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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: INSPIRATION NEEDLES COPPER CO.

ALTERNATE NAMES:

GILA COUNTY MILS NUMBER: 141B

LOCATION: TOWNSHIP 1 N RANGE 14 E SECTION 22 QUARTER E2  
LATITUDE: N 33DEG 24MIN 28SEC LONGITUDE: W 110DEG 54MIN 45SEC  
TOPO MAP NAME: INSPIRATION - 7.5 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:

COPPER OXIDE  
COPPER SULFIDE  
SILVER  
GOLD

BIBLIOGRAPHY:

ADMMR INSPIRATION NEEDLES COPPER CO FILE  
BLM MINING DISTRICT SHEET 155  
PROPERTY EXTENDS INTO SEC 21, 27 & 28  
ADMMR "U" FILE GILA Cu-12

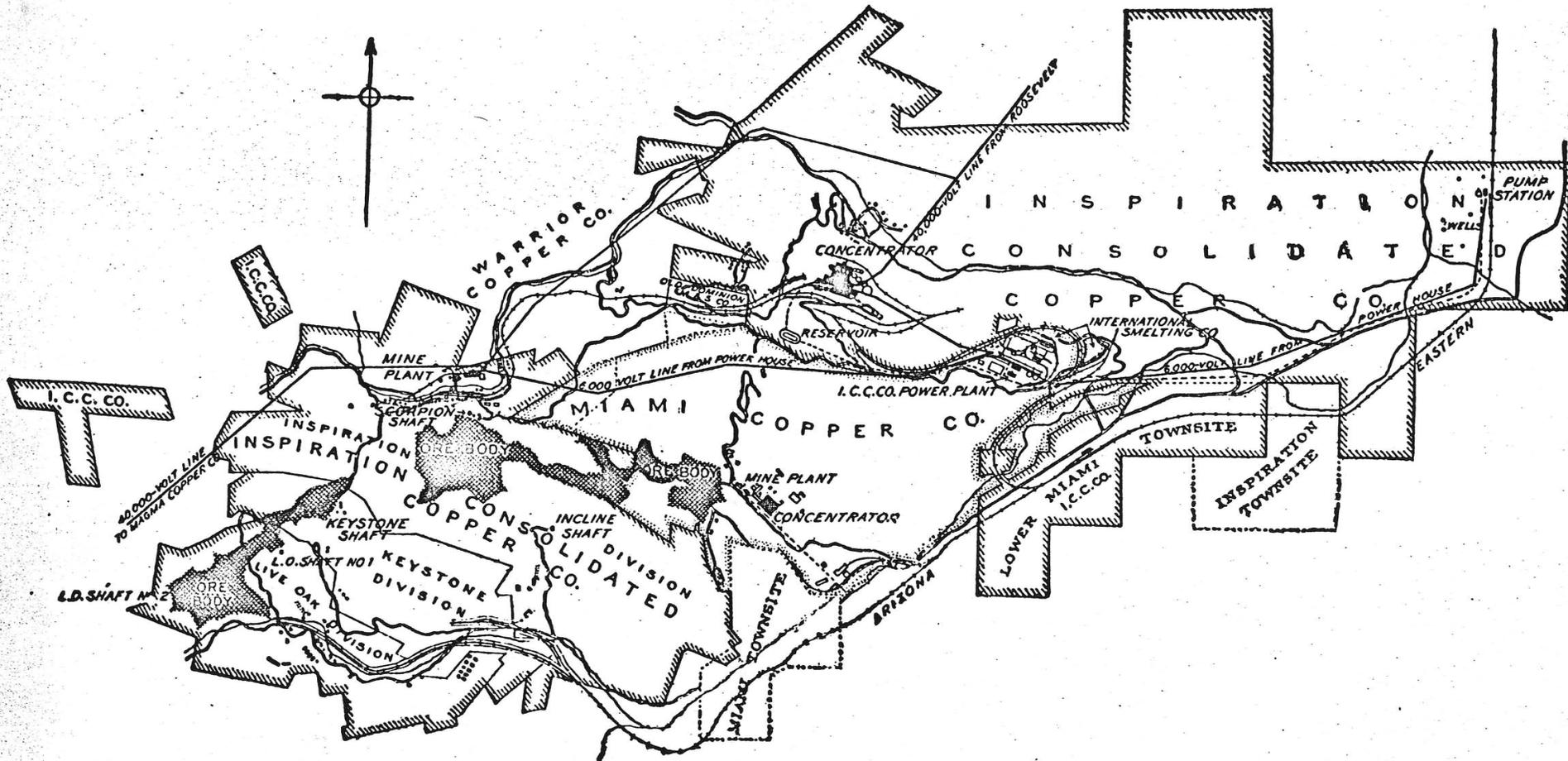


FIGURE 6.—General plan of land ownership, ore bodies, and reduction works in the Miami district. Reduced from a map prepared by the Inspiration Consolidated Copper Co. in 1916.

INSPIRATION NEEDLES COPPER CO.

Inspiration reportedly has an option agreement on Dan Williamson's property west of the Blue Bird.

FIJ WR 3/31/67

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See: Arizona Mining Journal May 1, 1922 p. 60

Minerology of ARizona p. 14, 16



# INSPIRATION NEEDLES COPPER CO.

Inspiration Consolidated Copper Company's property is located in the Miami Copper Belt. Attention is called to the map showing the developed ore bodies of the Miami District; also to the map showing the Areal Geology of that district wherein the Inspiration Consolidated Copper Co. has developed 97,141,000 tons of copper ore by churn drilling, (see 1915 Annual Report) from which it is now producing at the rate of 125,000,000 pounds of copper per annum.

is an Arizona Corporation. Capitalized 2,000,000 Shares \$1.00 par.

Property consists of thirty-five mineral locations — five hundred acres — in the "Miami Copper Belt", Miami, Arizona.

On the reverse side is a map plotted on a United States Geological Sheet of the "Miami Copper Belt", showing the relative position of the Inspiration Needles Copper Co. to the great producing mines of this district.

The Miami Copper Company's mining property is also located in the "Miami Copper Belt", Miami, Arizona.

Please note location on reverse side, also developed ore bodies and areal geology on accompanying sketches. In this Copper Belt, the Miami Copper Company is now producing at the rate of 50,000,000 pounds of copper annually and has developed an ore reserve of 42,500,000 tons of copper ore by churn drilling. (See Annual Report of 1915.)

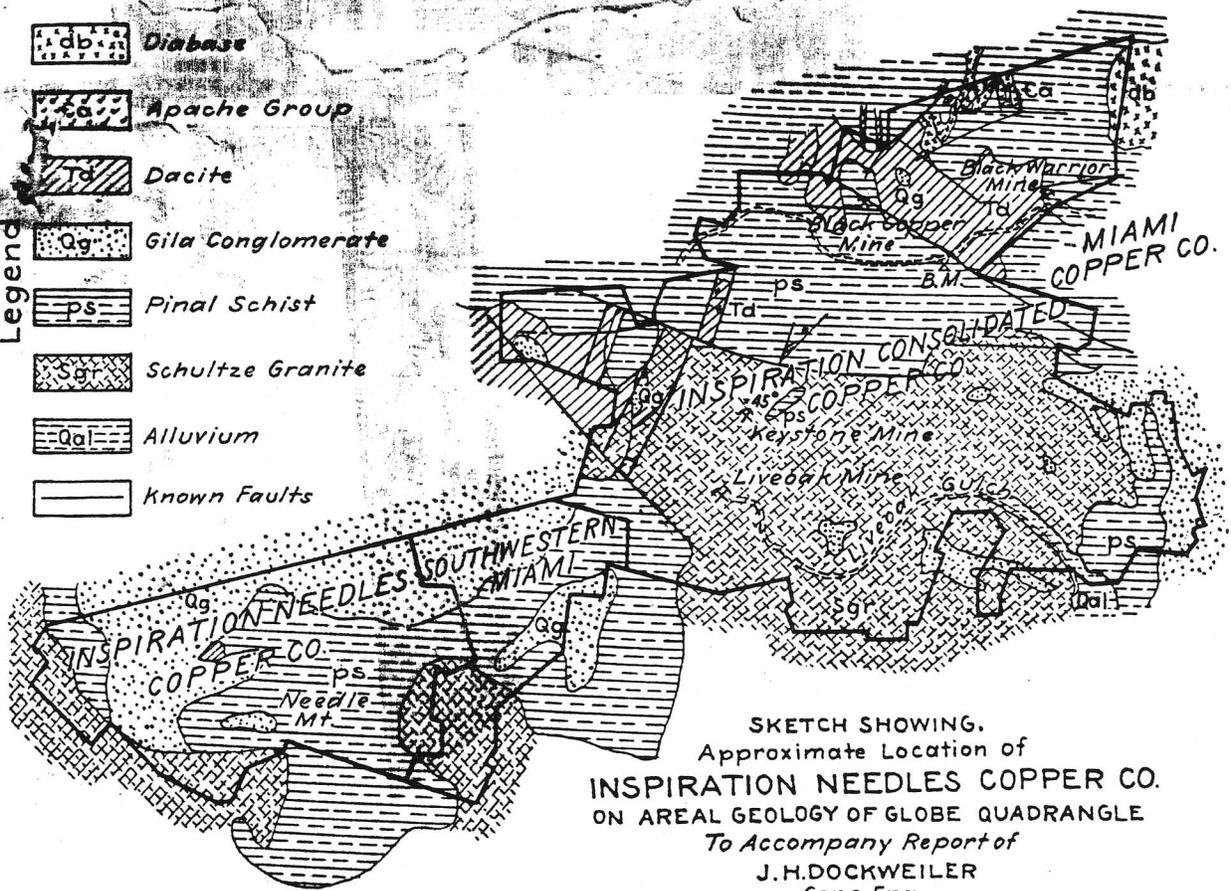
Also please note on the accompanying "Areal Geology" sketch, the bodies of Pinal Schist in which nearly all the millions of tons of ore developed in this district have been found, and note the large body of Pinal Schist on the Inspiration Needles Copper Co. which has just commenced development by churn drilling. Its surface and formation being identical with that of the Inspiration Consolidated and Miami Copper Companies. Numerous showing of rich carbonate and oxide ores exist over a large portion of our surface area, while chalcopyrite and chalcocite have been found in shallow workings.

