DRAFT

MF-200A
(Revised June 1954)

Docket No. DMEA 3937

Commodity Mercury

Contract No. Idm-E

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
EXPLORATION PROJECT CONTRACT[1]
(Short Form)

It is agreed this ..... day of ....., 195...., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] International Ore Corporation, a corporation Delaware, whose mailing address is Box 1091, Wickenburg, Arizona, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200A), the attached Exhibit "A," Annex I, and maps

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of Arizona, County of Maricopa, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] owner and lessee of [5] all rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] locations and a lease recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: lease royalties

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title of the land (lessor, seller, optionor, etc.), are attached, as follows: Consent to Lien

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 7, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 7(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of mercury The work to be performed is described in Exhibit "A." The Operator on or before ..... shall commence the work, and on or before September 30, 1956 (unless the Operator's obligation to complete the work is terminated—see Article 8) shall complete the work.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—A fixed cost for each unit of work to be performed (per foot of drifting, per foot of drilling, per hour of operations, etc.) is hereby agreed upon, and is set forth in Exhibit "A" in connection with the estimated total cost of the project in the sum of $14,880.00 The Government will contribute 75 percent of the fixed unit costs as work is performed, in a total sum not in excess of $11,160.00: *Provided,* That until the Operator has rendered to the Government his final report, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of 10 percent of the estimated total cost of the work. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 6(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. To the extent that excesses over fixed unit costs or any excess over the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such excesses for his own account without contribution by the Government. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing a detailed statement of units of work performed during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and the fixed unit costs incurred for each type of work; and (3) a Narrative Report of the work

performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records or accounts.

ARTICLE 7. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 6) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

(For instance: the royalty on an amount of five dollars ($5.00) per ton would be one and one-half (1½) percent; on an amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 8. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon the Government shall be free of all obligation to pay on account of units of work not then performed, and the Operator shall be free of all further obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 8 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 9. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 10. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 11. *Changes and added provisions.*—

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

.....
(Operator)

By .....

By .....

.....

I, ..., certify that I am the ..... secretary of the corporation named as Operator herein; that ..... who signed this contract on behalf of the Operator, was then ..... of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

.....

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—70618-1

DRAFT

EXPLORATION PROJECT CONTRACT
INTERNATIONAL ORE CORPORATION
DOCKET NO. DMEA-3937

ANNEX NO. I

mercury claims 1-21, International Ore Corp., Maricopa County, Ariz." The land

The land referred to in Article 2 of the contract form ~~and~~ is shown on the ~~attached~~ Figure 2, entitled "Claim map," consists of ~~16~~ 21 unpatented lode mining claims ~~owned by the applicant by right of location~~ ~~and 15 lode mining claims owned by George Cline by right of location and leased to D. W. Simpson, president of the International Ore Corporation, by a "Mining Contract and Agreement" dated June 16, 1954.~~ unpatented

~~These claims are~~ located in unsurveyed section 31, T. 8 N., R. 9 E., Sunflower Mining District, Maricopa County, Arizona. ~~and are~~ The notices of location of these claims are recorded in the ~~Office~~ of the County Recorder as follows:

Name of Claim	Claims Owned by ~~Applicant~~ Operator	Book No.	Page No.
Mercury No. 1		1405	435
Mercury No. 2		1405	436
Mercury No. 3		1405	437
Mercury No. 4		1405	438
Mercury No. 5		1405	439
Mercury No. 6		1405	440
Mercury No. 7		1479	330
Mercury No. 8		1405	441
Mercury No. 9		1479	331
Mercury No. 10		1405	442
Mercury No. 16		1479	332
Mercury No. 17		1479	333
Mercury No. 18		1479	334
Mercury No. 19		1479	335
Mercury No. 20		1479	336
Mercury No. 21		1479	337

Heading [Claims owned by George Cline and lease thereon held by Operator, by ~~Leased to Applicant~~ successive ~~by~~ assignment ~~through~~ from D. W. Simpson, and

Turnbull No. 1	1161	1
Turnbull No. 2	1160	599
Turnbull No. 3	1160	600
Turnbull No. 4	1168	2
Turnbull No. 5	1186	3

~~D. W. Simpson, assigned equal portion of "Mining Contract and Agreement" to~~ Tom H. Donaldson and Jesse H. Lockhausen, ~~and in turn it was turned over to the International Ore Corporation for stock. It will be necessary to obtain these documents from~~

~~Location~~	Book	Page	Upon relocation, Also known as ~~Relocation~~	Book	Page
Turnbull No. 1	1161	1	Mercury No. 11	1404	265
" " 2	1160	599	" " 12	"	266
" " 3	1160	600	" " 13	"	267
" " 4	1161	2	" " 14	"	268
" " 5	1086	3	" " 15	"	269

~~applicant and an Owner's Consent to Lien from George Cline~~, the owner of the Turnbull claims.

The applicant advises that the Turnbull claims were relocated by the applicant as the Mercury 11 to 16, inclusive. In order to do this, it would be necessary for Cline to abandon the claims and make a special agreement with the applicant.

DRAFT

International Ore Corp., Maricopa County, Ariz.,

EXPLORATION PROJECT CONTRACT
INTERNATIONAL ORE CORPORATION
DOCKET NO. DMEA-3937

EXHIBIT "A"
Description of the Work

~~Attached maps are as follows:~~ The following maps are attached hereto and made a part hereof:

Figure 1, entitled "Location Map, Mercury Claims 1-21, International Ore Corp, Maricopa County, Ariz." showing location of the property.

Figure 2, entitled "Claim Map, Claims owned by applicant outlined in blue; those under lease outlined in red.

Figure 3, entitled "DMEA 3937 Pine Mountain Mine, Maricopa County, Ariz." Plan and Section, showing locations of ~~the~~ proposed holes."

1. Bulldoze access roads (and drill sites) for diamond drill holes 1, 2, and 3. 8 hours.

2. Diamond drill 3 holes vertically approximately at points indicated in Figure 3. These holes should cut "B" and "C" ore channels at a point approximately 130 feet, on dip measurement, below the 3rd level and then extended to cut the "A" ore channel. These holes to be not less than AX in size and are to be cemented and redrilled or reamed and cased as necessary. The holes shall not exceed a depth of 500 feet each or a total of 1,500 feet.

3. Diamond drill 4 holes to cut the "A" ore channel below the southeast end of the open cut and the lower adit. The location of these holes will be dependent on accessible area in the open pit or they may be drilled from underground if the new work by the Operator finds an encouraging area. These holes

should be about 40 feet apart and may be vertical or inclined, but shall be located to cut the ore zone at approximately 100 feet below the lower adit. These holes shall be not less than AX in size and are to be cemented and redrilled or reamed and cased as necessary. Each hole shall be from 100 to 150 feet in depth, the total not to exceed 600 feet. The location of these holes and the dip shall be dependent on the consent of the Government in writing.

4. All cores in mineralized zones shall be split and assayed for mercury. Holes may be drilled in any order.

Estimated Cost of Project
Fixed Unit Costs

Bulldozing access roads and drill sites 8 hours at $14.00 per hour	$ 112.00	
Diamond drill holes, 2,100 feet at $6.00 per foot	12,600.00	
Cementing, redrilling, reaming, and casing. 1,000 feet at $2.00 per foot	2,000.00	
Assaying 42 samples at $4.00 each	168.00	
Estimated total cost of project		$14,880.00
Government participation, 75%		$11,160.00

