling contractor for churn drilling phase of exploration.

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 183, Magdalena, New Mexico

THE PROPERTY

10. (a & b) Exploration project shall be on the 'Sixty' Nos. 1, 2, 3, and 4 unpatented mining claims as shown on the map filed herewith. The area within which claims are located is as follows:-
Northwest-quarter, and North-half, southwest-quarter, Sec. 6, T. 3 S., R. 5 W., N.M.P.M. ; Northeast-quarter, southeast-quarter; and east-half, northeast-quarter , Sec. 1, T. 3 S., R. 6 W., N.M.P.M.

12. The 'Sixty' claims are adjoining paved highway, "U. S. '60" at a distance of 10 miles west from Magdalena, New Mexico, head of spur line of A. T.&S. F. Railroad.

13. Water supply: For exploration drilling would be hauled from Magdalena; or pending permission water might be used from a government owned well 1-1/2 miles west. For future consideration water may be had by wells tapping the adjacent underground basin of the Saint Augustine Plains. On basis of the abovesaid government well, water table should be in vicinity of 300 ft. depth at the mining claims.

14. Existing facilities: None (other than prospect headframe).

15. Shipment of ore would be by truck to rail-head (item 12), thence approximately 200 miles by rail to El Paso, Texas, smelter of A. S. & R. Co.

16. History of property:
(a) Previous exploration has been very limited comprising only a few scattered shallow workings most of which are very old. Search for technical or record reference has been unsuccessful.
(b) The well known Magdalena lead-zinc district of appreciable past production is 10 miles east. (U.S.G.S., Professional Paper 200)
(c) Copy of a limited report previously prepared by applicant is enclosed herewith.

THE EXPLORATION

20. Objective of exploration will be primarily to determine copper ore in a 'secondary enrichment' zone below mineralized 'capping'.

21. Exploration is proposed in three phases, <u>later phases dependent on favorable results of preceding work</u>, as follows:

Phase 1.- Four 'scout' churn drill holes located in and immediately adjacent to mineralized outcrop area to tentative maximum depth of 600 feet. (See Geologic map)-- Requiring three months.

Phase 11. (a) Continuation of existing prospect shaft (54' deep) or new shaft to groundwater table, maximum 350 feet - requiring six months.
(b) 300 feet of drifting - requiring three months.

Total . . . . One year (maximum)

Sinty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 103, Magdalena, N. M.

THE EXPLORATION (continued)

21. (cont.) Proposed work, description -

Phase 111.- Depending on indications of first holes this phase might procede phase 11. For this phase eight churn-drill holes are planned to establish probable extent and continuity of the ore body encountered in phase 1. Four tentative locations are shown on map, the results of which would dictate distribution of four additional holes. (max. hole depth of 600 ft.) __ time max. of six months.

Total Time for Project: One year and six months -- this estimate is based on a minimum scale of operations, whereas actually all practical effort would be made to reduce time for total project to not more than one year.

22. Basis of Project:- A disseminated type of oxidized copper mineralization in the leached outcrop of an intensely fractured and otherwise porous rock gives a reasonable chance of commercial ore in a supergene enrichment zone at or near the ground water table (at approximately 300 ft. depth). Near surface occurrences of chalcocite and covellite in local areas of tight rock (assays 1% to 3% copper) are interpreted as residuals of mineralization leached from predominating fractured portions favorable to higher grade ore. (for additional detail see attached report)

THE REQUIREMENTS AND COSTS

23. Itemized statement: Phase 1.- four @ 600' churn-drill holes.---

(1) to be drilled by contract @ $4.-per ft.(max). . . . $ 9,600
(tentative agreement with contractor is $3.-/ ft. without casing; to 400 ft. $4.-/ft. after 400 ft.; the higher figure is used in estimate to allow for any contingencies encountered in drilling)

(2) supervision, engineering, sampling, sample preparation , and record data - one @ $350./mo. 1,050

(3) assaying and related expense, estimated @ $0.60/ft. . 1,440
(avg. 0.74 determinations/ft., incl. composites)

Total (phase 1 .) . . $12,090

24. (phase I., only) Time Schedule:

From approval of project to beginning of operation allow 30 to 60 days

Treat drilling on a hole unit basis, 20 days per hole actual drilling time, payment on completion of each hole (maximum $2400.)

Total time from beginning of operation three mos. at avg. $4,030/ mo.

Sixty Copper Prospect Group/ S. S. Thurmond, Jr.
Box 133, Magdalena, N. M.

THE REQUIREMENTS AND COSTS (continued)

23. Itemized statement for Phase II.:- (a) Prospect Shaft 350 ft. and (b) Drift 300 ft. --- to require three man crew for under ground and surface a total of 275 shifts each, maximum --- at estimated costs of (a) shaft [illegible]25./ ft. . .$8,750 Max. (b) drift [illegible]19./ft. . $5,700 Max. Itemized generally as follows:-

Labor and Supervision: 3 men @ avg. $11.20 ea. x 275 . . . $ 9,240

Equipment: compressor, drills, light hoist and accessories
(to be purchased at approx. cost of . . 5,500
(expected salvage value after 9 mos. . . $3000 min.

Rental of equipment would be alternate to above
at rate of approx. $400/ mo.