Inspiration Needles is listed on the New York Curb.

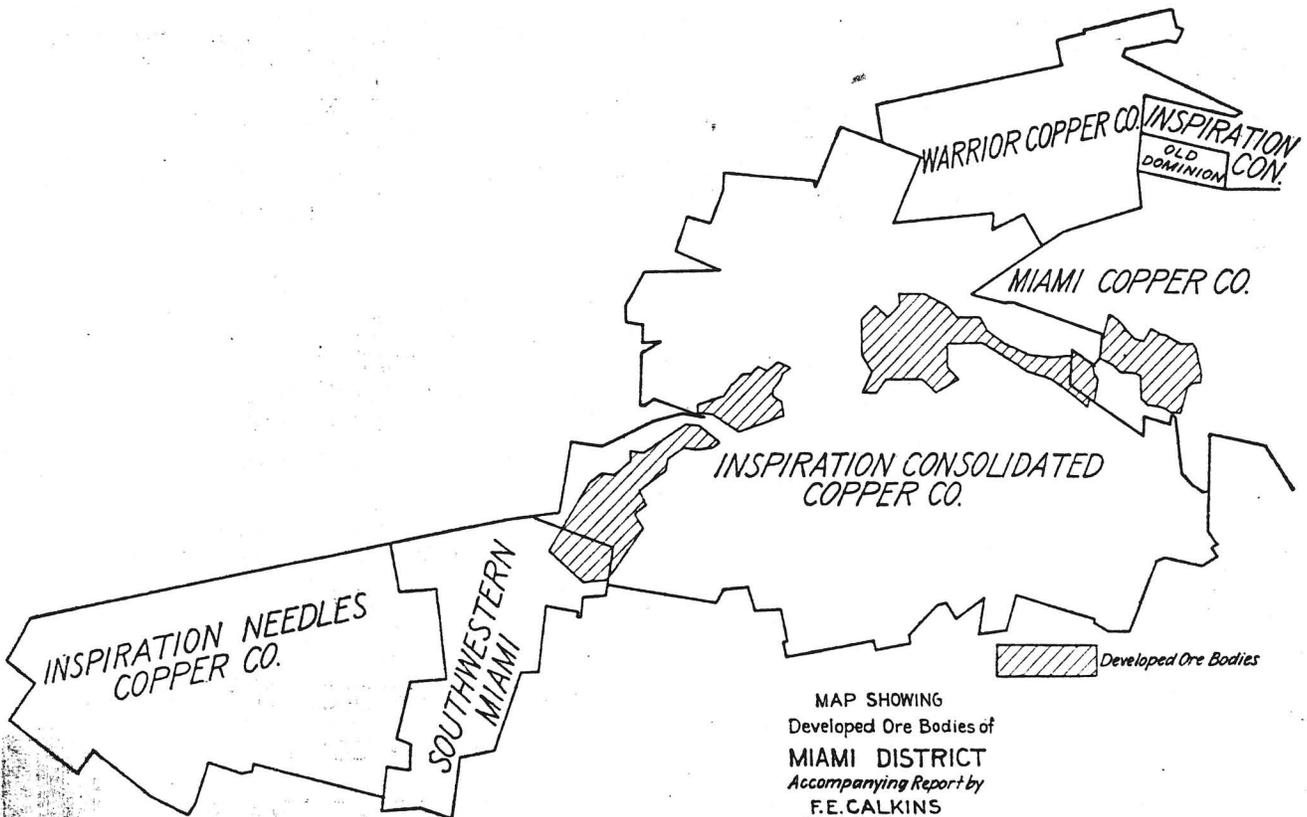
New York Office, 901 MORTON BUILDING, 110 NASSAU STREET, New York.

Boston Office, ROOM 1050, OLD SOUTH BUILDING, Phone Main 3727

- Legend**
-  **db** Diabase
  -  **ca** Apache Group
  -  **Td** Dacite
  -  **Qg** Gila Conglomerate
  -  **ps** Pinal Schist
  -  **sg** Schultze Granite
  -  **Qa** Alluvium
  -  **Known Faults**



SKETCH SHOWING.  
 Approximate Location of  
 INSPIRATION NEEDLES COPPER CO.  
 ON AREAL GEOLOGY OF GLOBE QUADRANGLE  
 To Accompany Report of  
 J. H. DOCKWEILER  
 Cons. Eng.



MAP SHOWING  
 Developed Ore Bodies of  
 MIAMI DISTRICT  
 Accompanying Report by  
 F. E. CALKINS  
 Mining Engineer  
 Miami, Arizona June 22, 1916



WILBUR H. GRANT  
MINING AND GEOLOGICAL ENGINEER  
582 MARKET STREET  
SAN FRANCISCO, CALIF.

January 24, 1949

Mrs. Marguerite Bowen Copp  
Inverness, California

Dear Mrs. Copp:

Since writing my report on the property of The Inspiration Needles Copper Co.,  $3\frac{1}{2}$  miles S 82 W of Miami, Arizona, for you as owner on November 4, 1947, Mr. Lloyd W. Thayer has submitted information, not known to us when I reported, regarding the economic and geological aspects of your property, which should be considered in addition to the subject matter contained in my report. Such data may be considered as an added justification for drilling and otherwise developing the ground covered by your patented mining claims to determine the economic aspects of its potential probabilities of producing, within our domestic territory, copper which is one of the strategic metals needed by our Federal Government.

First, it is dependably reported that the Castle Dome Mine property which is owned by the Miami Copper Company, lies 4400 feet northwest of the northwest corner of the Inspiration Needles property. The Castle Dome has operated on "porphyry copper" ore there successfully for several years. A few years ago the Pinal schist on their property southeasterly of their open cut was drilled and determined to contain commercial quantities of copper. Thus the trend of this newly developed Castle Dome ore is toward the Inspiration Needles property where there are ore-bearing indications at the schist-granite contact on Black Eagle #2 and #3 claims. Immediately to the east of this contact the post-mineral Gila conglomerate covers the central and northern portion of your property. Any commercial possibilities under the conglomerate are obscured from observation and interpretation.

It is well known that the dominant commercial possibilities in the Miami District are at the granite-schist contact. Ore occurs in both rocks, but more in the schist than the granite.

Second new data: A map which your Uncle (the original owner) had constructed and which I had not seen before, shows two points of commercial importance. From a point on the Needles group east side-line, near the Needles Mine camp, where the principal gulch leaves the property, the Live Oak Shaft #2 is located on a bearing N50E 350 ft. distant. The note on the map says this shaft "was sunk through 210 feet of 2-3/4% copper ore." It also shows that from the same point on the east side-line N54E 190 ft. distant a note says "Drill hole #4 The Inspiration ore body developed to this point." This point is on the

Mrs. Marguerite Bowen Copp.....#2

Southwestern Miami group acquired by Inspiration. All the data on this map confirms that shown on Map 4 of my report which is an enlargement of a Map in Ransome's "U.S.G.S. Professional Paper #115." These two maps and the vertical projection (my Map #5) show that the ore zone follows the granite-schist contact which trends S53W towards the SW corner of the Picnic #2 Claim. This is at the point of the granite intrusion into the Pinal schist near where I recommended that the first drill hole should be drilled.

Other data correlated is that the granite schist contact after entering 70 ft. inside the Needles group, turns southerly for 300 ft., 110 ft. of which is on the Schultz property. It thence turns westerly for 220 ft. and then back northerly to the SW corner of the Picnic #2 Claim, the center-line of the ore zone to which I have referred above. At many points on each side of this contact there are veins of chrysocolla (copper silicate) up to 18 in. in width.