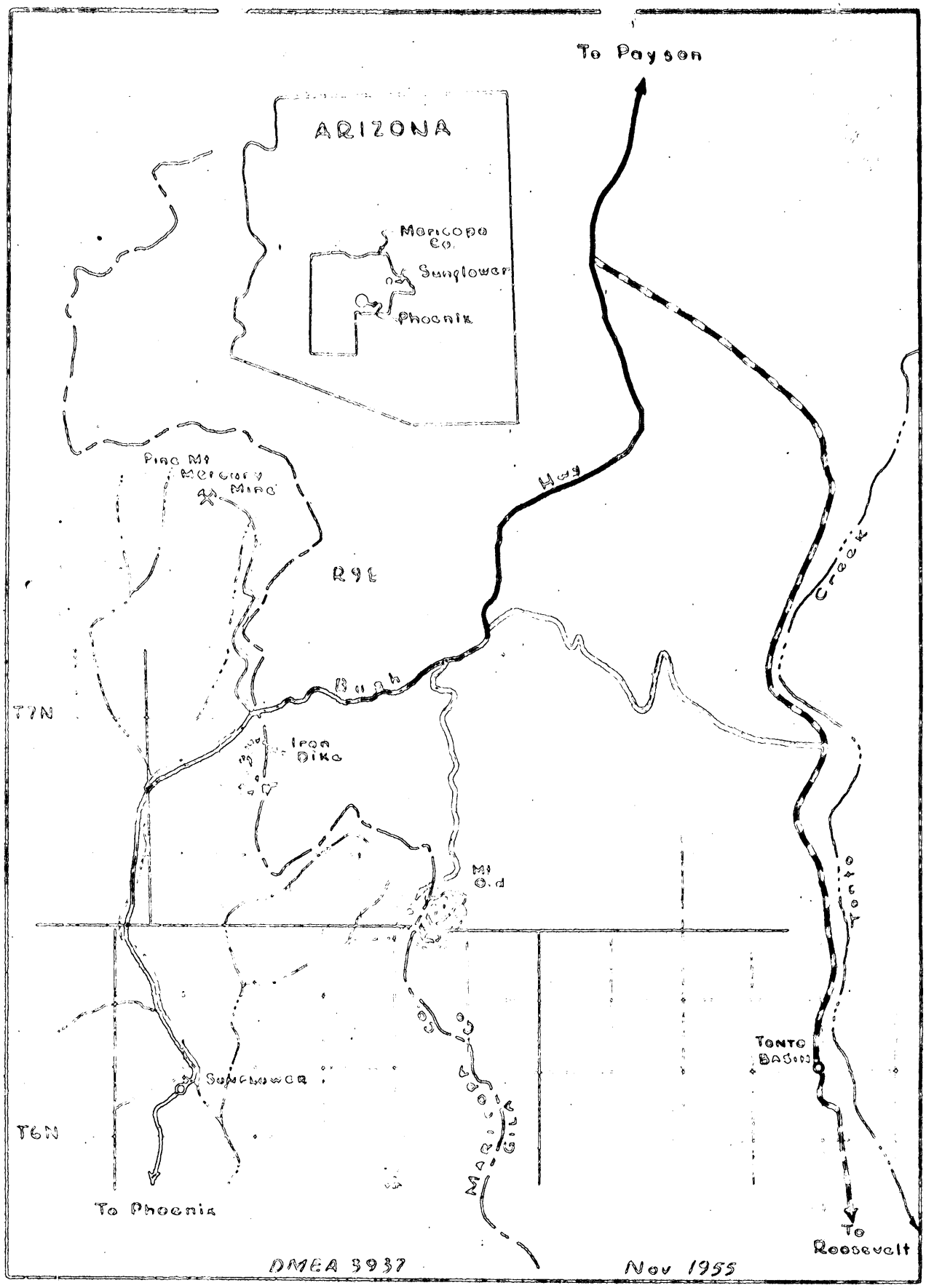
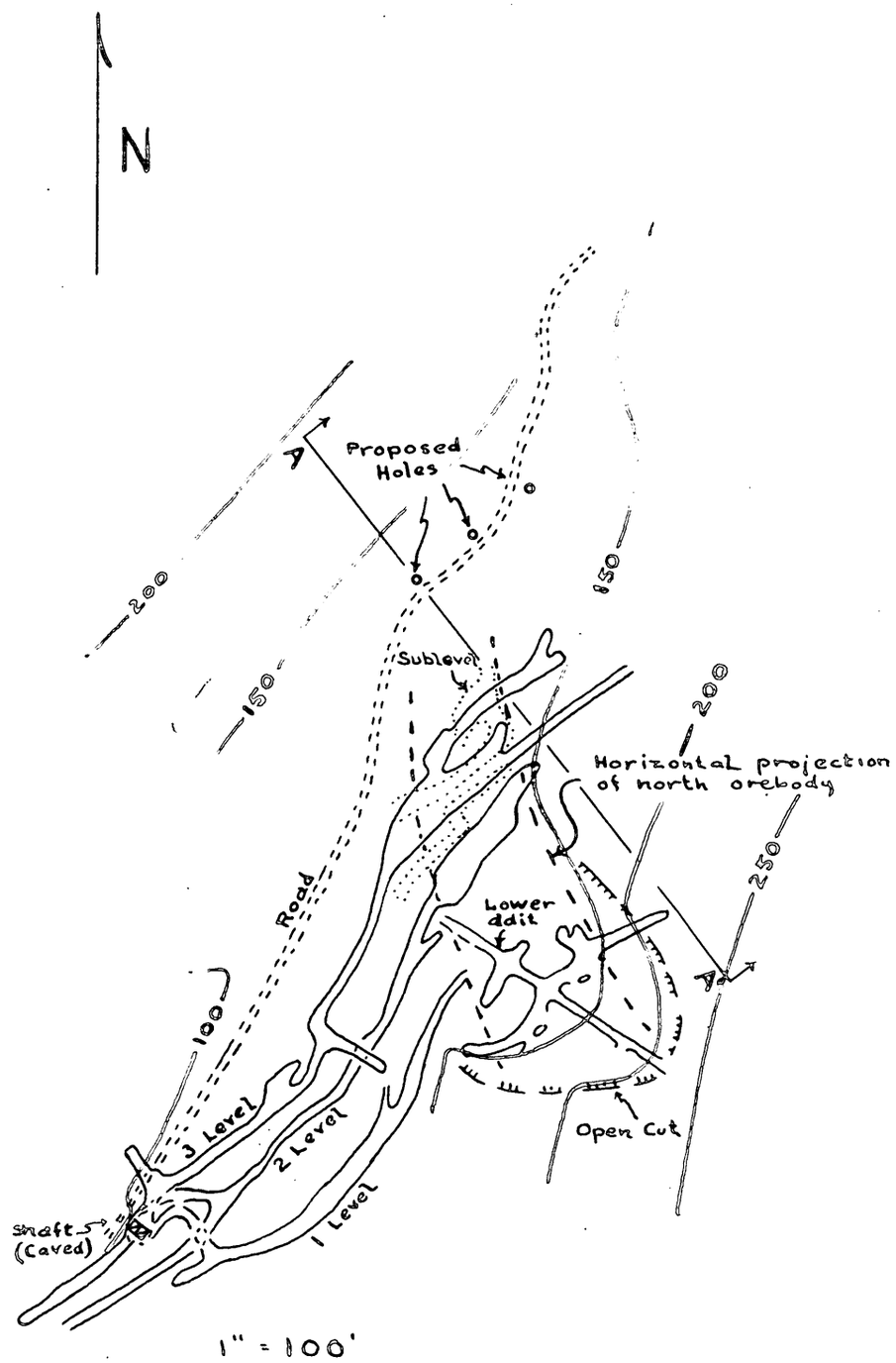
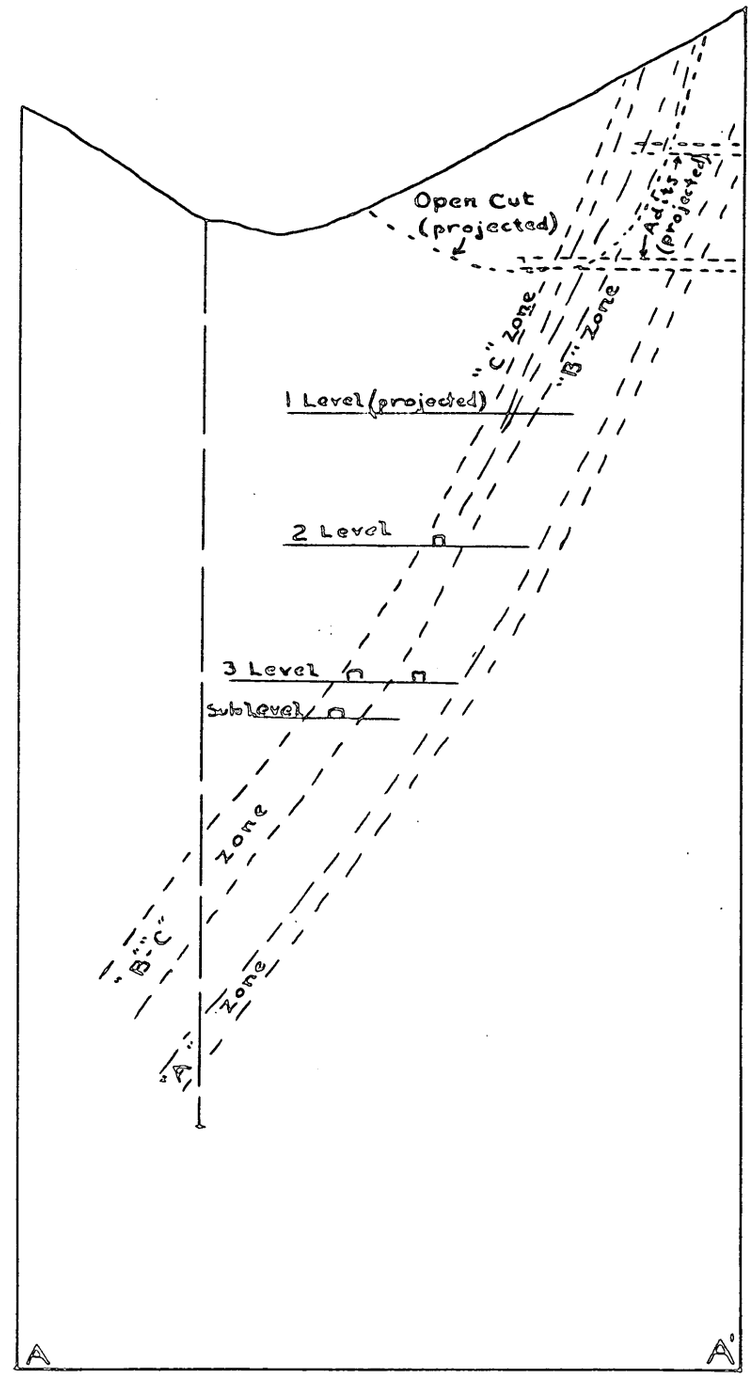


FIG 1 LOCATION MAP, INTERNATIONAL ORE CORP.