Materials and supplies: explosives, fuel, steel & bits, timber, repairs, miscellaneous, and smaller items of equipment . . 2,800
(including assaying)

Total $17,540
less salvage 3,000

14,540

24. (phase II. only) Time and cost schedule:

Minimum initial capital outlay (providing purchase of equipment) approx.. . . . . $7,000
Plus operating expense at rate of per mo. 1,100

(a) Shaft avg. progress per shift worked, 2 ft. . . 175 shifts overall
(b) Drifting " " " , 3 ft. . . 100 " "

23. PHASE III.- Tentatively eight churn-drill holes in addition to Phase I.

To cost from $2600 to $3,000 (as in phase I.) per hole
X 8 . . . .$20,800 to $24,000
(incl. supervision and assaying)
At avg. rate of one hole each 20 days

dma 1553X

- The 'SIXTY' COPPER PROSPECT -

west of Magdalena, N. M.

A preliminary report of November, 1950
amended and revised in May, 1951

---

by: S. S. Thurmond, Jr.

of The 'Sixty' Copper Prospect Group

- The 'Sixty' Copper Prospect -

west of Magdalena, N. M.

INTRODUCTION

The 'Sixty' mining prospect comprising four unpatented claims is located adjacent to U. S. Highway '60' ten miles west of the railhead town of Magdalena, New Mexico, and embraces the summit of a chain of low hills extending south and east from 'Tres Montosos' Peaks. The west quarter-section corner of section 6, Township 3 south, Range 5 west, N. M. P. M., Socorro County, N. M. is near the center of claim #1 and the other claims are adjoining.

SUMMARY

The 'Sixty' claims encompass a low rounded hill slightly more than one-quarter mile in diameter which is largely composed of a fine grained, highly siliceous, massive rock, tentatively considered a type of rhyolite. This formation is highly fractured and otherwise permeable. Prospect development consisting of shallow surface excavations and prospect shaft to fifty foot depth is in a six-hundred-foot diameter area showing a disseminated type of oxidized copper mineralization. Character or relations of assocciated surrounding formations of a number of felsic igneous rocks ranging from near-granitic to micro-crystalline in texture is as yet poorly known.

In addition to the normal copper minerals copper-lead vanadates are found in appreciable quantity to limited extent of exploration in the highly leached oxide zone. Near surface occurences of the sulphides, chalcocite and covellite, in local reefs of tight rock are interpreted as residuals of the mineralization which has been leached from the predominating fractured portions favorable to higher grade ore. Values ranging to 3.9% copper are indicated in zones of restrained leaching, but average values for prospect shaft excavation to 48 feet were:- 0.3 ozs. silver, 0.8% copper, 1.2% lead per ton.

CONCLUSIONS

Bearing in mind the superficial extent of exploration, lack of discovery of a 'gossan', or a very appreciable iron stain, as indicators, and with the absence to date of a theory as to origin of mineralization; the opinion is yet offered that sufficient is found to suggest possibilities of commercial scale values. The manner of occurrence of the copper sulphides in conjunction with leached appearance and abundant fracture voids in the 'ore rock' is believed to be adequate basis for expecting an appreciable zone of supergene or secondary enrichment ore near the ground water level at a depth of not more than 350 feet.

The measure of risk against prospective values in proving a deposit of the considered type is inherently favorable in that the expense neccessary to yield definite information is comparatively small. The initial expense can be closely fixed in advance, and each additional phase of exploration is expected to be justified by favorable results of the prededing operation.

CONCLUSIONS (continued)

It is proposed to prospect below the copper bearing outcrop first by means of one or more churn-drill holes to depth of 600 feet at an overall maximum cost of $3000 each to prove or disprove a probability of ore existence. Though there is some possibility that indications to be had from the individual drill hole will be indefinite it is felt more likely that one or at most two holes may define rather exactly either the lack of promise or the basis to fully warrant additional procedure.

With an indicated probability of valuable ore thus obtained it would become expedient to extend churn-drilling to include about four holes in or near the area of surface mineralization, followed by widely spaced holes (minimum of four) in the 'ore-host' formation to the north and east wherewith ibe as to approximate continuity and grade of ore might be known. Final extent of churn-drilling would of course depend largely on continued finding of ore, but the neccessity of more than twelve holes total is not foreseen, as consideration is for the present limited to the boundaries in common with the surrounding rock formations.

As final proof and culmination of strictly prospecting operations a small shaft and limited amount of drifting in the ore zone would be advantageous, if not absolutely neccessary to proper interpretation of character of ore. Assuming that an expense of $10,000 to $15,000 for the shaft and drifting will have been properly justified by indications from drilling, the risk of this investment will be relatively small.

- THE 'SIXTY' COPPER PROSPECT -
West Of Magdalena, N. M.

A Preliminary Report Of November, 1950
Amended And Revised In May, 1951

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The Rocks	3-A
Structure And Rock Distribution	3-B
Character of the Mineralized Rock	4
Mineralization	4
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SCOPE AND PURPOSE OF REPORT

This report was originally written on the basis of a three month period of prospecting development work consisting of a number of trenches or shallow open cuts, one short-lived and unsuccessful attempt at diamond drilling, a prospect shaft to 54 feet on claim #1, and an 11-foot location and prospect shaft on claim #2. Mapping and original surface reconaissance has been considerably augmented to the end that appreciable corrections are neccessary, particularly with respect to the geology of the surrounding formations. By means of Brunton Compass and hand-level field methods an approximately accurate topographic map has been prepared, upon which the formations, thier contacts and other features have been plotted.

The writer, being part owner in the properties treated herewith, is not a disinterested party. This report is intended, however, to employ logical inference in it's first part wherein certain investment risk is proposed; and in it's second part to list impartially and organize all evidence which may have bearing or value in judging that risk.