CONCLUSION:

The southwesterly trend of the Inspiration Ore Zone and the southeasterly trend of the Castle Dome Ore Zone (and granite-schist contact) converge in the "bay" of Pinal schist at the southerly end of the Inspiration Needles property. These general geological (granite-schist contact and trend of ore zones) controls with actual outcrops of secondary (chrysocolla) copper ores concentrating at the point specified makes this 200 by 200 ft. area of Pinal schist the best area for initial pilot churn drilling.

The new data above specified confirms my conclusions given in my report of November 4, 1947 without this data.

Very truly yours,

*Wilbur H. Grant*

COPY

WILBUR H. GRANT  
Mining and Geological Engineer  
582 Market Street  
San Francisco, Calif.

January 10, 1948

Mrs. Marguerite Bowan Copp  
Inverness, California.

Dear Mrs. Copp:

In compliance with your request in your letter of January 8, 1948, I am glad to reply as follows:-

On pages 18 and 19 of my report on your property which has the corporation named Inspiration Needles Copper Company as owner of record and which report is dated November 4, 1947, is a description of the best area on your property for containing possible "porphyry orebodies" with depth. The best outcrops of copper-bearing minerals were observed to lie between the northerly sideline of the Picnic and Copper Bag claims to the southerly limits of your property ( South sideline of Picnic No 2 and Hill Top claims ). Anywhere in that area would be the most favorable for pilot drilling.

The southwesterly trend of the known orebodies found on Live Oak and Southwestern Miami Groups of the Inspiration mine would pass through the above described area ( See map 3 ). Furthermore, the evidence at the producing mines shows that the major portion of the porphyry ore is in the Pinal schist under the Schultz granite ( See map 4 ).

For the above reasons I specifically recommend that the first drill hole should be sunk at least fifteen hundred feet, unless orebodies are found at higher elevations, and that it should be started at a point in a gulch on Picnic claim two hundred feet S 80 E of the shallow prospect pit labeled #4 shown on map No 2 of my report. If commercial ore is found in that hole, then other holes should be drilled systematically S 80 W from this original hole along the schist-granit contact and the schist area easterly to the east line of the Hill Top claim. Geological evidence obtained in the first pilot hole will be of great value in outlining future development work.

It is reported that water for drilling was obtained from hole #2 on Standard #1 claim drilled in 1912. ( See map 2 ).

I trust that the foregoing provides you with the information desired.

Respectfully yours,

(signed) Wilbur H. Grant

INSPIRATION NEEDLES COPPER CO.  
Gila Co. 3-1/2 mi. S82W Miami, Ariz.

RECONNAISSANCE REPORT

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WILBUR H. GRANT

Nov. 4, 1947

TABLE OF CONTENTS

Introduction . . . . .	1
Location . . . . .	2
Geography . . . . .	2
Kind of Mine . . . . .	4
History . . . . .	4
Claims . . . . .	5
Adjacent Properties . . . . .	6
Workings . . . . .	6
Facilities . . . . .	7
Geology . . . . .	8
Rocks . . . . .	8
Minerals . . . . .	10
Ore . . . . .	11
Details . . . . .	12
Data in Appendix . . . . .	14
Maps . . . . .	14
Economics . . . . .	16
Negative Evidence . . . . .	17
Favorable Evidence . . . . .	18
Conclusions . . . . .	19

APPENDIX

List of Workings and Comments . . . . .	A
Letter Report on Drill Holes #1 & #2 . . . . .	F
Geology of Inspiration Needles June 20 by Will Porri . . . . .	H

MAPS

- MAP 1. Claim Map
- MAP 2. Geological Surface Plan
- MAP 3. General Plan of Land Ownership and Orebodies in  
the Miami District
- MAP 4. Generalized Longitudinal Section across the  
Miami District

INSPIRATION NEEDLES COPPER CO.  
Gila Co. 3-1/2 mi. S82W Miami, Ariz.

RECONNAISSANCE REPORT

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WILBUR H. GRANT  
Nov. 4, 1947

INTRODUCTION

Early in 1912 Mr. F. W. Hoar, E.M., lessee and operator of mines of Globe, Arizona, presented the above property to the American Smelting & Refining Co. for purchase by them. Mr. Pope Yeatman, consulting engineer for the A.S. & R. Co. requested Mr. George H. Garrey, geologist for the A.S. & R. Co., to make an examination of the property in the late spring of 1912. I assisted and was in charge of field parties for Mr. Garrey on that examination and others for A.S. & R. Co. Sample maps of the Southwestern Miami and Live Oak groups of claims were available to us during our examination. At the close of the examination Mr. Louis S. Cates and Mr. Ralph Knowland came over from Ray, Arizona and reached a common conclusion with Mr. Garrey on what should be the recommendations to Mr. Yeatman. Those were the early days in which the porphyry coppers were in great demand by the large mining companies and ores containing at least 2% of copper were needed.

Thirty-five years later Mrs. Marg<sup>Veri</sup>ate Bowen Copp, the owner of the property, requested me to make a "refresher" examination of the property and give her a report which she could keep in the Company files with her other data and which she could use as a guide for future handling of the property. Mr. Lloyd Thayer and I went to the property where we spent five days making an inspection of all exposed rock formations in which it is possible for ore of this character to occur.

The data observed and the conclusions drawn therefrom are as follows:

#### LOCATION

The property is located in Sections 21, 22, 27 and 28, T 1 N, R 14 E, G&SR M&B in Arizona. The property is 3-1/2 miles by road up Live Oak Gulch S 82 W air line from the center of Miami, Arizona to the easterly edge of the property.

#### GEOGRAPHY

The sea level elevations on the property range from 4,000 to nearly 5,000 feet. Therefore there is a difference of elevation of 1,000 feet on the property. The topography is represented in part on Map 2 herewith. It will be noted there that the area is intricately dissected by drainage gulches moderately deep making the topography rather rugged.

The climate corresponds to that found in that part of Arizona at this elevation. It is hot and dry up to mid July with alternately mild and hot days until the latter part of October. In winter the snow falls on this area and varies in depth with the elevation, when the temperature is "nippy". No accurate records are available, but it is estimated from fragmental evidence prior to 1919 that there is an average rainfall of about 14 inches per annum.

The vegetation on the property does not include any trees. It consists of several varieties of cactus, especially cholla, agave, and several other varieties in lesser quantities. Besides these there is an abundance of shrubs consisting of scrub oak, paloverde, occotillo, cat's claw, mesquite and others. On the whole it makes a vicious type of shrubbery in which to do field work.

There are no flowing springs on the property; nevertheless, drill holes which have been sunk have encountered water at medium depth. There is no accurate data available to me to indicate at what depth the ground water level is encountered. The 551 foot depth of drilling hole No. 2 (south center of Standard No. 1 Claim) encountered a sufficient quantity of water to supply the needs of drill hole No. 1 (NE corner Standard No. 5 Claim) which was sunk to 1000 feet. These holes are shown on Map 2 herewith. In other words a moderate amount of water can

4

be developed by sinking wells in the washes and the country rock beneath them. If a large quantity is needed for recovery purposes, it would have to be developed elsewhere.

During the life of the group of claims, the owners constructed several miles of roads and three miles of trails to various parts of the property. None of these are now in sufficiently good condition to travel over them by vehicles. The grades are well established and could be put back in rather good shape at a moderate expense with bulldozers.

#### KIND OF MINE

This property is distinctly a prospect which the various owners hoped would be developed sometime into a profitable porphyry copper mine. The values are essentially in copper with minor amounts of gold, silver and possibly chromium and molybdenum.

#### HISTORY

Unfortunately there was little data available to me without extensive research work to secure a connected history of this group of claims. The first owner about which I have heard was Dan Williamson of Globe who had possession of the property in 1912. His relative, Mrs. Copp, received a transfer of title to Williamson's equity and for many years has paid taxes on the group which according to the county records are paid up to date.

There is no question but what many of the mining companies and individuals who have done exploration work have made examinations of this property. Several options have been granted by the owners but no development work has been done to date which has given the property a fair test of its commercial possibilities. Practically all the development work, other than drill holes, which has been done by the owners consists of pits, opencuts, shafts and adits which are so superficial that they cannot be expected to determine convincingly the economic aspects of the property. Drill holes were sunk on Picnic and Picnic No. 2 claims (see report of Will Porri in Appendix) in 1905 which he says are supposed to be less than 700 feet deep. In 1916-17 churn drill hole #1 (1000 ft. deep) and #2 (551 ft. deep) were drilled. These are described by a mining engineer (author not recorded) in a letter in the Appendix. None were considered deep enough.