MARICOPA COUNTY, ARIZ





DMEA 3937

PINE MOUNTAIN MINE, MARICOPA COUNTY, ARIZONA

Plan & Section Showing Locations of Proposed Holes

FIG. 3

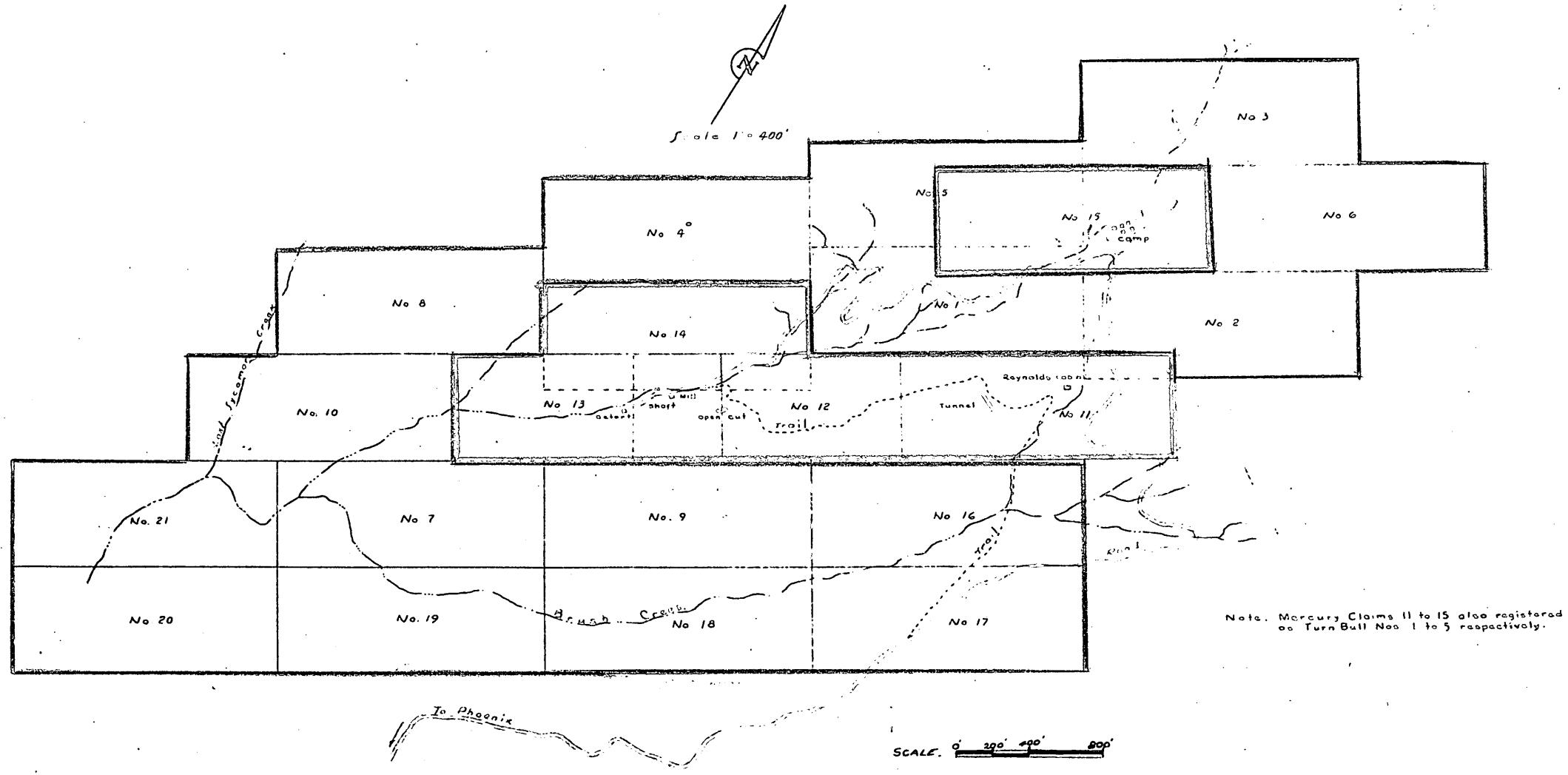


FIG.-2-CLAIM MAP, MERCURY CLAIMS 1-21, INTERNATIONAL ORE CORP, MARICOPA COUNTY, ARIZ.

400

JUN - 8 1956

Withdrawn

Mr. Jesse H. Lochausen, Jr.
Acting President
International Ore Corporation
2427 Arizona Street
El Paso, Texas

Re: Docket No. DMEA-3937, Mercury
Pine Mountain Mercury Mine
Maricopa County, Arizona

Dear Mr. Lochausen:

By letters of March 19 and May 1, 1956, Mr. [illegible] M. Trover, Executive Officer, DMEA Field Team, Region III, requested you to furnish data by not later than June 1 to clarify title and control status of the claims covered by the above-referenced application.

Inasmuch as no reply has been received to either of the Field Team's above-mentioned letters, we presume you are no longer interested in the proposed exploration project. We are, therefore, removing the application from our active files and closing the docket.

Sincerely yours,

G. O. Mittendorf

Administrator

cc: Docket
Code 400
Adm. Read. File
Thor Kiilsgaard, USGS
J. W. Pennington, USBM
Field Team, Region 3

LScott
6/7/56

400

June 7, 1956

MEMORANDUM

To: Mr. Robert E. Adams, Chief
Operations Control & Statistics Division

From: Chief, Iron and Ferro-Alloys Division

Subject: Docket No. DMEA-3937, Mercury
International Ore Corporation
Pine Mountain Mercury Mine
Maricopa County, Arizona

After considerable correspondence with the applicant requesting information to clarify title to the subject property, the Field Team by letter of May 1, 1956, notified the applicant that the docket would be closed unless the required data were supplied by June 1.

By letter of June 5, the Field Team informed the Chairman, Operating Committee, that the applicant has not provided the needed information.

Accordingly, the application is being removed from the active files and is transmitted to you herewith.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

Attachment

cc: Docket
Code 400
FT, Region 3
Adm. Read. File

LScott
6/7/56

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

RECEIVED
JUN - 7 1956

400

June 5, 1956

~~224~~ New Customhouse
Denver 2, Colorado

Memorandum

To: Chairman, Operating Committee, DMEA

From: Field Team, Region III

Subject: DMEA Docket 3937 (Mercury), International Ore Corporation (Pine Mountain Mercury Mine), Maricopa County, Arizona

We have had no reply to our letter to the Applicant dated May 1, 1956, and we presume that he is no longer interested in the proposed exploration project. We recommend that you close this docket.

DMEA Field Team, Region III

W. M. TRAVER,

By W. M. Traver
Executive Officer

Copy retained 400

400

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

May 1, 1956

224 New Customhouse
Denver 2, Colorado

RECEIVED
MAY 3 - 1956

Mr. Jesse H. Lochausen, Jr.
Acting President
International Ore Corporation
2427 Arizona Street
El Paso, Texas

Re: Docket DMEA 3937 (Mercury) Pine Mountain Mercury Mine, Maricopa County, Arizona

Dear Mr. Lochausen, Jr.:

We have had no reply to our letter of March 19, 1956 in which we requested the following:

1. Copies of Assignments from D. W. Simpson to Tom H. Donaldson and Jesse H. Lochausen and from them to International Ore Corporation

2. The Agreement between Cline and International Ore Corporation for the relocation of the Turnbull claims as Mercury claims 11-15, inclusive

3. A complete brief on the Turnbull claims

If we do not receive the above-mentioned data by June 1, 1956, we will presume that you are no longer interested in the proposed exploration project, and we will close the docket.

Very truly yours,

W. M. TRAVER,

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:ab

cc: Docket 3937
Chair. Op. Comm. (2)
Harshman
Chron.