GENERAL TOPOGRAPHY AND GEOLOGY

The 'Sixty' Prospect at an elevation of 7200 feet above sealevel is in an area of mild relief, low hills of entirely igneous origin rise little more than 100 feet above a surrounding alluvial pediment. Drainage slopes grade from an average 4-percent around the higher points to less than 2-percent in merging onto the alluvial plain. Limited rock outcrops coincide with a minimum distribution of local steeper slopes. Sequence, form and structural relation of geological components are made obscure by the predominant occurence of contacts beneath fill in small shallow valleys and other slope depressions.

THE ROCKS

Classification of rocks is limited here to field type tentative determinations supplemented, however, by correlation with the rocks of the Magdalena District[1], ten miles eastward. Studied comparison has been made with the descriptions given in U.S.G.S. Professional Paper 200, and partially with specimens collected in the district using the geologic map thereof as guide. Rocks of the 'Sixty' Prospect area are accordingly adentified where similiarities permit, but it is neccessary to emphasize that this comparison study is incomplete.

Adequate parrallel may be drwn to classify the host rock of copper mineralization as the "Banded Rhyolite". For purposes of the 'Sixty' area this formation is sub-divided as Type I.,a multi-shade light grey, dense, flint-like flow containing thinly scattered small phenocrysts of orthoclase and rarely quartz in groundmass streaked by unequal distribution of iron oxide dust; Type-II., the 'ore-rock', of less determineable character duo to hydrothermal alteration and silicification, has the same general texture and contains the remains of similiar phenocrysts of orthoclase (altered to soft sericite or kaolin); Type-III., comprised of patches and dike-like forms within the main formation, though of apparently identical texture and general composition, is colored in shades of light to darker purple. The separate designation of Type-III. may not be warranted on the basis that the purple color may come from inclusions of an andesite porphyry found in this rock, but providing the color is of endomorphic origin, a tight contact of sharp color contrast would seem contrary to the idea of a contiguous mass. In considering the andesite inclusions it may be noted that thier occurence is not near any known contact.

1- U.S. Geological Survey Professional Paper 200, pgs. 23 to 44 incl.

THE ROCKS (continued)

"Rhyolite Porphyry"[1] of near-granitic texture, probably a laccolithic sill is found in igneous contact below "Purple Andesite"[2], a lavender to dark purple porphyry characterized by abundant feldspar phenocrysts, complete alteration of ferro-magnesian minerals to psuedomorpous iron oxide, and lack of quartz phenocrysts which are characteristic of the rhyolite porphyry.

A second type of andesite porphyry ('Type-II.) is composed of abundant partially altered feldspar phenocrysts in a granular dark-purple-grey or blackish-gray groundmass, distinct from the "Purple Andsite" flow rock, is intrusive, occuring as a wide dike on the north of the banded rhyolite. In another occurence of the identical type in the valley-fault-contact on the south of the banded rhyolite the rock has undergone hydrothermal alteration and impregnation with pyrite, the phenocrysts are entirely changed to calcite or other secondary minerals and the groundmass is dull green. Two small rock exposures along this contact have been mapped as the 'Type-II.' andesite though so highly altered and decomposed as to make classification very uncertain.

A Latite Porphyry, where found in a single fresh rock exposure, is characterized by altered small but well defined biotite and horneblende phenocrysts and less well defined feldspar phenocrysts in a light grey, microgranular groundmass, which appears as a very light purple shade of white under the hand lens. In the more accessible exposures near contact this rock appears noticeably finer-textured, and is altered to a light-greenish-brown color. Bearing appreciable resemblence to latite dikes of the Magdalena District[3] is suspected as a very wide dike or sill, located in fault contact with the northeast side of the banded rhyolite, but the opposite wall or boundary is hidden under the overlapping alluvial pediment.

Basalt, typical black flow rock, caps gently rounded hills about one-half mile across a wide valley to eastward, outside of the area mapped.

STRUCTURE AND ROCK DISTRIBUTION (See Geologic Map)

The copper-bearing rhyolite formation forms a fault-block, tentatively in down-thrown position, and the center of the hill which it comprises is traversed by a dominant fault striking N.25°E. This fault which has the west half containing the specific mineralized zone in the upthrown position is responsible for exposing the "rhyolite porhyry" in the hill to the south as a geological ridge sandwhiched between the "purple andesite" downthrown on the east and overlying "purple andesite" in igneous contact on the west (low angle dip westward?). Thence revolving clockwise across valley fill the Type-I. "banded Rhyolite" is found in contact with another exposure of the rhyolite porphyry on the west ofthe ore zone. Thence again across valley fill the Type-II., 'ore-rock' facies may be traced northwestward. Relation of the latite porphyry in fault contact on the northeast, striking N.35°W. and dipping 50° to 68° southwest is the least known in regard to form and sequence.

1,2,3 op. cit., pgs. 33, 27, 33

CHARACTER OF THE MINERALIZED ROCK

The copper-mineralized rock appears as a whitish, fine textued, allmost totally siliceous, massive formation particularly well exposed on the south slope of the hill which it comprises. On sub-surface excavation the rock is found to be intensely fractured in magnitude ranging from the microscopic to pronounced fissures of moderate extent, accompanied by multiple-direction shearing. Movement between blocks is evidenced by thin gouge seams, breccia, and slickenside surfaces, but the amount of displacement appears limited with few exceptions. The predominant plane of fracture or shear, if any may be so designated, trends north-south and dips nearly vertically.

Though generally uniform the character of the rock embodies some variation in bands or blocks, textures ranging from dense flint-like to finely granular, and form varying from massive to platy, the former being very hard and tough and the latter with other portions somewhat softer. A variable intensity of fracturing has resulted in an over-emphasis of the irregular tight reef-like blocks in outcrops through residual effect of erosion.