#### CLAIMS

The property consists of 31 patented lode mining claims as follows:

Standard No. 1	Black Eagle No. 1	Copper Bug
Standard No. 3	Black Eagle No. 2	Hill Top
Standard No. 5	Black Eagle No. 3	Prophery Copper
Standard No. 6	Black Eagle No. 4	T. K. and M.
Standard No. 7	Arizona No. 1	Big Four
Standard No. 8	Arizona No. 2	Boulder
Standard No. 9	Picnic No. 1	Touch Me Not
Standard No. 10	Picnic No. 2	None Such
Standard No. 11	Mispah No. 1	North Star
Standard No. 13	Mispah No. 2	Peacock
Standard No. 14		

The patents to these claims were filed and recorded in Globe, Arizona at the request of Dan R. Williamson on the 22nd day of July, 1927 at 45 minutes past 10 o'clock A. M. The patent No. is 1,005,067. The net area of these thirty-one claims as computed by the mineral surveyor is 555.388 acres. The patent survey map is in the Appendix as Map 1. This is a whiteprint from the tracing in the Federal Surveyor's Office at Phoenix, Arizona. The group has a maximum of 9150 feet E-W and 6275 feet N-S.

#### ADJACENT PROPERTIES

The Inspiration Needles Copper Co. group of claims is bounded on the north by the Barney group and on the east by the Southwestern Miami group, both belonging to the Inspiration Consolidated Copper Co. It is bounded on the south by the Schultze group of unpatented lode mining claims and on the west by unpatented lode mining claims of various owners. Northeasterly from the Southwestern Miami group and adjacent thereto is the Live Oak group which contains one of the richest portions of the ore bodies of the district. Northwesterly from this group is the Castle Dome group belonging to the Miami Copper Company. East of the ore bearing portion of the Inspiration property is the Miami Copper Company's property. These two mines have produced many millions of dollars.

#### WORKINGS

As intimated above, the development workings consist

of assessment work done superficially to meet the requirements for holding the unpatented claims and securing a patent on them. Also there are an undetermined number of drill holes. The logs or sludge material obtained from them are not available for examination, hence only indicative information can be obtained regarding them.

A description of the assessment work is found in the Appendix, page A. It will be noted in the descriptions of the various workings that references are frequently made to metallic copper occurring in the workings and ore "of an oxidized nature" are referred to in various descriptions. This was supplied to me by the owner of the property and evidently was a compilation of somebody formerly technically connected with the work.

FACILITIES

The terminus of the spur of the Arizona Eastern Railway up to the Live Oak property is approximately one mile down the gulch from the eastern edge of the Needles group. This is a standard gage railway which connects with the main line of the Southern Pacific transcontinental route at Bowie, Arizona.

There is no timber on the property. Minor amounts can be obtained from the local merchants but large quantities would need to be brought in from the outside.

All kinds of fuel must be brought in from the outside.

Power lines enter the camp from the Roosevelt Dam so there is a big consumption by the two major mines of the district. As there will be no need for large quantities of power in the near future for the Needles group, this aspect can be investigated at the time it is contemplated there will be need for it.

There is no equipment nor buildings on the property whatsoever at the present time. During the time the road building and drilling program was being prosecuted, there was a camp in Live Oak Gulch on the Peacock claim which is the most easterly claim of the group. These buildings have entirely disappeared.

#### GEOLOGY

The geology of the region is so well described in U.S.G.S. Professional Paper No. 115 by F. L. Ransome and others that the surrounding geology does not need to be repeated here.

#### ROCKS

The rocks found outcropping on the property in order of their greater age are Pinal Schist, Schultze Granite, Dacite and Gila Conglomerate. The Pinal Schist covers a wide area in this part of Arizona and is host rock for most of the ore of the Miami district. On the Needles group the Pinal Schist where it outcrops is essentially fresh, rather dark green in general appearance

with discontinuous wavy segregations of quartz resembling a large microscopic picture of some germs.

The Schultze Granite is a typical coarse-grained granite, sometimes approaching granite porphyry and where exposed on surface is usually partly weathered and disintegrates readily into the coarse sand. It has the general appearance of containing enough limonite to give a weak yellow cast to the formation. The Schultze Granite is also partly a host rock to the disseminated copper minerals at or near the contact with that part of the Pinal Schists that carry copper bearing minerals.

The Dacite is brown to purplish brown in color, rather earthy in feel and appearance where it outcrops, sometimes containing vugs and is apparently later than the introduction of the ore bearing minerals so that on the Needles group at least no introduced ore bearing mineralization is found in the one small triangular area of the outcrop of this rock at the northeast corner of the Standard No. 5 claim. (See Map 2.)

About half of the area of the Needles group is covered by Quaternary Gila Conglomerate. The fragments of rock in the conglomerate varies in size from fine powder to 10 feet or more in diameter. They consist of all older rocks found in the district and vary from place to place depending upon the proximity of the underlying older rocks. There is further a wide variation in the

degree of consolidation. Some is decidedly firm rock while others retain some of the characteristics of loosely cemented gravel. Occasionally where fragments within the conglomerate contained metallic minerals which have been introduced into the formation from which it was derived there is considerable iron or manganese staining around such boulders. This gives the incorrect impression that some parts of the Gila Conglomerate are ore bearing.

#### MINERALS

There is not a great deal of evidence observable on the surface to indicate that there is a large amount of end-phase introduced mineralization after the intrusion of the Schultze Granite. There is, however, enough to contain positive proof that channels from the magmatic center to this area did permit copper bearing minerals of the character which are found in the commercial ore bodies nearer to Miami to intrude the schist and granite of this area. The first pronounced end-phase intrusion was quite definitely a barren quartz which occurs not uncommonly up to 4 to 6 feet in thickness and striking and dipping in various directions in both the schist and granite. The interesting part of these barren quartz veins is that they formed planes of weakness in the schist and granite for the later copper bearing metallic minerals to follow the general course of the barren quartz veins so that the minerals so outcropping are frequently associated

with these previously barren quartz veins. Prior to the introduction of the barren quartz veins were a series of vein-dikes without any ore-bearing introduced minerals. They range from aplites to alaskitic quartz.

The most abundant outcropping copper bearing mineral is chrysocolla which is conspicuous in its light green color against a dark green schist. The principal places where this occurs are shown on Map 2 in the areas designated for detailed descriptions with numbers 2, 4 and 5. These will be described in more detail later.

Much of the central area of exposed Pinal Schist is covered with a thin layer of broken schist mixed with soil (wash) so that the underlying rock itself is not exposed for inspection. There are, however, sufficient exposures in the gulches to show that the rock-in-place is also somewhat weathered immediately underneath the wash, or in other words, a thin distance from the outcrop into the rock. Much of this Pinal Schist area had a reddish brown cast in color which gives the impression that there are potential ore-bearing possibilities over the whole area. Closer study reveals, however, that the iron staining of this character is due principally to the oxidation of the iron bearing minerals of the schist itself.

#### ORE

It can be deduced from my remarks on the minerals that no ore in quantity which can be beneficiated at a

profit is exposed at surface on any part of the Needles group of claims nor has any been shipped from this property by previous operators so far as the data available to me goes. Consequently all ore which may exist in the property requires development with depth.

#### DETAILS

No. 1 has just been described under Minerals as being the center of a large schist area whose weak iron staining has been caused by the oxidation of the iron bearing minerals in the schist itself.

No. 2 is a cut and adit near the beginning of which an east-west barren quartz vein has been crossed by the working. The vein is about four feet thick and is accompanied on its walls by chrysocolla up to 4" in diameter.

No. 3 is one of the few and best leached Pinal Schist areas found anywhere on the property. It is mildly iron stained and of a spotted nature. It does not have some of the characteristics of leached Pinal Schist which contained disseminated sulphide minerals originally.

No. 4 represents a shallow pit through which shear lines trend and along which chrysocolla occurs in conspicuous quantity but not abundantly. The shear zone strikes roughly parallel to the adjacent schist-granite contact to the south.

No. 5. Chrysocolla occurs in the discovery adit of the Hill Top claim at the extreme southeastern corner of

the property. It is in line with the strong outcrop of chrysocolla which has been developed 100 feet or so south of the south side line in a zone 4 to 6 feet in thickness.

No. 6. The region at this point contains an appreciable quantity of barren quartz veins which has resisted erosion more than the surrounding country rock and has formed a small knoll. Although no outcropping evidence of copper-bearing mineralization was found, it is possible that this area is worthy of a more thorough detailed study especially with the idea of drilling it at some later time with the possibility that copper bearing mineralization may have followed these barren quartz veins part way to the surface but not clear to surface.

No. 7. The contact between the schist and granite on the twin parallel claims extending to the northwest is intermittently exposed under wash. Although at no point along the contact was any copper-bearing minerals found, it nevertheless is a geologic plane of weakness between the copper outcrops on the south part of the Needles and the north part of the Schultze group of claims over towards the copper bearing ore bodies of the Castle Dome group.

No. 8. The contact running S 75 W from the occurrence of chrysocolla at note No. 4 across the Standard Nos. 3 and 14 claims is a favorable direction for the occurrence of mineralization. It is unfortunate that this actual contact is so obscured by wash that a detailed study could not be made of it.

It will be noted, however, that on Map 4 herewith that the more favorable position for the ore bodies of the Miami area was where the Schultze Granite overlaid the schist rather than the reverse as occurs at this point.