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

400

RECEIVED
MAR 22 1956

March 19, 1956

224 New Customhouse
Denver 2, Colorado

Copy retained 400

Mr. Jesse H. Lochausen, Jr.
Acting President
International Ore Corporation
2427 Arizona Street
El Paso, Texas

Re: Docket DMEA 3937 (Mercury), Pine Mountain Mercury Mine, Maricopa County, Arizona

Dear Mr. Lochausen, Jr.:

To clarify the titles and control status of the claims involved in your application for DMEA aid, we shall need the documents referred to in your letter of February 29, 1956 which are:

1. Copies of assignments from D. W. Simpson to Tom H. Donaldson and Jesse H. Lochausen, and from them to International Ore Corporation

2. The agreement between Cline and International Ore Corporation for the relocation of the Turnbull claims as Mercury claims 11-15 inclusive

3. A complete brief on the Turnbull claims

When we receive the above data, we will continue to process your application.

Very truly yours,

W. M. TRAVER,

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:ab

cc: Chair. Op. Comm. (2)
Harshman
Docket 3937
Chron.

MAR 15 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3937 - Mercury
International Ore Corporation
Pima Mountain Mercury Mine
Maricopa County, Arizona

Dear Mr. Traver:

Reference is made to your memorandum of March 6, 1956, with enclosed copies of a letter by Jesse H. Lochausen, Jr., Acting President, International Ore Corporation, dated February 29, 1956, regarding the subject application.

To clarify the titles and control status of the claims involved we shall have to see the documents referred to in Mr. Lochausen's letter before we can prepare an Owner's Consent to Lien. We shall appreciate your notifying the Operator accordingly.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

APPROVED:

/s/ Robert W. Geehan

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

AIMcMahon/foc 3/13/56
cc to: Docket
Code 400
Admr. Read. File
Operating Comm.
FT. REG. III
H. M. Meyer, USBM
T. H. Kiilsgaard, USGS

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

40

March 6, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3937 (Mercury), International Ore Corporation, Pine Mountain Mercury Mine, Maricopa County, Arizona

This responds to your letter of February 20, 1956 on the subject docket.

Enclosed are two copies of a reply to our letter to the applicant dated February 24, 1956. It is not clear to us if an Owner's Consent to Lien could be prepared at this time for the signature of George C. Cline. It is so legally involved that we request you to prepare the Owner's Consent to Lien in your office at the proper time in accordance with the agreement in the last paragraph on page one of your letter of May 23, 1955. We will forward you all further information which the applicant submits.

W. M. TRAVER

W. M. Traver

Enclosures

February 29, 1956

2427 Arizona Street
El Paso, Texas

DMEA
Date Rec'd

MAR 5 1956

Bureau of Mines
Denver

Mr. W. M. Traver
United States Department of Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Re: Docket DMEA 3937 (Mercury)
Pine Mountain Mercury Mine,
Maricopa County, Arizona

Dear Mr. Traver:

In answer to your letter of February 24, 1956, I suggest that you prepare Consent to Lien for George C. Cline's signature and forward same to us as soon as possible. Meanwhile, I will get copies of assigments from D.W. Simpson to Tom H. Donaldson and Jesse H. Lochausen, and from them to International Ore Corporation, also the agreement between Cline and International Ore Corporation for the relocation of the Turnbull claims as Mercury Claims 11 - 15 inclusively.

I will forward the above to you as soon as possible along with a complete brief on the Turnbull Claims.

At this time I wish to advise you that D. W. Simpson is no longer affiliated with the International Ore Corporation. Please address your correspondence to me at 2427 Arizona Street, El Paso, Texas.

Yours very truly,

Jesse H Lochausen Jr

Jesse H. Lochausen, Jr.
Acting President
International Ore Corporation

C O P Y

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

May 23, 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Dear Mr. Traver:

This is to answer some of the questions which arose during our recent conversations in Denver.

In the case of sacking charges--George Jump, DMEA 2343 -- their allowance of disallowance depends upon who retains title to the concentrate. If Mr. Hennings, the lessee, sells the ore to the mill and thereafter retains no title to the concentrate, the sacking charges are not liable to royalty payment but are considered as part of the mill's charges. If Mr. Hemmings is sending the ore to the mill to be beneficiated on a toll basis, retains title to the concentrate, and subsequently sells it to a third party, then the sacking charges are not allowable deductions from sums subject to royalty payment. The same is true for the milling charge.

The Iron and Ferro-Alloys Division is now writing you a letter concerning royalties on the Cold Spring project, DMEA-1447.

Washington does not believe that it is necessary to participate in lime assays on uranium ores. However, if you believe that they should be made in certain cases, Washington would have no objection.

Legal has stated that it is not necessary for an applicant to submit signed copies of leases. Copies of leases showing typed signatures are suitable for contract purposes with possibly rare exceptions in the case of very large contracts.

In the future we shall send you either a rough draft of an Owner's Consent to Lien showing the type of data that should be included in the lien, or we shall supply you with the necessary number of completed copies which you can submit to the applicant for signature.

We re-confirm our explanation to you that DMEA will not participate in rehabilitation solely for examination and with no definite target in mind.

With regard to uranium applications, we believe that it would be well that all applicants submit copies of at least three drilling bids regardless of whether the drilling is to be done by independent contractors or by the applicants. Formerly it was common practice to require bids for all drilling that was to be done by independent contractors.

We have checked our files for settlement sheets relating to certified projects in the States formerly included under old Region V. We also find that our files are not complete. Apparently there have been only three projects which have made royalty payments. We shall attempt to secure settlement sheets for the payments that have been made and at the same time secure copies for your files.

Shortly we shall send you a letter for your comment outlining a suggested handling of the uranium applications as discussed in Denver and here in Washington.

We wish to thank you and Mr. Harshman and all the members of your staff for the many courtesies shown us on our recent trip to the Plateau.

Sincerely yours,

/s/ George C. Selfridge

Chairman, Operating Committee

APPROVED:

/s/ J. H. Hedges
Member, Bureau of Mines

/s/ Thor H. Kiilsgaard
Member, Geological Survey

GCSelfridge/esf 5/19/55
cc to: Mails & Files
Admr. R. File
Oper. Comm.
Messrs. J. H. Hedges, Rm. 3612
T. H. Kiilsgaard, Rm. 5224
J. L. Hofflund, Rm. 7351

P. S. Enclosed are two copies of a memorandum by the Acting Assistant Solicitor, dated May 20, 1955, relating to sacking charges.

Mittendorf
Chambers
Johnsen
Selfridge

C O P Y

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

May 23, 1955

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DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

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We wish to thank you and Mr. Harshman and all the members of your staff for the many courtesies shown us on our recent trip to the Plateau.

Sincerely yours,

/s/ George C. Selfridge

Chairman, Operating Committee

APPROVED:

/s/ J. H. Hedges
Member, Bureau of Mines

/s/ Thor H. Kiilsgaard
Member, Geological Survey

GCSelfridge/esf 5/19/55
cc to: Mails & Files
Admr. R. File
Oper. Comm.
Messrs. J. H. Hedges, Rm. 3612
T. H. Kiilsgaard, Rm. 5224
J. L. Hofflund, Rm. 7351

P. S. Enclosed are two copies of a memorandum by the Acting Assistant Solicitor, dated May 20, 1955, relating to sacking charges.

Mittendorf
Chambers
Johnson
Selfridge

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

400

RECEIVED
FEB 27 1956

February 24, 1956

224 New Customhouse
Denver 2, Colorado

Copy retained 400

Mr. David W. Simpson, President
International Ore Corporation
Box 1090
Wickenburg, Arizona

Re: Docket DMEA 3937 (Mercury), Pine Mountain Mercury Mine, Maricopa County, Arizona

Dear Mr. Simpson:

Additional information is required before we may continue to process your application.

Your application states that the property to be explored consists of 21 claims. As to sixteen claims, designated Mercury Nos. 1-10 inclusive, and 16-21, inclusive, located by the applicant, the application appears to be clear. This letter, therefore, pertains only to the remaining five claims.

The application states as follows:

"The five (5) other mining lode claims were acquired by purchase contract between D. W. Simpson, purchaser and George Cline, seller. A copy of said contract is attached and captioned exhibit "a". Said contract calls for the delivering of eight (8) mining lode claims, however, upon proper survey said contract delivered only five (5) claims known as Turnbull #1 through Turnbull #5. There is no dispute between seller and purchaser and said claims are known by virtue of an agreed upon relocation Mercury #11 through #15. D. W. Simpson as purchaser was acting as an individual, however, he represented himself and Tom H. Donaldson and Jesse H. Lochausen, Jr. in a joint venture. The contract executed between Mr. Simpson and George Cline has been assigned in its proper proportions to Tom H. Donaldson and Jesse H. Lochausen and transferred into International Ore Corporation in exchange for the proper portion of common stock of said company."