MINERALIZATION

General Character.--- Copper mineralization is visible in the massive outcrops over an area roughly 600 feet in diameter, if not on the natural weathered surface at least by breaking to a depth of a few inches. Samples of these exposures yield assays of 0.25% to 3-plus% copper. This mineralized zone is bounded on the south and west by the contacts with the adjacent formations, but no explanation is yet found for limits where the rhyolite formation extends on the north and east. Boundary on the north is indefinite under soil cover of mild slopes with only a few limited rock outcrops.

Interpretation and evaluation of mineral showings must be with full consideration of variations in rock character, particularly so with regard to intensity of fracturing. To the shallow extent of present exploration the copper minerals, other than in the form of vanadates, are largely confined to the tighter, lesser-fractured rock portions. The degree of mineral oxidation and leaching being inversely proportional to porosity the more finely broken material is nearly if not completely impoverished.

Mineralization is of a disseminated type, occuring as thin closely spaced seams or veinlets and in the rock between as shots and fine dust-like specks. Minerals which have been found are listed and briefly described as follows:-

Chrysocolla.-- most visibly abundant mineral associated with smaller amounts of malachite and uncommon occurence of azurite.

Copper-lead Vanadates.-- occurs filling or lining fractures, as stains, globular incrustations, fine radiated, or fine powdery masses; in shades of yellow, brown, green or black color. The vanadates were discovered in panning, both from ravine sands and residual soil; subsequent use has been made as a 'tracer' in prospecting soil covered areas for extent of mineralized zone. Though not so visibly apparent the vanadates are suggested by assays as being the most common mineral of the oxidized zone, unexpectedly and without exception lead has assayed just over one-percent (See Sample Assays, following).

Native Copper.-- found sparingly as small scales in pan concentrates.

MINERALIZATION (Continued)

Chalcocite.-- occurs in tight fractures and disseminated as spots and dust-like clouds in rock, also finely divided in later-stage quartz fracture and breccia filling (see assays). First definitely determined in prospect shaft at 32 to 36 foot depth, where leaching action had been locally minimized, in the form of relatively thick seams of grey-black chalcocite associated with an equal or greater proportion of blue-black covellite, and later as the cloud-like impregnations in seers of tighter rock both in the shaft and on the surface. It was found that light to dark grey rock color was due to capillary size particles of chalcocite.

Chalcopyrite.-- very small, yellow metallic particles have been seen, occurring very sparingly in high grade specimens of the secondary sulphides, interpreted as relict cores.

Limonite-- Hematite.-- as light to heavy stains in and emanating from fractures, and as fracture filling mixed with large proportion of clay, distribution is local, being completely absent in some portions of the formation (without noticeable relation to grade of copper mineralization). Minor amounts of manganese oxides are noted locally.

Small limonite pseudomorphs after pyrite are sparsely distributed throughout the 'banded rhyolite' formation, but are particularly noticeable in some sections only, such as the tuff exposed on the lower east slope. These occurrences may be related more to rock forming than to mineralizing stage as they are found where there is little other mineral evidence; but conversely stronger concentrations are found in vicinities of faults and a number of formation contacts.

Gangue Minerals.-- Consist in addition to fine grained quartz as above-mentioned only of limited quantity of clay in fault gouge, and local simple fracture filling by secondary kaolin, or other clay minerals formed by descending waters.

Other Mineralization.-- Though no vein formations are found within the copper zone, good size fault fissure veins of quartz, calcite, manganese, barite type containing small amounts of galena, are prolific in the formations surrounding the rhyolite. Though one such fault fissure traverses the center of the rhyolite formation on the east edge of the ore zone the vein filling seems limited to a relatively small amount of quartz. These veins, characteristically low temperature shallow zone type, are thought to be later than the copper mineralization, and mineralogically unrelated. No trace or evidence of copper minerals has been found outside of the highly fractured siliceous rhyolite member; no vanadates are found with the oxidation minerals rimming occasional galena crystals of the veins; nor has any lead in form other than the vanadate been found in the copper zone.

Still another type of mineralization is indicated by hydrothermally altered andesite (?) containing rather densely scattered pyrite (limonite pseudomorphs). There are only two small exposures of a few square yards each in the bottom of the deeply eroded channel of the main drainage artery adjacent to the copper zone on the south. This type of mineralization to which attention has only very recently been attracted has not been seen in any of the existing shallow prospect workings of the area. Though here again there is no readily apparent relation with the copper zone the hypothetical possibilities of such relation warrant exploration of this vicinity.