#### DATA IN APPENDIX

In the Appendix will be found copies of papers furnished to me by the owner which give some information about work which has been done in the past and which is not now open for confirmation. On account of the scarcity of dependable data, these notes are introduced into the record in order to have in this report some information about what has been done in the past but in no way is vouched for by myself. Unfortunately I do not even know who the authors were of them. The first exhibit is described as being the "Various Workings and Formations in, on Needles Group, Miami Area." The second is a letter on letterhead of the Inspiration Needles Copper Company concerning the results obtained in the drilling of churn drill holes No. 1 and 2. It would appear that at least one sheet in the beginning of this letter is not submitted so that this is only a portion of a letter. The third exhibit is a reconnaissance report on the Geology of the Needles Group by Will Porri, geologist for the Old Dominion Company, in June, 1920.

#### MAPS

Four maps are submitted in the Appendix following

the above written data. No. 1 is the claim map from the tracing of the mineral surveyor so it is more dependable than any other available to me.

Map No. 2 is a composite as indicated in the note on the legend under the map. It contains most of the data which I was able to accumulate during my reconnaissance examination and shows the relations of the geologic factors which can be used for introducing the commercial possibilities of it.

Map No. 3 is a fragmental map of the horizontal projection of the known ore bodies of the district especially part of those belonging to the Inspiration Consolidated Copper Co. at the time Mr. Ransome wrote his report. It is interesting that the orebody so represented has a bow from the Miami ore bodies over through the Inspiration and by the time they reach the Live Oak and Southwestern Miami they trend in a bee line towards the Needles group.

Map No. 4 is a vertical projection along a zigzag line as shown in the key map in the lower lefthand corner. This map is of interest particularly in that it shows a decided pitch downward from the point on the map indicated as the Bulldog Fault. If this dip at the southwesterly end of the map continued to the Needles group, the ore would be at great depth below the surface. However, it is noted further that the orebody is in the schist essentially and in the granite to some extent along the

contact between overlying granite and the underlying schist. This is a factor which must be taken into consideration as well as the apparent pitch of the ore body about 30° south-westerly where it terminates on the map.

#### ECONOMICS

In 1909 Spurr and Cox, Inc. made a detailed geological surface map and Mr. J. E. Spurr wrote a report on the property of The Ray Consolidated Copper Co., Ray, Pinal Co., Ariz., during which J. H. Farrell mapped 1/4 of the area and I mapped 3/4 of it. Later Mr. Ralph Knowland, the Chief Engineer of Ray Consolidated told me that all of the commercial ore was found in that part of the area which we mapped as most favorable. In 1912 Mr. Garrey and I had available for study the churn drill and assay maps of the Live Oak and Southwestern Miami groups west of Miami, Gila County, Arizona, after we had mapped the portions of those areas of those groups which we considered favorable for commercial ore. The commercial areas of those groups which we mapped almost perfectly coincided with the commercial areas proved by the assay maps. With those checks on our geological criteria and the specifications of exploration companies, especially that the disseminated ore should contain 2% copper, we examined the surface evidence of the Needles group. The "refresher" examination Oct. 31 to Nov. 4 this year supports the following conclusions.

### NEGATIVE EVIDENCE

There is no evidence of regional or extensive silification of schist or granite at surface within the Needles group.

There is no evidence of extensive dissemination of copper-bearing primary sulfide ore at surface nor oxidized copper minerals therefrom.

The light-brown staining of the schist in the central area is derived from oxidation of iron-bearing minerals existing as constituent minerals of the schist.

Schist exposures are dominately fresh, neither deeply oxidized or leached at surface which usually occurs over commercial orebodies near surface in the district.

Chrysocolla (copper silicate) which conspicuously outcrops, is confined sharply to distinct, discontinuous veins, zones or walls of earlier barren quartz veins.

Evidence is not clear as to the exact strikes and dips of the granite-schist contacts nor whether they are post-mineral faults or pre-mineral intrusive contacts.

Most of the contacts are obscured by wash.

The Needles surface is higher above sea level than the surface over known orebodies so if commercial orebodies do occur in the Needles ground it might have a thicker waste overburden.

Roughly half of the surface of the Needles group exposes post-mineral Gila Conglomerate, hence about half

of the possibilities for localizing favorable ore-bearing areas is thwarted. The fact that all the surface over the ~~400,000,000~~<sup>400,000,000</sup> tons of ore of the San Manuel Mine near Tiger, Pinal County, Arizona except a triangular area about 100 feet on a side is covered with Gila Conglomerate makes proof of the underlying ore possibilities expensive.

#### FAVORABLE EVIDENCE

Map 3 (Plan) and known occurrences of the commercial ore in the Live Oak and Southwestern Miami groups shows a definite trend towards the Needles ground.

Map 4 (Longitudinal projection) and known occurrences of the orebodies in the Live Oak and Southwestern Miami groups at the westerly end shows a pitch of the known orebodies down 30 degrees southwesterly. If this trend continues indefinitely it would reach great depths on the Needles ground. It is noted, however, that the orebodies follow the granite-schist contact. Such contacts occur at surface on the Needles ground which might bring such contact orebodies as may occur back up closer to surface.

It is well established in the theory of ore-controls in a district that certain bearings of pre-mineral planes of weakness in the country rock are more favorable for ore deposition than others. In the Southwestern Miami area that direction is southwesterly, hence the granite-schist contacts with the southwesterly strikes near the Hill Top, Picnic, Picnic No. 2, Standard No. 3 and No. 14 and the

"bay" of schist between these contacts are the most favorable for localizing undiscovered orebodies in depth.

The above conclusion is substantially confirmed by the presence of all the observable, conspicuous outcrops of chrysocolla on the Needles group localized in this area.

#### CONCLUSIONS

The surface evidence and lack of evidence cannot prove with any degree of certainty that commercial orebodies do occur within the ground of the Inspiration Needles Copper Company.

The easily recognizable outcropping of chrysocolla at several places on the Needles ground along with the geological facts that the primary copper disseminated ores into the older rocks of this area ascended from magmatic centers and the higher elevation of the Needles surface challenges anyone to prove that commercial orebodies do not occur in this ground at greater depth than has been reached in previous drilling.

If such drilling is done it should be started in the vicinity of the chrysocolla outcrops and then extended outward therefrom so long as results are encouraging.

Respectfully submitted,

*Wilbur H. Grant*

San Francisco, Calif.  
Nov. 4, 1947

A - P - P - E - N - D - I - X

INSPIRATION NEEDLES COPPER CO.  
Gila Co. 3-1/2 mi. S82W Miami, Ariz.

List of Workings and Comments  
Date and Author Unknown

Standard #1

Tunnel 30 ft. in fine schist about 100 feet from S.E. end.

Opencut 4 x 6 x 15 about 50 feet S. from this tunnel.

Opencut 6 x 6 x 8 about 50 feet from other opencut.

Tunnel 139 feet in, about 200 feet from S.E. end.

Shaft 6 x 6 x 12 cuts into mouth of this tunnel.

Crosscut in above tunnel 12 feet to N.W. 15 feet from mouth.

Crosscut in above tunnel 30 feet to S.E. 15 feet from mouth.

Crosscut in above tunnel 16 feet to N.W. 72 feet from mouth.

All this work is also in fine schist, some of it will go 11% copper.

Standard #3

30 foot tunnel on S.E. end, granite.

90 foot tunnel on N.W. end in fine schist.

Standard #5

Shaft 20 feet deep in fine red schist 200 feet from S.E. end.

Tunnel 104 feet 100 feet west of this shaft.

Crosscut in 39 feet in tunnel starts N.W. 61 feet from mouth.

Opencut 7 x 10 x 12 about 100 feet north of tunnel, 400 feet N. is shaft 10 feet deep.

100 feet N.W. is opencut 50 feet long, 4 feet wide, 6 feet deep.

100 feet N.W. is 35 foot shaft.

About 100 feet N.W. is 55 foot shaft.

About 50 foot N.W. is a 70 foot tunnel; ten feet N. of mouth of tunnel is a 10 foot shaft; 30 feet N.W. is a 40 foot shaft. All this work is the finest of schist; much of it in ore; oxidized ore shows here for 50 x 150 feet.

Standard #6

Two opencuts 4 x 10 x 12 on S.E. end, both in conglomerate overlaying schist.

Standard #7

Opencut 200 feet from S.E. end, 6 x 10 x 12.  
Tunnel 500 feet from S.E. end 120 feet; both workings in fine altered schist.

Standard #8

Three tunnels on S.E. end of 8, 20 and 50 feet each, all three in fine schist; also opencut 6 x 10 x 12 on N.W. end in granite.

Standard #9

Two opencuts 4 x 10 x 12 on S.E. end, both in conglomerate overlaying schist.

Standard #10

112 foot tunnel in heavily mineralized, ironized schist near center of claim. Two opencuts 6 x 10 x 12 S.E. of tunnel.