The Mining Contract referred to in the above quotation mentions

nine claims designated as Turnbull, and Turnbull Nos. 1-8, inclusive. The map shows only five such claims designated as Mercury Nos. 11-15 inclusive. The file contains no copies of the assignments mentioned, or of any other documents by George Cline.

1. It is unclear whether the book and page references to the claims designated in the Mining Contract as Turnbull Nos. 1-5 as shown in the Mining Contract between Cline and Simpson are the proper references to the 5 claims intended to be covered by the proposed Exploration Project Contract, or whether, as a result of the survey mentioned in the above quotation, the claims to be included in the proposed exploration contract cover parts of the land covered by the Turnbull and Turnbull Nos. 6-8 claims, inclusive, mentioned in the Mining Contract.

2. It is unclear whether the relocation mentioned was by Cline, or by Simpson, or by the applicant corporation. If by Cline, then Cline should supplement the Mining Contract so as to make clear that the relocated claims are covered thereby. If the relocation was by the applicant, it would seem that since the applicant held its interest in the lands pursuant to the Mining Contract with Cline, it could not relocate the lands so far as cutting off Cline's rights in the lands are concerned, unless Cline either expressly abandons them or makes a special agreement to that effect. In either case, a copy of the document executed by Cline should be furnished to the Government. Furthermore, if Cline still has an interest in the land, his Consent to Lien will be required and upon advice from you, the necessary forms for his Consent to Lien will be prepared in this office and forwarded you for Cline's signature. Copies of the assignments from Simpson to Donaldson and Lochausen, and from them to the applicant, should also be furnished to the Government.

When we receive the above additional information, we will continue to process your application.

Very truly yours,

W. M. TRAVER,

W. M. Traver
Executive Officer, IMEA
Field Team, Region III

HMC:ab

cc: Chair. Op. Comm. (2)
Harshman
Storms
Docket 3987
Chron.

FEB 20 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
22h New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3937 - Mercury
International Ore Corporation
Pima Mountain Mercury Mine
Maricopa County, Arizona

Dear Mr. Traver:

Enclosed are two copies of a memorandum dated February 15, 1956, regarding the subject application. The memorandum is self-explanatory.

Please note particularly the portion thereof starting with the third sentence of paragraph no. 2 on the second page.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosure

WSMartin/foc
2-16-56
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG. III
H. M. Meyer, USBM
T. H. Kiilsgaard, USGS

APPROVED:

/s/ Robert W. Geehan
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

400

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

FEB 1958

Memorandum

To: Administrator, DMEA
Attention: Chief, Iron and Ferro-Alloys Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Lands to be included in proposed
Exploration Project Contract
Docket No. DMEA-3937 (Mercury)
International Ore Corporation
Pine Mountain Mercury Mine
Maricopa County, Arizona

Additional information is required before Annex I to the proposed Contract can be prepared.

The application states that the property to be explored consists of 21 claims. As to sixteen claims, designated Mercury Nos. 1-10 inclusive, and 16-21, inclusive, located by the applicant, the application appears to be clear. This memorandum therefore pertains only to the remaining five claims.

The application states as follows:

"The five (5) other mining lode claims were acquired by purchase contract between D. W. Simpson, purchaser and George Cline, seller. A copy of said contract is attached and captioned exhibit "a". Said contract calls for the delivering of eight (8) mining lode claims, however, upon proper survey said contract delivered only five (5) claims known as Turnbull #1 through Turnbull #5. There is no dispute between seller and purchaser and said claims are known by virtue of an agreed upon relocation Mercury #11 through #15. D. W. Simpson as purchaser was acting as an individual, however, he represented himself and Tom H. Donaldson and Jesse H. Lochausen, Jr. in a joint venture. The contract executed between Mr. Simpson and George Cline has been assigned in its proper proportions to Tom H. Donaldson and Jesse H. Lochausen and transferred into International Ore Corporation in exchange for the proper portion of common stock of said company."

The Mining Contract referred to in the above quotation mentions nine claims designated as Turnbull, and Turnbull Nos. 1-8, inclusive. The map shows only five such claims designated as Mercury Nos. 11-15 inclusive. The file contains no copies of the

assignments mentioned, or of any other documents by George Cline.

1. It is unclear whether the book and page references to the claims designated in the Mining Contract as Turnbull Nos. 1-5 as shown in the Mining Contract between Cline and Simpson are the proper references to the 5 claims intended to be covered by the proposed Exploration Project Contract, or whether, as a result of the survey mentioned in the above quotation, the claims to be included in the proposed exploration contract cover parts of the land covered by the Turnbull and Turnbull Nos. 6-8 claims, inclusive, mentioned in the Mining Contract.

2. It is unclear whether the relocation mentioned was by Cline, or by Simpson, or by the applicant corporation. If by Cline, then Cline should supplement the Mining Contract so as to make clear that the relocated claims are covered thereby. If the relocation was by the applicant, it would seem that since the applicant held its interest in the lands pursuant to the Mining Contract with Cline, it could not relocate the lands so far as cutting off Cline's rights in the lands are concerned, unless Cline either expressly abandons them or makes a special agreement to that effect. In either case, a copy of the document executed by Cline should be furnished to the Government. Furthermore, if Cline still has an interest in the land, his Consent to Lien should be obtained. Copies of the assignments from Simpson to Donaldson and Lochausen, and from them to the applicant, should also be furnished to the Government.

We shall defer processing the Contract until these points are clarified.

Robert P. Dwyer

P. Indritz/wog
February 14, 1956
Copy to: DMEA Docket
Solicitor's Docket
W.S.Martin (2)
G.C.Selfridge
R.P.Dwyer
Chron.
P.Indritz

February 3, 1956

MEMORANDUM

To: Associate Solicitor
Division of Mineral Resources

From: Iron and Ferro-Alloys Division, DMEA

Subject: Preparation of contract
Docket No. DMEA 3937 - Mercury
Internation Ore Corporation
Pine Mountain Mercury Mine
Maricopa County, Arizona

Transmitted herewith is a draft of a proposed contract for the captioned project for your use in preparing the contract in final form.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

Attachment

cc: Docket
Code 400

TLChapman/ls

D R A F T

3937

Mercury

International Ore Corporation,

a corporation

Box 1091, Wickenburg, Arizona

maps

Arizona

Maricopa

owner and lessee

all rights

x locations and a lease

lease royalties

Consent to Lien

mercury

September 30, 1956

14,880.00

11,160.00 75

DRAFT

EXPLORATION PROJECT CONTRACT
INTERNATIONAL ORE CORPORATION
DOCKET NO. DMEA-3937

ANNEX NO. I

The land referred to in Article 2 of the contract form and shown on the attached figure 2, Claim map, consists of 16 lode mining claims owned by the applicant by right of location and 5 lode mining claims owned by George Cline by right of location and leased to D. W. Simpson, president of the International Ore Corporation, by a "Mining Contract and Agreement" dated June 16, 1954.

These claims are located in section 31, T. 8 N., R. 9 E., Sunflower Mining District, Maricopa County, Arizona, and are recorded as follows:

Name of Claim	Owned by Applicant	Book No.	Page No.
Mercury No. 1		1405	435
Mercury No. 2		1405	436
Mercury No. 3		1405	437
Mercury No. 4		1405	438
Mercury No. 5		1405	439
Mercury No. 6		1405	440
Mercury No. 7		1479	330
Mercury No. 8		1405	441
Mercury No. 9		1479	331
Mercury No. 10		1405	442
Mercury No. 16		1479	332
Mercury No. 17		1479	333
Mercury No. 18		1479	334
Mercury No. 19		1479	335
Mercury No. 20		1479	336
Mercury No. 21		1479	337
	Leased to Applicant		
Turnbull No. 1		1161	3
Turnbull No. 2		1161	1
Turnbull No. 3		1160	599
Turnbull No. 4		1160	600
Turnbull No. 5		1186	3

D. W. Simpson, assigned equal portion of "Mining Contract and Agreement" to Tom H. Donaldson and Jesse H. Lockhausen, and in turn it was turned over to the International Ore Corporation for stock. It will be necessary to obtain these documents from

applicant and an Owner's Consent to Lien from George Cline, the owner of the Turnbull claims.

The applicant advises that the Turnbull claims were relocated by the applicant as the Mercury 11 to 16, inclusive. In order to do this, it would be necessary for Cline to abandon the claims and make a special agreement with the applicant.

DRAFT

EXPLORATION PROJECT CONTRACT
INTERNATIONAL ORE CORPORATION
DOCKET NO. DMEA-3937

EXHIBIT "A"
Description of the Work

Attached maps are as follows:

Figure 1, Location Map, showing location of the property.

Figure 2, Claim Map. Claims owned by applicant outlined in blue; those under lease outlined in red.

Figure 3, Plan and Section, showing location of the proposed holes.