SAMPLES — ASSAYS

Prospect Shaft ('Sixty' #1 Claim).*—

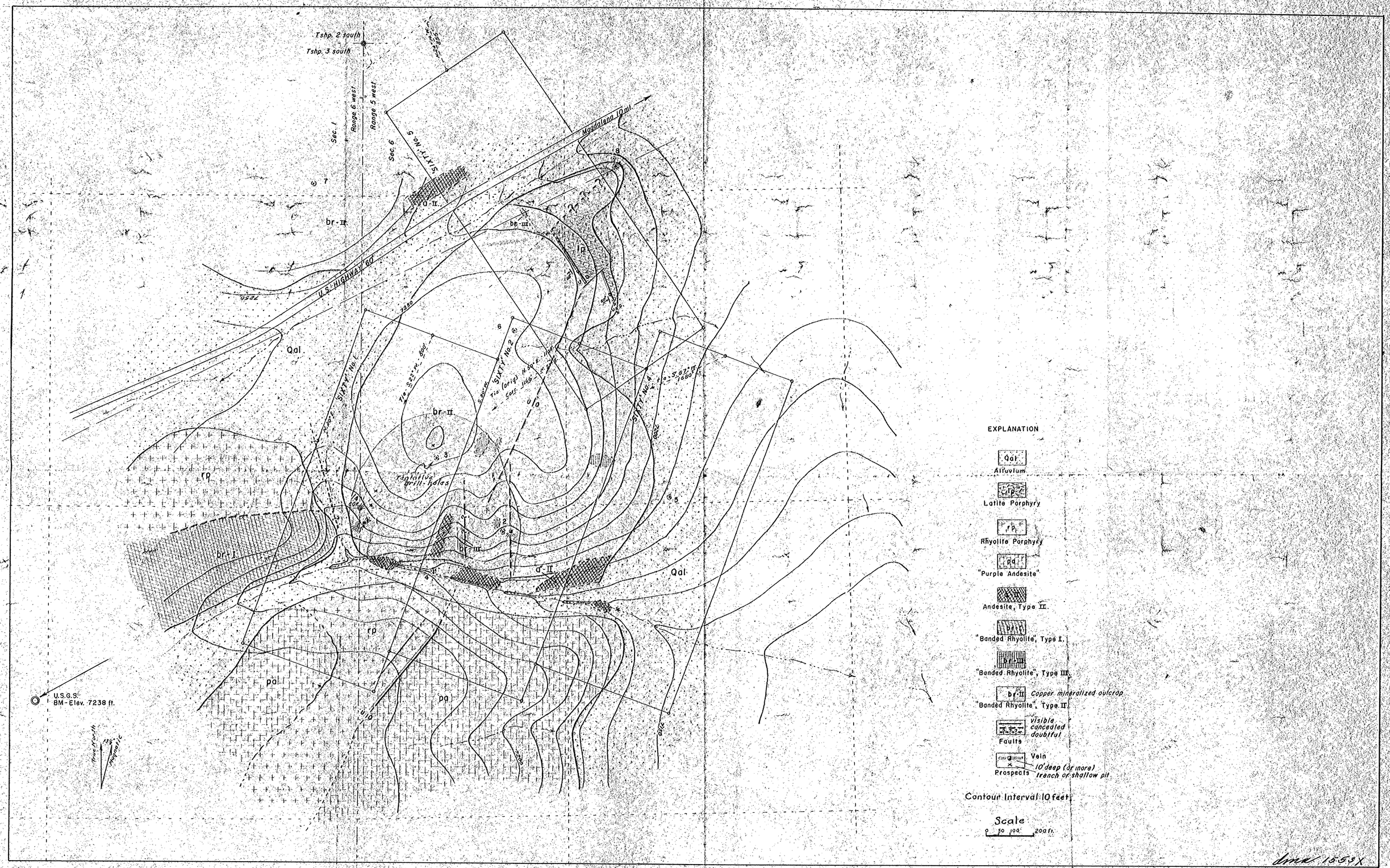
Sample No.	Description	Depth from-to	Gold Oz./T.	Silver Oz./T.	Copper %	Lead %
13	grab sample, 100# q'rtrd, of dump	0'-16'	-	0.10	0.27	-
23	Sample by decimation	16'-28'	-	0.42	0.44	1.02
30	" " "	32'- 36'	trace	1.06	3.27	1.33
29 & 31-37	" " " (Composite) -and-	28'-32'— 36'-48'	-	0.38	0.65	1.23
	AVERAGE (per foot of shaft)			0.3	0.8	1.2

*- After 16 ft. depth one shovel-full taken for each wheelbarrow load (approx. 30 shovels) of excavated material from bucket at collar of shaft; for each round sample was crushed to minus-3/4" and quartered to 10 lbs. for assay, (subsequently most samples composited in proportion to footage represented).
Assays by R. A. Matuzeski, New Mexico Bureau of Mines & Min. Resources.

Other Samples.--

43	Tight grey rock with disseminated fine chalcocite . . (from open-cut 140' north of shaft)			2.18 .	. -
45	Breccia, finely divided sulphide in tight quartz . . groundmass (from shaft)			2.40 .	. -
24	Fault-gouge material ...approx. 16'-28' ... (values apparently as vanadates)		0.14	1.42	1.23
21	Selected material, oxide Cu minerals (")		1.10	1.31	-
22	" " " " "	26'-28'	1.08	0.87	-
42	" " " " "	approx. 40'	-	3.49	-
41	Residual top soil and clay from trench . . . (100 ft. south #2 shaft - 30# sample)		0.30	0.82	1.02
1 & 2	Surface outcrops, random sample of oxide . . . . mineral showings (chrysocolla)			1.30 & 2.18	
3	" " - hematite veinlets . .	trace	0.26	0.54	
4 & 5	Composite - unsuccessful attempt at diamond drilling (to 16 ft.)	sand **	. . . .	0.33	
		slime		0.44	

(** plus small pieces of core)



GEOLOGIC MAP - 'SIXTY' COPPER PROSPECT

SOCORRO COUNTY, NEW MEXICO

Topography and Claim boundary surveys, Sept., 1950 and May, 1951, by Brunton compass and chain; geology, May, 1951.