Standard #11

48 foot tunnel near S.E. end 24 feet crosscut to N.W. in this tunnel, all in finest schist.

Standard #13

Two opencuts both in conglomerate, over schist.

Standard #14

20 foot tunnel on S. end in fine schist.  
110 foot tunnel 200 feet from S.E. end, crosscut 20 ft. to N.W. 14 feet back from face.  
52 foot crosscut in same tunnel to N.W. 23 feet from mouth, a regular mountain of finest schist here.

Black Eagle

Near S.E. end center is opencut 6 x 10 x 12 in schist.  
About 100 feet N.W. is tunnel 120 feet in fine schist.  
About 100 feet N.W. is tunnel 120 feet in fine schist.

About 150 feet North is tunnel 140 feet in fine schist.  
A 40 foot shaft from surface cuts in to this tunnel  
70 ft. in.

A 5 x 6 x 20 ft. opencut is just to right of 140 foot tunnel.

About 100 feet north of shaft is another 60 foot tunnel, 3 opencuts are within a radius of 100 feet of shaft; all this work is in fine schist, much of it heavily copper stained, some of it ore.

#### Black Eagle #4

96 foot tunnel about center of claim, conglomerate.  
14 foot opencut in granite, well copper stained,  
just N. tunnel.

#### Mispah

15 foot opencut in fine copper stained schist.

#### Mispah #2

30 foot tunnel in fine schist.  
20 foot shaft in fine schist and considerable ore.

#### Picnic

70 foot inclined shaft in fine red schist, some ore.  
40 foot tunnel in fine schist, some ore.

#### Picnic #2

25 foot opencut in fine schist.

#### Big Four

140 foot tunnel in copper stained schist, some sulfides.  
3 foot tunnel in copper stained schist, some sulfides.

#### Boulder

Opencut 15 feet in granite with ore in face.

#### Copper Bug

40 foot tunnel in fine schist.  
15 foot opencut in fine schist.

Hill Top

30 foot opencut in fine copper stained schist.

None Touch

40 foot tunnel in fine schist.

North Star

40 foot tunnel in granite.

Peacock

50 foot tunnel in finest schist about center of claim.

T. K. & M.

15 foot opencut in granite.

Touch-Me-Not

30 foot tunnel in fine schist. Opencut 12 feet.

Other Notes not Included in Patented Claims  
Owned by Inspiration Needles Copper Co.

Standard #2

Shaft 6 x 6 x 12 in fine schist.

Standard #12

20 foot tunnel in granite on S.E. end.  
12 foot cut in conglomerate on N.W. end.

Standard #15

Two opencuts in granite, each about 5 x 10 x 12.

Fraction #1

15 foot opencut in granite.

Fraction #2

15 foot opencut in granite.

Grub Stake

60 foot tunnel in fine schist.

We have built nearly five miles of wagon roads, practically from Live Oak on east to Pinto Creek Road on the west as well as three miles of trails.

INSPIRATION NEEDLES COPPER CO.  
Miami, Arizona .....1917

LETTER REPORT ON DRILL HOLES #1 & #2

June 1916, all of the work done on the property of the Inspiration Needles Copper Co., consisted of cuts and tunnels driven for annual assessment work. Owing to the slight depth of these workings and the much greater depth at which the ore-bodies of the district lie, this work is of no value as far as developing ore is concerned.

In June 1916, churn-drilling was started for the purpose of prospecting the property at depth and Hole No. 1 was started near the northeast corner of the Standard No. 5 claim. Some time later Hole No. 2 was started near the south end of the same claim. Owing to the difficult ground encountered and the small size of the drills, progress was slow on both holes.

Owing to the scarcity of water, Hole No. 2 was discontinued at a depth of 551 feet on Jan. 1, 1917, and used for a water well.

When orders were received to discontinue drilling operations on Feb. 1, 1917, Hole No. 1 had attained a depth of 1,000 feet. Both #1 and #2 holes were in Pinal Schist for their entire depth and for the last hundred feet, Hole No. 1 was in leached schist showing small amounts of native copper. The mineralization of Hole No. 1 is such that I believe the sulphide zone will be encountered within 300 feet.

## RECOMMENDATIONS

I would recommend the completion of the drilling of Hole No. 1 to the sulphide zone. If commercial ore is encountered, drilling should be prosecuted away from No. 1 hole along the trend of the ore zone as determined by subsequent holes. If no ore is encountered in the No. 1 hole, I would recommend the drilling of the Standard No. 6 Standard No. 11 and the northern portion of the Big Four claims.

Heavier drills than the present #24 Stars should be installed as the #24 is too small to economically handle the ground to be penetrated and nothing smaller than a #27 with calf-reel should be purchased. Five thousand dollars will purchase the necessary new equipment as the company is already supplied with all other necessary equipment as small tools, teams, wagons, oil storage tanks, pumping plant, office, store-house and dwellings.

A drill as recommended can be operated continuously for a cost to not exceed \$2,500 per month and two can be operated at considerable less apiece owing to the decreased over-head, teaming, pumping, and sampling costs which will be the same whether one or two machines are operated.

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Mining Engineer

GEOLOGY OF  
INSPIRATION NEEDLES COPPER CO.  
Miami, Arizona June, 1920  
by WILL PORRI

SCOPE OF SURVEY

At the request of Mr. W. G. McBride, General Manager, Old Dominion Company, an examination of the Inspiration Needles Copper Company's property was undertaken.

This report is based on a two days reconnaissance survey of the large area covered by the Inspiration Needles Group of Claims. Maps from F.L. Ransome's P.P. No. 115 were used as a basis for the work. Much of the surface was covered hurriedly while the more interesting ground was more closely studied.

A more detailed survey of some of the structural features is advised. Such doubtful points will be described in the description of the surface geology.

LOCATION AND SURROUNDINGS

The Inspiration Needles Copper Company's group of claims is located about three and one half miles west of the town of Miami, and about one mile from the end of the Arizona Eastern Rail Road. The property is reached by a good road up Live Oak Gulch. This road leads up to the Needles Mountain near the western boundary of the property and is the main line from which a good system of churndrill roads have been built.

The topography is unusually rugged. The gulches are deep and raise steeply to Needles Mountain. Four Main Drainage Systems terminate on the mountain which forms the divide between Pinto Creek and Pinal Creek.

A camp with accommodations for about twenty people is in excellent condition. Water is obtained from shallow wells in the bottom of the gulch.

## GEOLOGY

### FORMATIONS

An excellent description of the rocks found on this property is contained in the old Globe papers and in the recent Miami-Ray paper by F.L. Ransome.

These formations are:

- (1) Gila Conglomerate
- (2) Dacite
- (3) Schultze Granite
- (4) Déabase
- (5) Pinal Schist.

### SURFACE GEOLOGY

The group of claims was laid out to cover the Schist area as shown on the accompanying map. The Schist as well as the property is bounded on the east, south and west by the intruded Schultze Granite. The included Porphyry Consolidated Copper Company's claims and the north boundary is covered by Gila Conglomerate.

The schist exposed on the easterly end of the property is only slightly altered and exhibits, occasionally, some copper stain. Two short tunnels expose stringers of pyrite,

and chalcopyrite and veinlets of quartz. This is typical primary mineralization. In the tunnel on the Ox Bow Copper No. 1, some chalcocite was noted on the pyrite as a thin coating.

A narrow width at the schist-granite contact is slightly more altered and oxidized. Iron stain is prominent only at the contact. Small quartz veinlets are developed in the granite and cause a slight penetration of oxidation. The iron stain is the result of the alteration of biotite contained in the granite.

Away from the contact, the granite is very fresh. These conditions were noted along the whole Schist-Granite contact on the south and west boundaries of the property.

The Schist-Gila Conglomerate contact may a fault as indicated on the map. Ransome shows a normal contact between the two rocks. The Gila Conglomerate here is composed of unsorted angular fragments of schist, ranging in size from sand to boulders of 10 feet in diameter. Some of this material is copper stained but only rarely so. There is a marked difference between this and the conglomerate capping of Needles Mountain and a sharp line separating the two types.

As one passes westward towards Needles Mountain, alteration is more intense. The schist becomes iron stained and contains chrysocolla, serisite, kaolin and pseudomorphic limonite after pyrite. This condition continues westward until the schist is capped by the iron stained conglomerate

of the Needles. Similar conglomerate covers the northern extremity of this zone. The following claims are included in the area: Standards No. 8, 1, 5, 11 and 3; Mispah, Picnic, Picnic No. 2 and part of the "Needles and East Needles of the Miami Consolidated Copper Company." (See area outlined on the map.)

Two drill holes were put down in this area by the present owners in 1912. Hole No. 1 went down 1000 feet and was lost due to caving. The driller's record and some of the samples were examined. The sludge is reported red, brown and a few scattered greys in color. Some native copper chrysocolla, and iron oxide was reported at 800 feet below.