1. Bulldoze access roads and drill sites for diamond drill holes 1, 2, and 3. 8 hours.

2. Diamond drill 3 holes vertically approximately at points indicated in Figure 3. These holes should cut "B" and "C" ore channels at a point approximately 130 feet, on dip measurement, below the 3rd level and then extended to cut the "A" ore channel. These holes to be not less than AX in size and are to be cemented and redrilled or reamed and cased as necessary. The holes shall not exceed a depth of 500 feet each or a total of 1,500 feet.

3. Diamond drill 4 holes to cut the "A" ore channel below the southeast end of the open cut and the lower adit. The location of these holes will be dependent on accessible area in the open pit or they may be drilled from underground if the new work by the Operator finds an encouraging area. These holes

should be about 40 feet apart and may be vertical or inclined, but shall be located to cut the ore zone at approximately 100 feet below the lower adit. These holes shall be not less than AX in size and are to be cemented and redrilled or reamed and cased as necessary. Each hole shall be from 100 to 150 feet in depth, the total not to exceed 600 feet. The location of these holes and the dip shall be dependent on the consent of the Government in writing.

4. All cores in mineralized zones shall be split and assayed for mercury. Holes may be drilled in any order.

Estimated Cost of Project
Fixed Unit Costs

Bulldozing access roads and drill sites 8 hours at $14.00 per hour	$ 112.00	
Diamond drill holes, 2,100 feet at $6.00 per foot	12,600.00	
Cementing, redrilling, reaming, and casing. 1,000 feet at $2.00 per foot	2,000.00	
Assaying 42 samples at $4.00 each	168.00	
Estimated total cost of project		$14,880.00
Government participation, 75%		$11,160.00

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

400

January 23, 1956

224 New Customhouse
Denver 2, Colorado

RECEIVED
JAN 26 1956

Copy retained 400

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3937 (Mercury), International Ore Corporation, Pine Mountain Mine, Maricopa County, Arizona

This responds to your letter of December 27, 1955 requesting additional information needed for the preparation of the contract.

Enclosed are the following:

1. Nine copies of a plan and section showing the locations of the three surface holes

2. Two copies of a memorandum from John N. Faick dated January 20, 1956

3. Two copies of a memorandum from Walter R. Storms dated January 18, 1956.

W. M. Traver

Enclosures

DMEA
Date Rec'd
JAN 20 1956
BUREAU OF MINES
Denver, Colorado

(3)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Box 4097
Tucson 5, Arizona

January 18, 1956

Memorandum

To : W. M. Traver, Executive Officer, DMEA Field Team

RECEIVED
JAN 20 1956

From : Superintendent, Southwest Experiment Station

Subject : Docket DMEA-3937, International Ore Co.'s Pine Mountain Mercury Mine, Maricopa County, Ariz.

As requested in your memorandum of December 30, we finally have obtained a map of the Pine Mountain area and are enclosing 10 prints of same. T. M. Romslo had to contact Pine Mountain officials in Phoenix regarding a fairly accurate surface map, as we had none. When a map was received, it had to be reduced in size, hence the delay.

The locations of the 3 surface holes are shown on the map; however, the locations of the other 4 holes cannot be shown. If certain underground workings are cleaned out, these holes will be drilled from underground sites; otherwise they will be drilled from surface stations.

Walter R. Storms

Walter R. Storms

CC W. M. Traver
J. N. Faick
DMEA-3937
DK

WRStorms:frj

Hmp

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Box 4126 University Station
Tucson, Arizona

IN REPLY REFER TO:
DMEA
Date Rec'd
JAN 23 1956
BUREAU OF MINES
Denver, Colorado

January 20, 1956
AIRMAIL

RECEIVED
JAN 26 1956

MEMORANDUM

To: Mr. W. M. Traver, Executive Officer, DMEA FIELD TEAM REGION III

From: John N. Faick

Subject: DMEA 3937 (Mercury), International Ore Corporation, Pine Mountain Mine, Maricopa County, Arizona

I compiled the plan and section referred to in your teletype of January 20, 1956, showing the locations of the proposed holes at the Pine Mountain mine, and naturally concur with the locations thereof. These locations represent a compromise of several possible drill sites but we believe the results of these holes will satisfactorily serve the purpose for which they are intended. Section ~~8A'~~ A-A' diagramatically illustrates the three surface holes proposed for exploring the deposit beneath the old workings, but the shallow holes to test the "A" zone were purposely left off, pending the selection of final drill sites.

John N. Faick

John N. Faick

JNF:ms

cc: Harshman
Storms

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

400

224 New Customhouse
Denver 2, Colorado

December 30, 1955

WSG

Memorandum

To: W. R. Storms

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3937 (Mercury), International Ore Corporation, Pine Mountain Mine, Maricopa County, Arizona

Enclosed is a copy of a letter from the Chairman, Operating Committee dated December 27, 1955 and a photostat intended to show in cross-section the position and attitude of the three proposed diamond drill holes.

Will you please forward this office the additional necessary information so that a contract may be prepared.

W. M. Traver

W. M. Traver

Enclosures
HMC:jy
cc: Docket 3937
Chair. Op. Comm. (2)
Harshman
Chron.

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

224 New Customhouse
Denver 2, Colorado

December 30, 1955

Memorandum

To: W. R. Storms

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3937 (Mercury), International Ore Corporation, Pine Mountain Mine, Maricopa County, Arizona

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W. M. Traver

Enclosures
HMC:jy
cc: Docket 3937
Chair. Op. Comm. (2)
Harshman
Chron.

DEC 27 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA-3937, Mercury
International Ore Corporation
Pine Mountain Mine
Maricopa County, Arizona

Dear Mr. Traver:

Reference is made to the Summary, Conclusions, and Recommendations in a report dated November 1955 by T. M. Romslo, Mining Engineer, covering the above-noted property.

Mr. Romslo recommends diamond drilling and proposes that three of the proposed holes cut the "A", "B", and "C" veins at a point approximately 130 feet below the third level. Enclosed in duplicate are photostats prepared from the inadequate data available to us, and intended to show in cross-section the position and attitude of these holes. Without surface contours, we find difficulty in spotting the proposed drilling.

We would appreciate your comments on the subject, preferably accompanied by a cross-section, so that we may expedite the preparation of a contract.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

APPROVED:

/s/ Robert W. Geehan

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

cc: Docket
Code 400
Oper. Comm.
Adm. Read. File
T. Kiilsgaard, USGS
Helena Meyer, USBM
FT, Region 3

TLChapman/ls 12/21/55

Please ask RFC, first in person and then by letter, for report on the Pine Mountain Property prepared by C. A. Rasor — see page 2 of Harshman's memo of Oct 27, 1955 to Ex. Off, FT, Pg II.

400

December 6, 1955

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: J. W. Pennington, Branch of Base Metals

Subject: Review of Examination Report, Docket No. DMEA - 3937 (mercury), International Ore Corporation, Pine Mountain Mine, Maricopa County, Arizona, $44,948.00

The program proposed by the applicant to explore this property involved sinking a 150 feet shaft and 400 feet of drifting at an estimated cost of $44,948.00.

However, one member of the Examination Team, T. R. Romslo, believes that the applicant's program was not designed to explore the most favorable zone, Veins B and C, and the primary objective appears to be more of a development than exploration of Vein A.

Romslo offers a proposed diamond drilling program consisting of 7 holes totaling 1,900 feet at an estimated cost of $13,750.00. Incidentally, according to the data in Romslo's estimated costs, the Material and Supplies item should be $230.00 instead of $130.00.

I agree with the conclusions of Romslo and Faick, the other members of the Examination Team, that exploration of the property is warranted. Yet, I believe that the modified program of Romslo is more acceptable than the program proposed by Faick.

I recommend that Romslo's drilling program be considered as the method to explore the property.

J. W. Pennington

possible contract

J. W. Pennington

JWPennington/vr

RECEIVED
DEC - 6 1955

Copy to: Division of Minerals
Branch of Base Metals
J. W. Pennington
R. W. Geehan
Thor Kiilsgaard, U.S.G.S.
Files

400

DMEA
Date Rec'd.

SEP 9 1955

BUREAU OF MINES
Denver, Colorado

Copy referred to 400

September 8, 1955

Memorandum

To: W. R. Storms

WSM

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 3337, (Mercury), International Ore Corporation, Maricopa County, Arizona

The subject application in the amount of $44,948.00 is enclosed herewith. The brochure consists of:

1. Form MF-103 and information sheets
2. Geologic Map on the Pima Mountain Mercury Mine, Maricopa County by Geoprofessional Services, Inc.
3. Claim map
4. Sketch of mine workings
5. Photocopy of memo from James W. Pennington to W. S. Martin
6. Photocopy of memo from N. E. Nelson to W. S. Martin
7. Photocopy of transmittal letter from George Selfridge to Executive Officer
8. Copy of Executive Officer's memo of September 2, transmitting brochure to this office

A field examination and suitable report are required. The completed report should be sent directly to the Executive Officer with a copy of your memo of transmittal to this office.