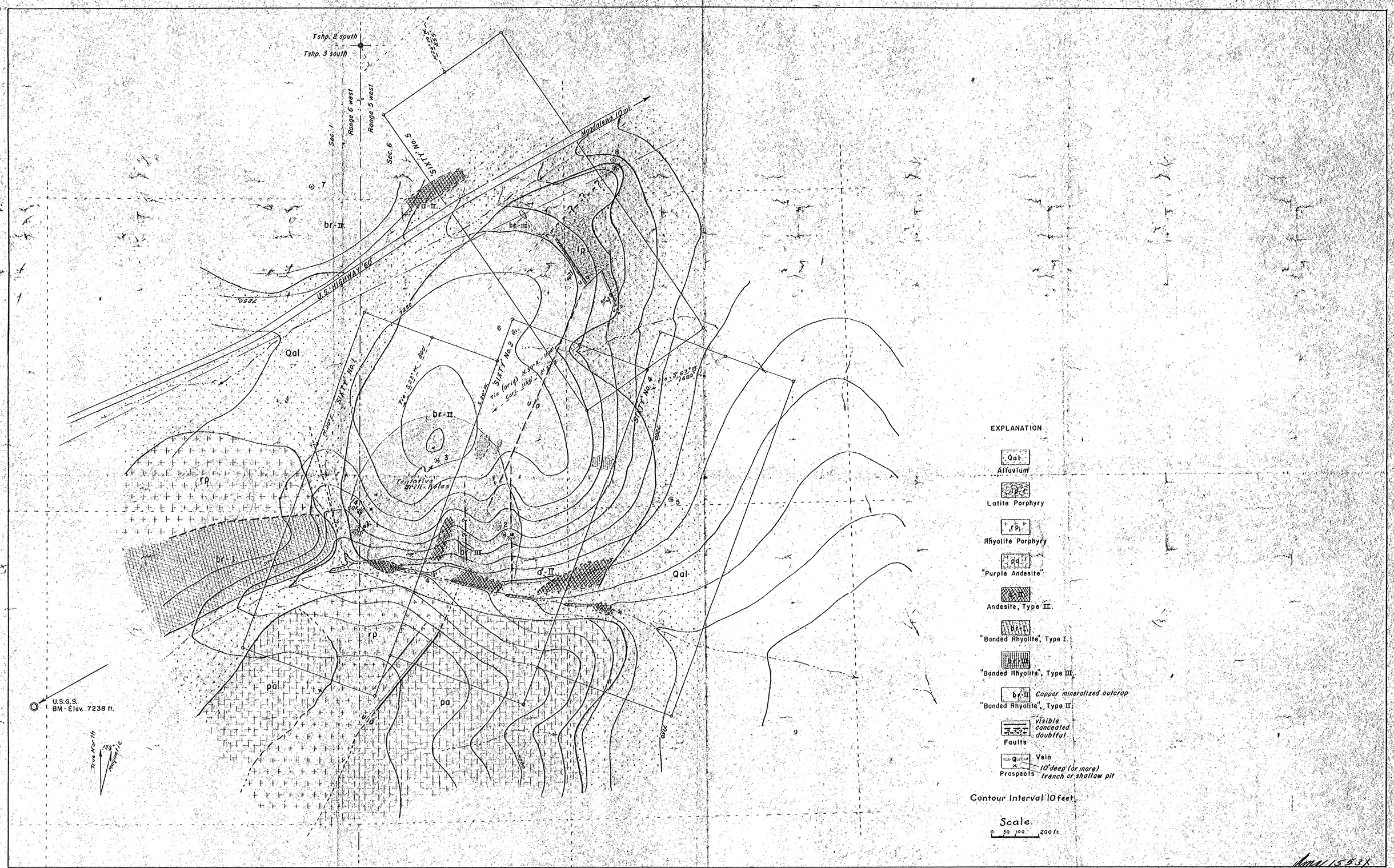
by: S. S. Thurmond

S. S. THURMOND JR., LT. (C.E.)

REGISTERED ENGINEER & LAND SURVEYOR

HOT SPRINGS, N. M. 948 SOUTH BROADWAY

dmr 1559X



GEOLOGIC MAP - 'SIXTY' COPPER PROSPECT

SOCORRO COUNTY, NEW MEXICO

Topography and Claim boundary surveys, Sept., 1950 and May, 1951; by Brunton compass and chain; geology, May, 1951.

by: S. S. Thurmond Jr.