The samples are oxidized, altered schist for the whole depth of the hole, but no copper minerals were found in the few samples examined. The driller's records are incomplete and the sludge samples are in sad disorder and confusingly marked. Drill hole No. 2 was reported in red and brown schist to its depth, 550 ft. This hole was stopped to supply water for No. 1 hole.

Other holes were put down on the Picnic No. 1 and Picnic No. 2 in 1905, but no record is obtainable. These holes are supposed to be less than 700 feet deep.

The Conglomerate on Needles Mt. truly caps the schist. It is composed principally of angular fragments of highly altered, iron stained granite porphyry with minor amounts of schist. The cementing sand is heavily iron stained. Much

of the granite is coated with limonite and in the float, vein quartz with limonite is found. This iron is responsible for the heavy iron stain of the conglomerate. The whole bears a strong resemblance to the oxidized capping of the Inspiration Ore Body.

In the Globe end of the District it is noted that the base of the conglomerate is made up of the underlying formation with increasing amounts of transported material as one passes higher into the formation. This suggests that the altered schist area may have been covered by an iron stained granite capping as is the Inspiration Ore Body. This material may have been eroded from the Inspiration-Miami ore body and transported to Needles Mt.

The iron stained conglomerate extends northward to Webster Gulch. On the slope into Webster Gulch the Conglomerate is made up of dacite boulders, with some schist and a little granite. Here again a sharp line separates this from the previously described light colored conglomerate. Such a line would connect well with the North 30° West fault which passes through the old Continental Mine and is traceable to Webster Gulch.

By replacing the contact boundary on the north side of the schist area by a normal north dipping fault thereby dropping the block of light colored conglomerate between the Live Oak Fault and the Continental Fault, this structural problem would be solved. That the supposed basal beds of the light colored

conglomerate along Live Oak Gulch are not iron stained is good evidence that the contact of schist and conglomerate here is on such a fault.

A narrow strip of unaltered schist lies between the red conglomerate and fresh granite porphyry. As already noted, both the schist and granite are slightly altered and iron stained at the contact. On Black Eagle No. 1 the schist is cut by several quartz veinlets with much iron stain and some chrysocolla.

The eight Arizona Claims are covered with Gila Conglomerate.

#### SUMMARY AND CONCLUSION

From an examination of the facts observed in the brief survey of the Inspiration Needles Copper Company's property the following conclusions are made.

- (1) The rocks exposed on the easterly end of the property contain primary sulphides and therefore an ore body by enrichment is impossible.
- (2) A large area of some 100 acres of oxidized mineralized schist east of Needles Mountain is possibly the leached capping of an enriched body of chalcocite ore. This area warrants exploration by several scout drill holes. Such holes should be drilled deeper than 1200 feet.
- (3) The altered schist area extends under the Gila Conglomerate capping of Needles Mountain.

- (4) The claims west and north of the Porphyry Consolidated Copper Company's holdings are on unaltered schist, largely covered by Gila Conglomerate. Ore bodies are not to be expected in this area.

U.S. GEOLOGICAL SURVEY  
 GEORGE OTIS SMITH  
 DIRECTOR

TOPOGRAPHY

ARIZONA  
 (COCONA COUNTY)  
 MIAMI COPPER BELT

Estimated value of  
 Inspiration Consolidated  
 Copper Co. property, based upon  
 market quotation of issued  
 stock, plus bonds

\$53,500,000  
 Stock \$51.00  
 per share.

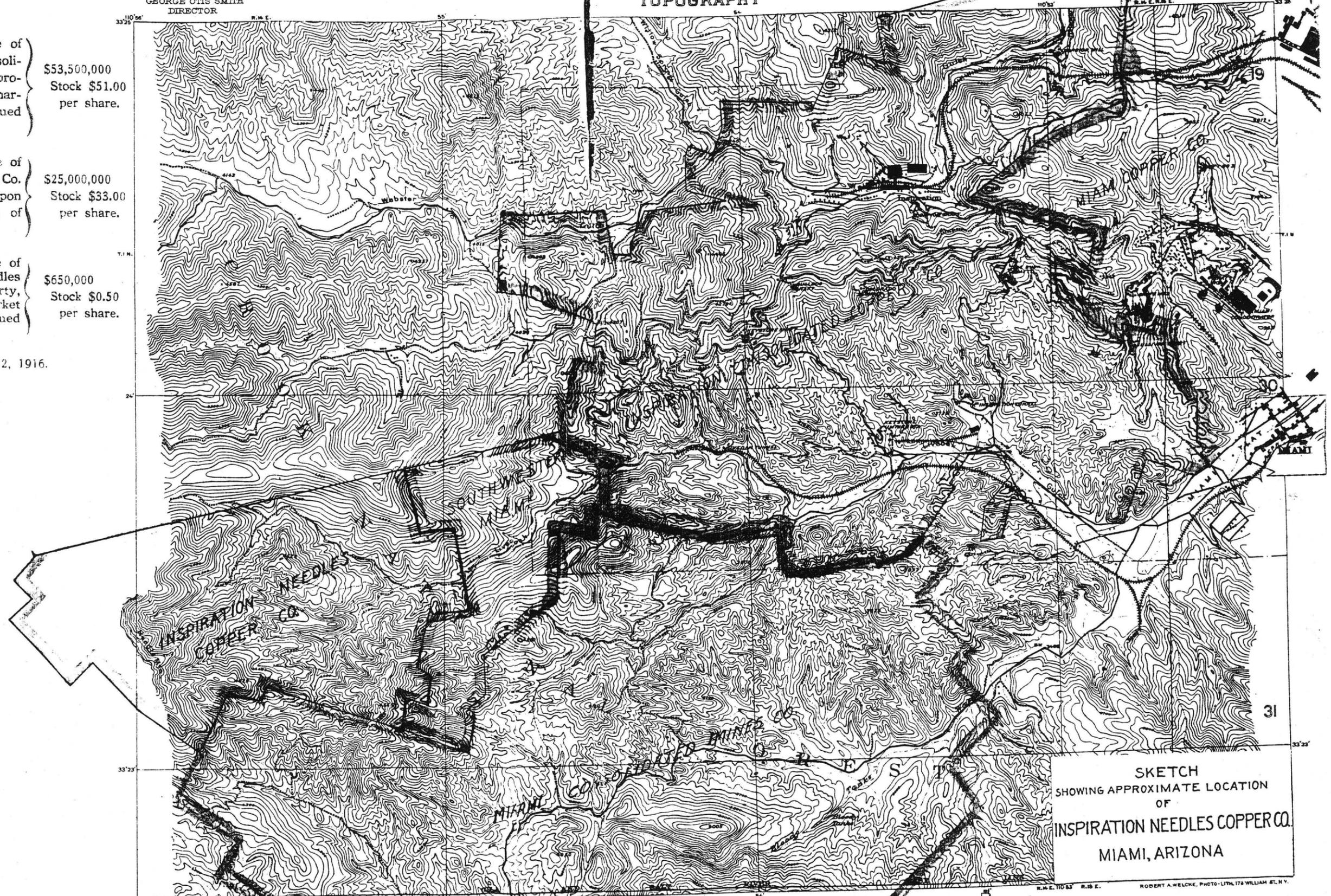
Estimated value of  
 Miami Copper Co. property,  
 based upon market quotation  
 of issued stock

\$25,000,000  
 Stock \$33.00  
 per share.

Estimated value of  
 Inspiration Needles  
 Copper Co. property, based upon  
 market quotation of issued  
 stock.

\$650,000  
 Stock \$0.50  
 per share.

As of date July 12, 1916.

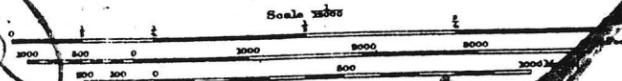


SKETCH  
 SHOWING APPROXIMATE LOCATION  
 OF  
 INSPIRATION NEEDLES COPPER CO.  
 MIAMI, ARIZONA

110 56  
 R.B. Marshall, Chief Geographer.  
 T.G. Gardina, Geographer in charge.  
 Topography by Albert Pike and R.W. Berry.  
 Control by A.H. Thomson and Thomas P. ...  
 Surveyed in 1910.