W. H. KING

W. H. King

Copy to: W. M. Traver (3)
E. N. Harshman
J. N. Faick

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

400

September 2, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: W. H. King (With brochure)
J. N. Faick

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3937, (Mercury), International Ore Corporation, Maricopa County, Arizona

Enclosed is the subject application in the amount of $44,948.00. The brochure consists of:

1. Form MF-103 and accompanying answer sheets
2. Claim map of the property
3. Sketch of mine workings
4. Geological report by Geoprofessional Services, Inc.

Also attached is a copy of a letter from the Chairman of the Operating Committee with relevant memoranda from James W. Pennington and N. E. Nelson.

A field examination and suitable report are requested.

W. M. Traver
W. M. Traver

Enclosures

HMC:ab
cc: Sec. Op. Comm. (2)
Docket 3937
Harshman
Chron.

400

AUG 31 1955

International Ore Corporation
Box 1091
Wickenburg, Arizona

Re: Docket No. DMEA 3937 - Mercury
Pine Mountain Mine
Maricopa County, Arizona

Gentlemen:

The above-docketed application for exploration assistance for mercury ores has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. W. M. Traver, Executive Officer, DMEA Field Team, Region III, 224 New Custom House, Denver 2, Colorado, for a field examination of the property.

Any assistance that you can give the members of the Field Team will be appreciated.

Sincerely yours,

Administrator

TLChapman/ls
8/29/55

cc: Docket
Adm. Read. File
Code 400
Oper. Committee
Thor Kiilsgaard, USGS
H. M. Meyer, USBM
Field Team, Region 3

400

AUG 31 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA 3937, Mercury International Ore Corporation
Pine Mountain Mine
Maricopa County, Arizona

Dear Mr. Traver:

The above docketed application for exploration assistance is being referred to your office for a field examination of the property.

Two copies each of relevant memoranda, one dated August 8, 1955, by N. E. Nelson, Geological Survey, and the other dated August 15, 1955, by James W. Pennington, Bureau of Mines, are enclosed for your information.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

APPROVED:

P. F. Yopes

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

cc: Docket
FT, Region 3
Code 400
Adm. Read. File
Oper. Committee
Thor Kiilsgaard, USGS
H. M. Meyer, USBM

TLChapman/ls
8/29/55

400

August 15, 1955

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: J. W. Pennington, Branch of Base Metals

Subject: Review of DMEA application, Docket No. 3937 (Mercury) International Ore Corporation, Sunflower Mining District, Maricopa County, Arizona

This appears to be more of a development than an exploration project.

The proposed exploration drift shown on page 19 of the Geologic report does not appear justified. No evidence is given that a favorable formation will be encountered.

All estimated costs are acceptable except those of mining and processing the ore which appear low. In addition, the value of mercury is high, as the present value is about $255 a flask.

It is recommended that a Field Team examination be made of the property to determine if the proposed exploration is the best and necessary method.

Signed

James W. Pennington

Copy to: Division of Minerals
Branch of Base Metals
H. M. Meyer
F i l e s
Thor H. Kiilsgaard, Room 5222

400 IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
AUG - 9 1955

August 8, 1955

Re: DMEA 3937
International Ore Corp.
Pine Mountain Mine
Maricopa Co., Arizona
$44,948 - Mercury

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Application.

No information, other than that in the application, is at hand.

The rehabilitation and exploratory work proposed for this old mine would equip it with a new 150-foot shaft to the same depth as the old shaft and drive 400 feet of drifts.

Mercury has been produced from three zones, A, B, and C, all low grade but wide enough to permit low mining costs. "B" zone appears, from poor maps, to have been the most productive. It has been mined for a slope distance of 270 feet and a length of 160 feet. In recent operations ore running 3.17 pounds to the ton has been handled largely from the B zone.

Ore reserves. The reserves as calculated by the consultants are probably very much on the optimistic side, inasmuch as the zones are projected far beyond their known bottom points and the lengths taken appear improven. The grades assumed, 0.19% for A and 0.2% for B and C zones are not well established, but may be realized. Three samples averaging 0.16% mercury are taken as representative of a 25,000-ton calcine dump, and from retreating a net profit of $295,258.60 is predicted.

An inspection for the purpose of checking some of the assumptions is indicated. If the suppositions are reasonably in line the project has considerable merit.

Referral to the Field Team is recommended.

NENelson:iml
G-8/8/55
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file; H. M. Meyer, 2623

N. E. Nelson

N. E. Nelson

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

DEC 1 1955 RECEIVED

400

224 New Customhouse
Denver 2, Colorado

November 29, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, DMEA Docket 3937 (Mercury), International Ore Corporation, Pine Mountain mine, Maricopa County, Arizona

Enclosed are the original and three copies of the report pertaining to the above application.

The Reports of Examination are not in agreement as to the kind and amount of work, but they do agree that exploration is warranted.

We recommend that your consideration be given to the exploration program proposed in the Engineering Report. If you concur in the proposed drilling program, it is suggested that the applicant be advised and his concurrence obtained.

W. M. Traver

By J. W. Townsend
J. W. Townsend

E. N. Harshman
E. N. Harshman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE

(date)

RECEIVED
DEC - 1 1955

November 16, 1955

Memorandum

To : W. M. Trover, Executive Officer, DMEA Field Team, Region III

TRANSMITTED
NOV 29 1955

From : Superintendent, Southwest Experiment Station

Subject : Examination Report, Docket DMEA-3937, International Ore Corp.'s Pine Mountain Mercury Mine, Sunflower Mining District, Maricopa County, Ariz.

Enclosed are original and 8 copies of the section on Summary, Conclusions and Recommendations, and the one on Engineering by T. M. Rumsle of the Bureau of Mines for the above report. A separate section on Geology already has been submitted by the Geological Survey.

This applicant wanted Government aid to explore its Pine Mountain mercury deposits. J. N. Faick of the Geological Survey and T. M. Rumsle of the Bureau of Mines examined the property and both thought that some exploratory work should be done, but they could not agree on the method. Rumsle recommends diamond drilling and I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. M. Trover (8)
J. N. Faick
J. F. Shaw
DMEA-3937
WF

WRStorms:frj

Reviewed by
DMEA OPERATING COMMITTEE

(date)

RECEIVED
DEC - 1 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

TRANSMITTED
NOV 29 1955

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-3937, International Ore Corporation

Pine Mountain Mercury Mine

Maricopa County, Arizona

T. M. Romalo, Mining Engineer
U. S. Bureau of Mines

November 1955

Reviewed by
DMEA OPERATING COMMITTEE

(date)

RECEIVED
DEC - 1 1958

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By T. M. Romslo[1/]

The Pine Mountain mercury mine in Maricopa County, Ariz. was examined for the Defense Minerals Exploration Administration in connection with an application for Governmental aid by the International Ore Corp. The examination was carried out under the application's docket number, DMEA-3937. Aid was requested on a proposed project that involved sinking a 150-foot shaft and 400 feet of drifting at an estimated cost of $44,948.00.

The Pine Mountain mine has been worked intermittently since the early 1910's. Its principal workings have been inaccessible for several years. Total production from the mine has been estimated at 1,200 flasks of mercury from 32,000 tons of ore. This includes the applicant's recent production of 234 flasks of mercury from 7,061 tons of ore mined by open pitting (ore is treated in a 40-ton rotary furnace situated near the mine).

Cinnabar is the ore mineral of the Pine Mountain mine. It is localized in 3 nearly parallel zones of brownish schist that strike N. 50° to 60° E. and dip northwesterly at 45° to 50°. The cinnabar occurs principally as disseminations of fine particles.

All production before the present open-pit operation is believed to have come from 2 ore bodies (North and South) that were mined to the 3rd level at a vertical depth of about 225 feet. Records indicate

1/ Mining Engineer, U. S. Bureau of Mines

the South ore body has been mined out, but the zone of veins B and C of the North ore body may persist with depth. Other potential mineralized ground is confined to the relatively unexplored "A" vein of indicated low-grade ore that occurs in the footwall of the North ore body.

Exploration of the 2 possible ore zones indicates the presence of a significant amount of ore and could best be carried out by the proposed diamond drilling project.

The applicants proposed project is not acceptable. It is not designed to test the most favorable zone, the depth extension of veins B and C. Although it is designed to test vein A, its primary objective appears to be the reopening of the mine with the hope of finding ore in the old workings. Thus the major portion of the program involves development work rather than exploratory operations.

Approval is recommended for Governmental participation in the proposed diamond drilling project at the Pine Mountain mine. Estimates indicate that the project could be completed in 4 months at a cost of $13,750.00.