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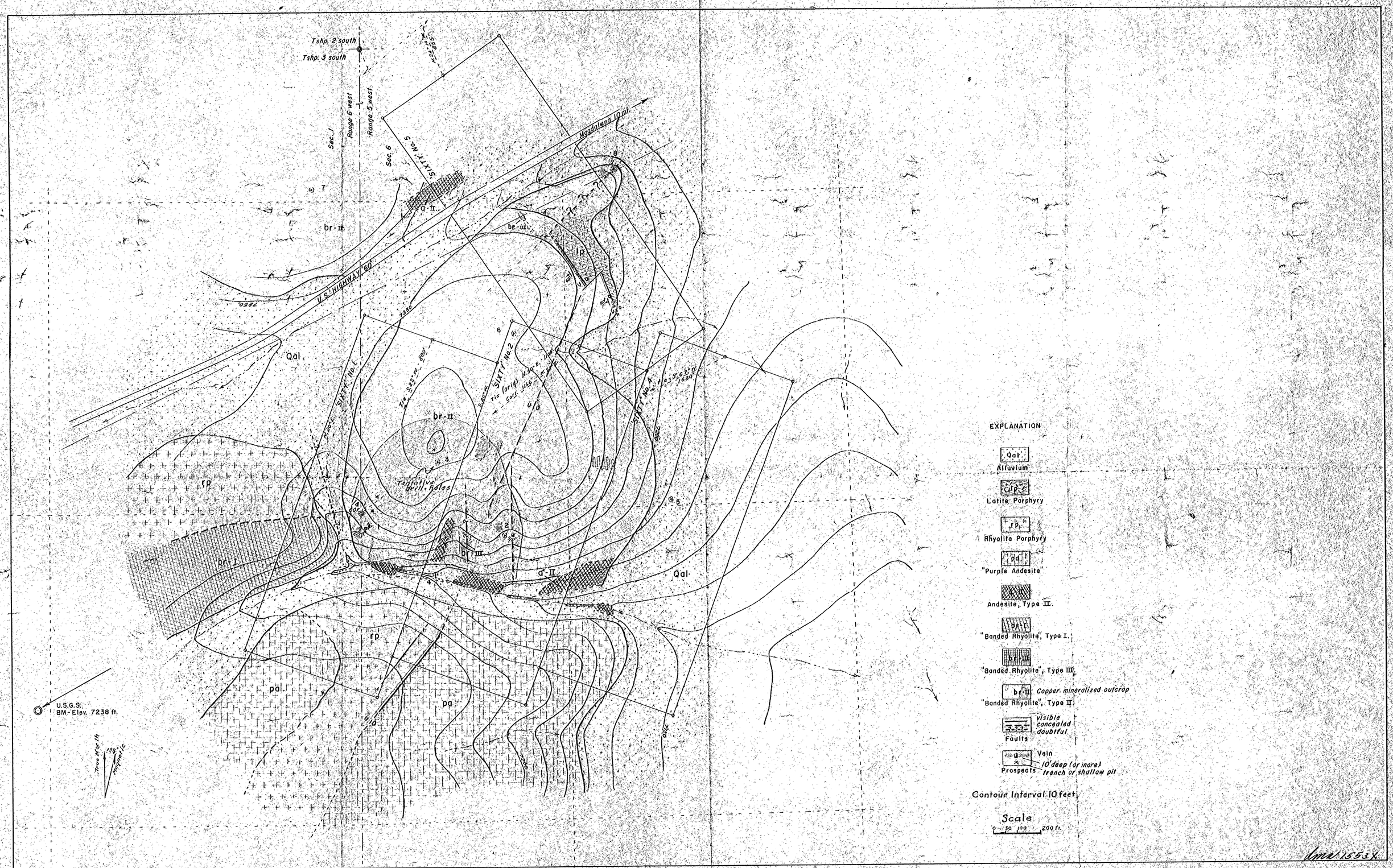

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GEOLOGIC MAP - 'SIXTY' COPPER PROSPECT

SOCORRO COUNTY, NEW MEXICO

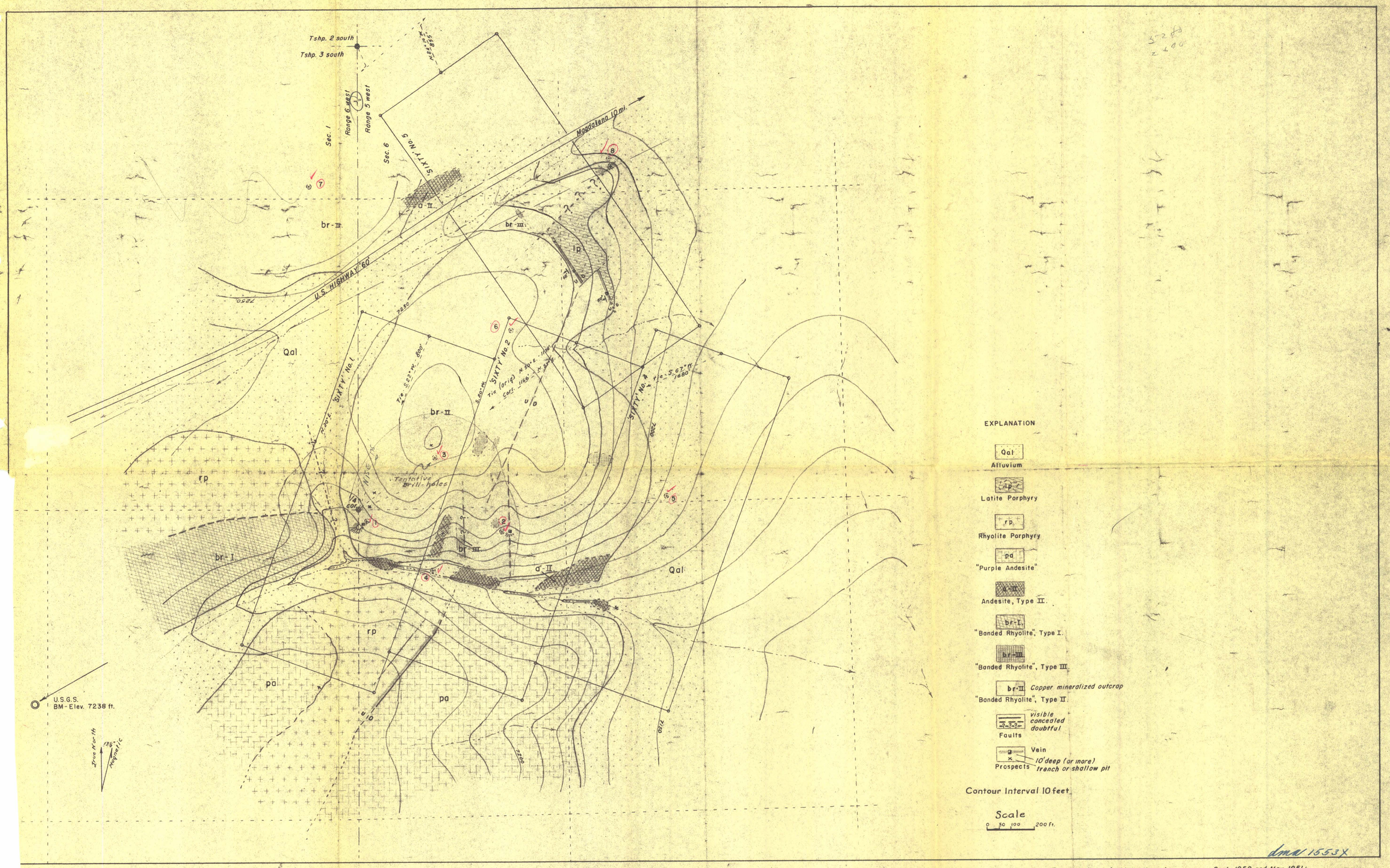
Topography and Claim boundary surveys, Sept., 1950 and May, 1951, by Brunton compass and chain; geology, May, 1951.