Berry  
 Pike

(B 2)

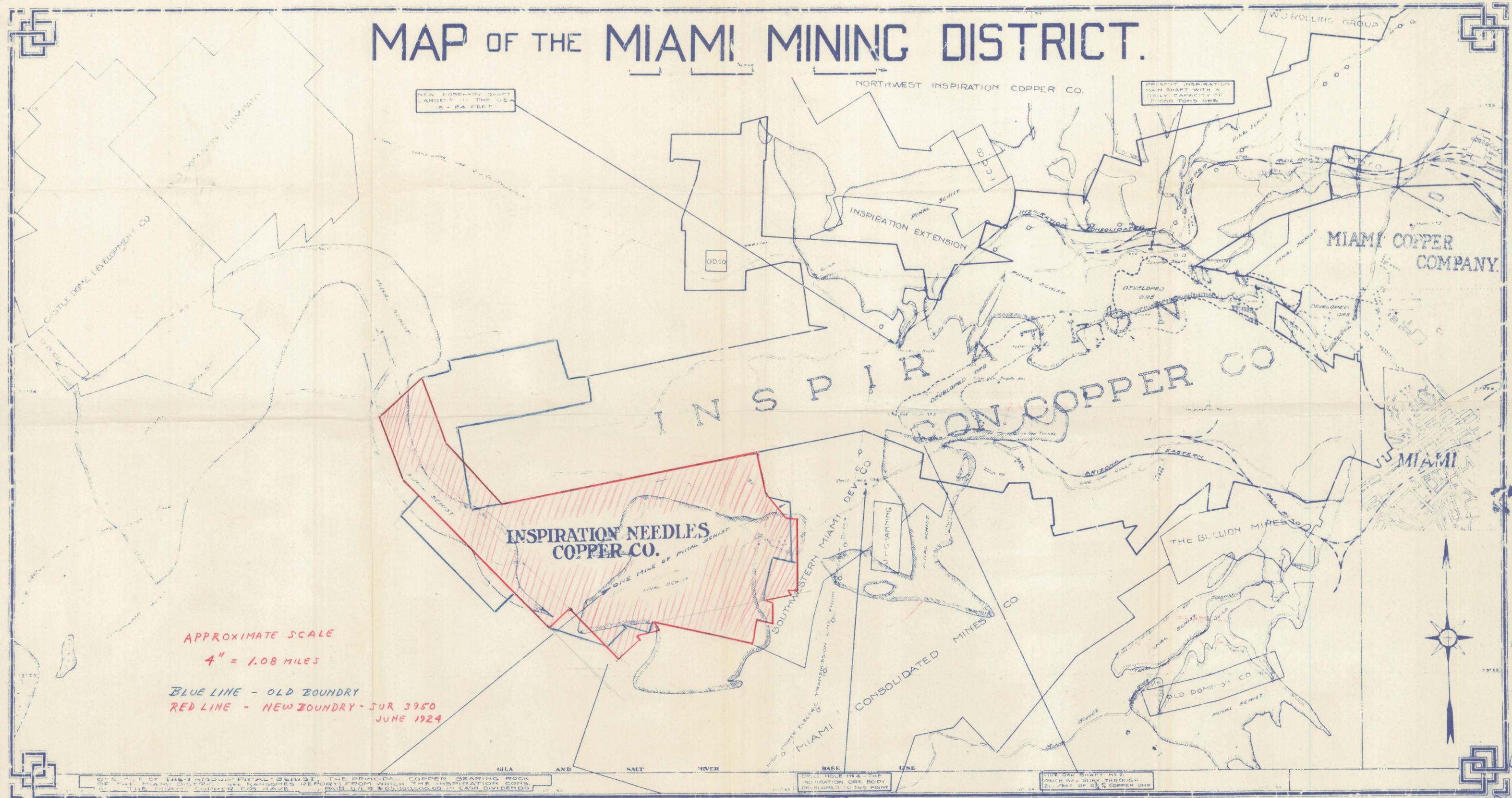


Contour interval 25 feet.  
 Datum for mean sea level.

R.M.E. 110 53 R.B.E. ROBERT A. WELCKE, PHOTO-LITH. 173 WILLIAM ST. N.Y.

MIAMI COPPER BELT

# MAP OF THE MIAMI MINING DISTRICT.



APPROXIMATE SCALE  
4" = 1.08 MILES

BLUE LINE - OLD BOUNDRY  
RED LINE - NEW BOUNDRY - SUR 3950  
JUNE 1924

ONE PER CENT OF INSPIRATION PINAL SCHIST, THE PRINCIPAL COPPER BEARING ROCK OF THE MIAMI DISTRICT, (SEE RANDOMES REPORT) FROM WHICH THE INSPIRATION CONS. AND THE MIAMI COPPER CO. HAVE PAID 9 1/2 PER CENT IN CASH DIVIDENDS.

DRILL HOLE NO. 4 - THE INSPIRATION ORE BODY DEVELOPED TO THIS POINT

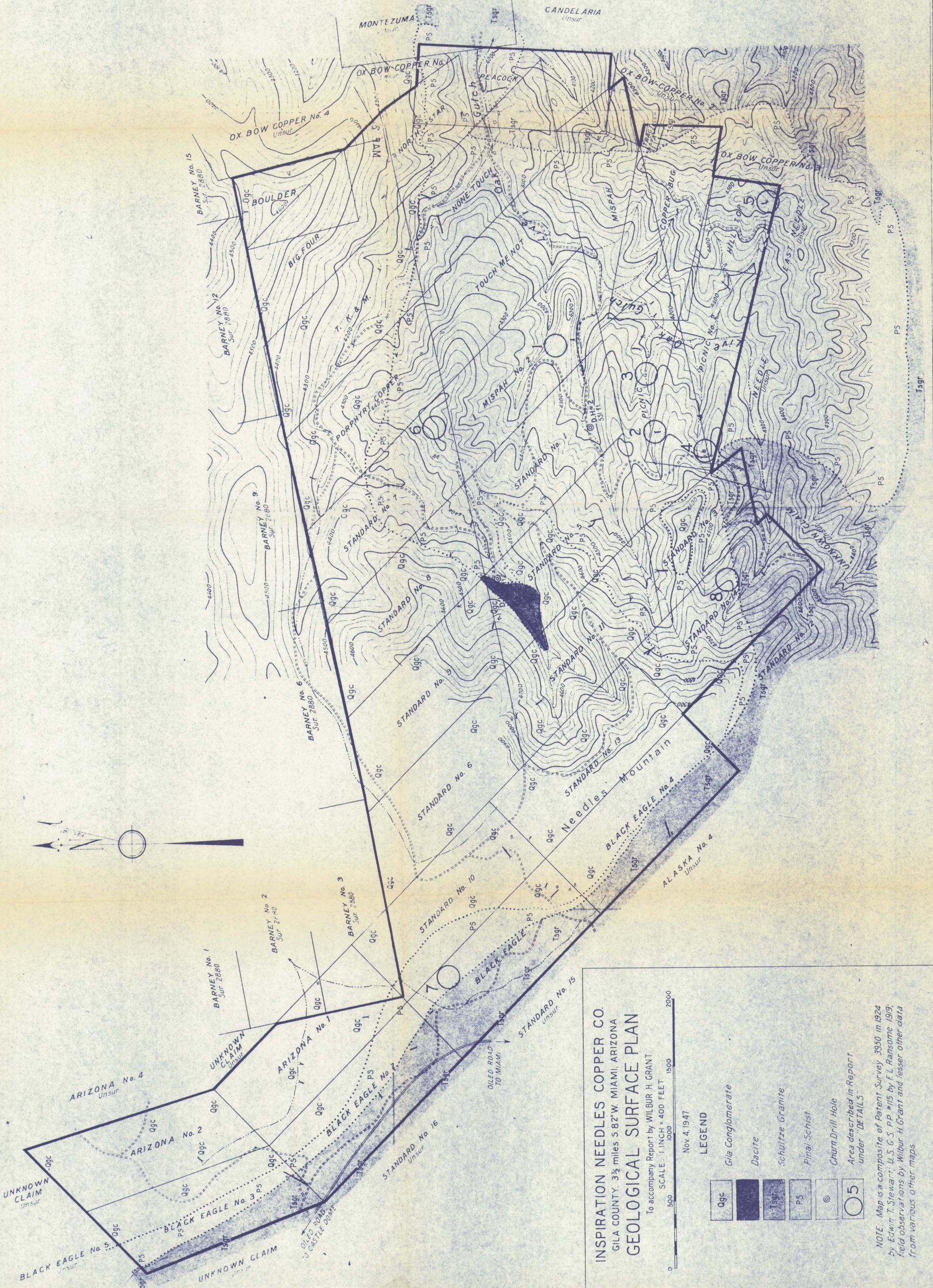
THE S&W SHAFT NO. 2 WHICH HAS BORE THROUGH 210 FEET OF 2 1/2 PER CENT COPPER ORE

550,000 Acres patented, Recorded in Book 17 of Mines Page 7

Book 17 - P. 331 - 578 1/2 Acres.

Misc





**INSPIRATION NEEDLES COPPER CO.**  
 GILA COUNTY, 3 1/2 miles S. 82° W. MIAMI, ARIZONA  
**GEOLOGICAL SURFACE PLAN**

To accompany Report by WILBUR H. GRANT

Nov. 4, 1947  
 SCALE: 1 INCH = 400 FEET

0 500 1000 1500 2000

**LEGEND**

- Gila Conglomerate
- Dacite
- Schultze Granite
- Pinal Schist
- Churn Drill Hole
- Area described in Report under "DETAILS"

*NOTE: Map is a composite of Patent Survey 3950 in 1924 by Edwin T. Stewart; U. S. G. S. P. #15 by F. L. Ransome 1919; field observations by Wilbur H. Grant and lesser other data from various other maps.*