by: S. S. Thurmond

S. S. THURMOND JR., Lic. No. 2203

REGISTERED GEOLOGIST & CAND. SURVEYOR

HOT SPRINGS, N.M. 328 SOUTH BROADWAY



GEOLOGIC MAP - 'SIXTY' COPPER PROSPECT

SOCORRO COUNTY, NEW MEXICO

Topography and Claim boundary surveys, Sept., 1950 and May, 1951; by Brunton compass and chain; geology, May, 1951.

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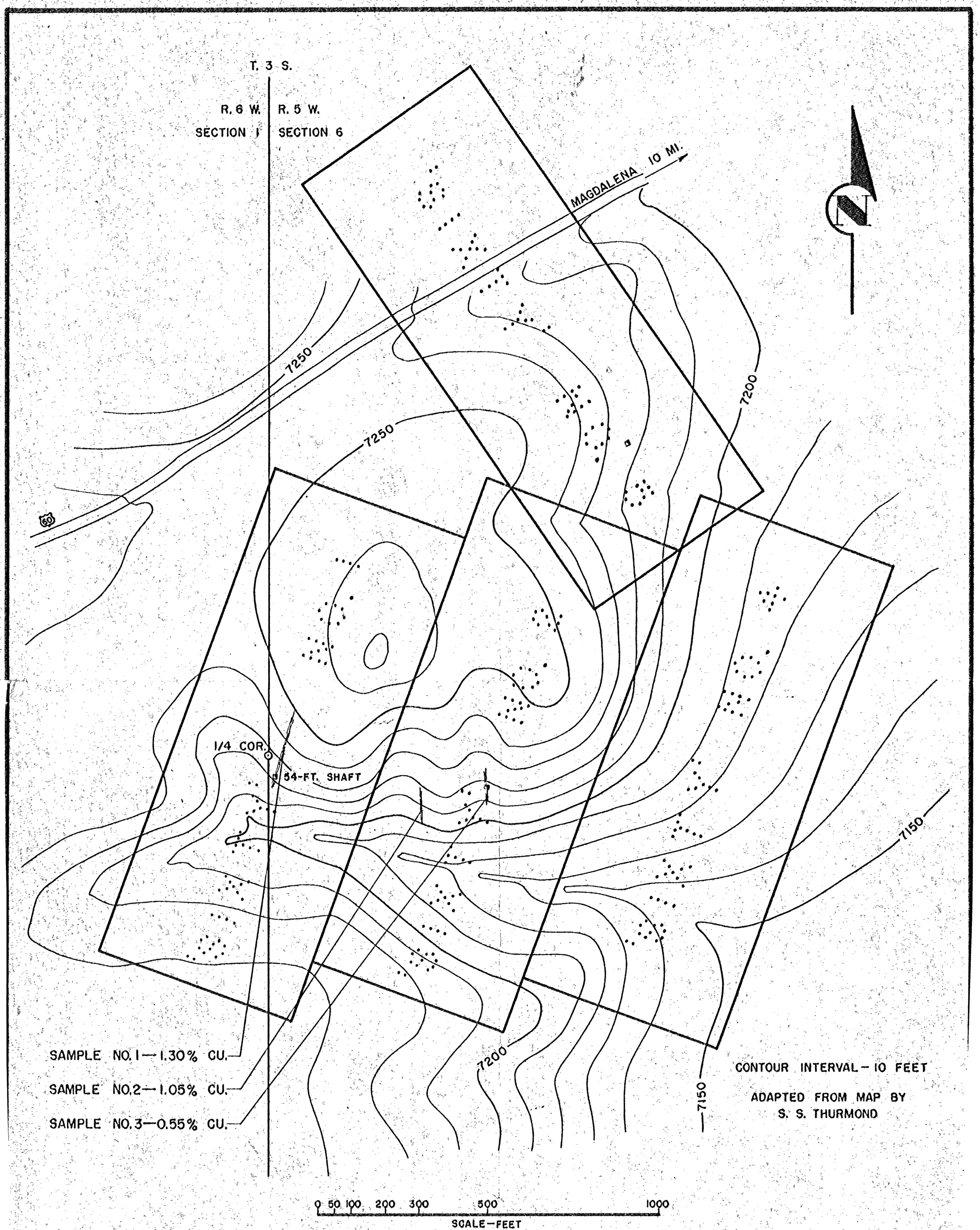

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FIGURE 2.—SURFACE MAP, 'SIXTY' COPPER PROSPECT, SOCORRO COUNTY, NEW MEXICO