DMEA-3937, INTERNATIONAL ORE CORPORATION

PINE MOUNTAIN MERCURY MINE

MARICOPA COUNTY, ARIZONA

Engineering Report

By T. M. Romalo
Mining Engineer
U. S. Bureau of Mines

November 1955

Reviewed by
DMEA OPERATING COMMITTEE

(date)

DMEA-3937, INTERNATIONAL ORE CORPORATION
PINE MOUNTAIN MERCURY MINE
MARICOPA COUNTY, ARIZONA

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ILLUSTRATIONS

Figure No.		Following page
1	Location map	2
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3	Pine Mountain Mercury Mine	(See Geologic Report)
4	Geology Section through adits	(" " ")
5	Geology of 30-foot sublevel	(" " ")
6	Proposed diamond drilling	10

INTRODUCTION

The International Ore Corp. applied for Governmental aid in a proposed exploration project at the Pine Mountain mercury mine in Maricopa County, Ariz. The application was received by the Defense Minerals Exploration Administration, Washington, D. C., on August 4, 1955. It was docketed as DMEA-3937, reviewed by the Operating Committee, and referred to the Field Team of Region III for a field examination of the property.

Proposed explorations consisted of clearing a site for a shaft, construction of a headframe, purchase and installation of a hoist with a power unit, sinking of a 150-foot vertical shaft, and the driving of 400 feet of drifts on 2 levels. Estimates, based on an Independent Contract, indicated the program would be completed in 4 months at a total cost of $44,948.00.

Field examinations of the property were made September 15 and 16 by J. N. Faick, Geologist, U. S. Geological Survey, and by T. M. Romslo, Mining Engineer, U. S. Bureau of Mines on September 21, 1955. The principal representatives of the corporation at the property were: D. W. Simpson, president, and M. Contreras, mining engineer, during Mr. Faick's examination; and M. Contreras during Romslo's examination.

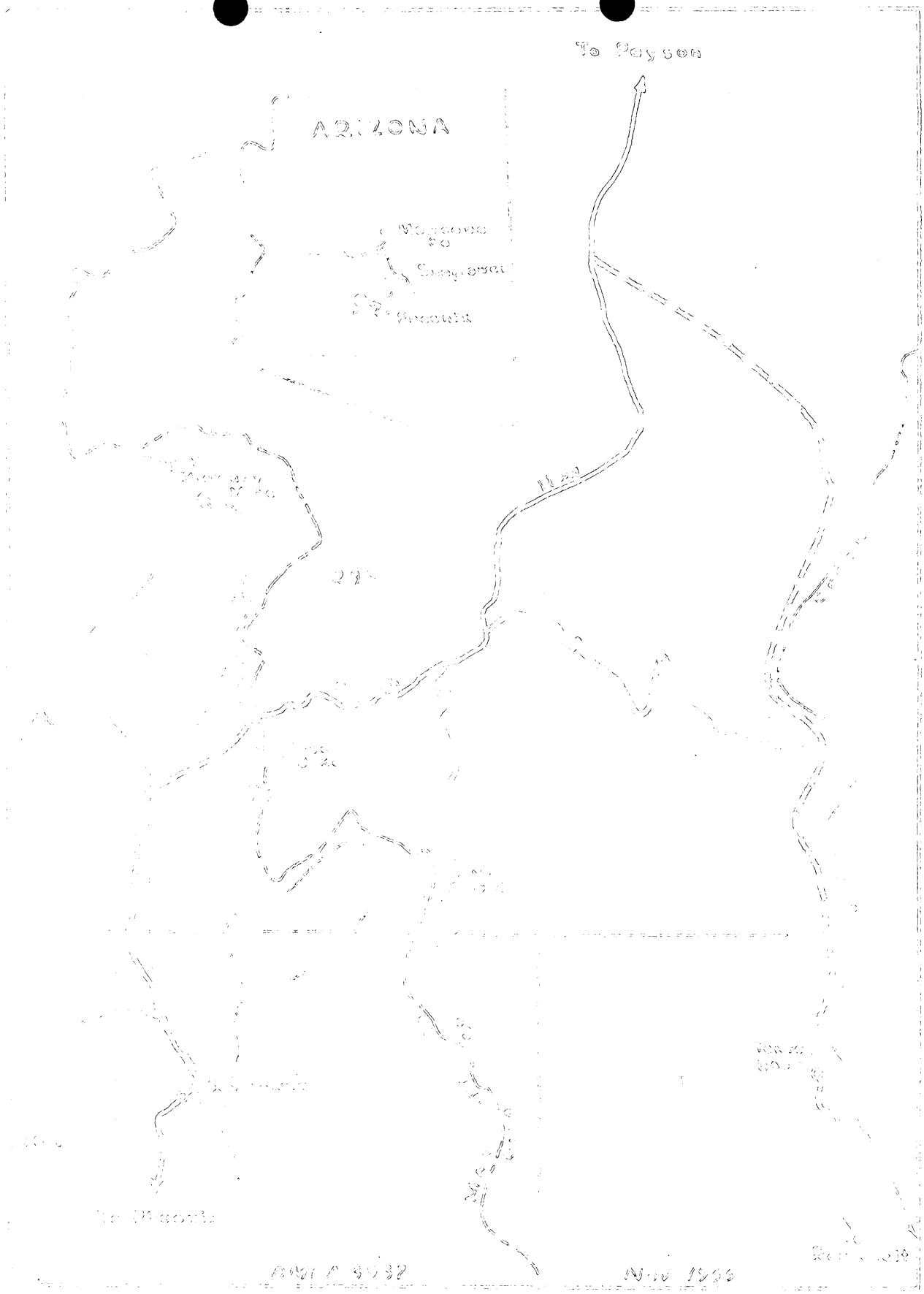
LOCATION AND ACCESSIBILITY

The Pine Mountain Mercury Mine probably is situated in Sec. 31 of unsurveyed T. 8 N., R. 9 E., Sunflower Mining District, Maricopa County, Ariz. (figure 1). It is about 55 miles northeast of Phoenix, Ariz. To reach the mine from Phoenix, take U. S. Highway 60 east for 16 miles to the town of Mesa. Proceed 8 miles easterly on the same highway to its junction with the Bush Highway, then follow the northeasterly trending Bush Highway, an improved graveled road, for 49 miles to an access road that branches to the left near the "signed" Maricopa County boundary line. Proceed 4.6 miles on the graded access road to the mine camp. The mine and mill are a little over ½ mile from the camp via a southwesterly-trending graded road.

TOPOGRAPHY, PHYSICAL FEATURES AND CLIMATE

The Pine Mountain mercury mine is on the western slope of the slightly west-of-north-trending Mazatzal Mountains. It is at an altitude of about 4,000 feet in a rather rugged area that comprises high ridges separated by deep V-shaped canyons. Pine Mountain, a prominent peak near the head of a southwesterly-flowing branch of Sycamore Creek, is about three-fourths mile northeast of the mine.

There is a variety of vegetation in the vicinity of the mine. Pine Mountain has a good stand of yellow pine. At lower altitudes dense growths of brush cover the slopes of hills, and live oak, juniper, and cypress trees form small stands in sheltered ravines.



[illegible] BY VAL; INTERNATIONAL ORE CORP.

MARICOPA COUNTY, ARIZ.

Summers are pleasant and winters are mild. Rainfalls occur chiefly as heavy downpours during the summer months. Snowfalls are common in the winter months and may occur as late as the first part of April. Annual precipitation probably is greater than 15 inches.

There are no permanent streams in the area. Water for domestic, mining, and milling purposes at the Pine Mountain property is obtained from a spring.

HISTORY AND PRODUCTION

Cinnabar first was discovered in the Mazatzal Mountains in 1911. The discovery was on the west slope of the range on Alder Creek at about 6 miles north of Sunflower. In 1913, newspapers reported the presence of cinnabar on Pine Mountain. Discovery of the Pine Mountain deposits probably was made by William Reynolds, who with W. D. Boardman and others controlled several unpatented claims in the area for many years.

By 1925 deposits on the present Mercury claims Nos. 11, 12, and 13, had been prospected by numerous shallow pits and trenches, and crosscut adits to explore the deposits at depth had been started. In August 1927, Carl Lausen[1/] sampled a long tunnel near the Boardman property which probably was the site of the present Pine Mountain mercury deposits. In August 1927, the late W. B. Gohring of Phoenix, Ariz. obtained the property under an option agreement. Shortly thereafter the property reverted to the partnership of Reynolds and

1/ Letter to R. E. Talley, Aug. 23, 1927.

Boardman. In 1931, 2 or 3 crosscut adits were driven into the principal ore zone and in 1932 good ore reportedly was discovered in one of the adits. In April 1932 P. C. Benedict[2/], geologist, estimated that there were a few thousand tons of 9-to 10-pound mercury ore in the vicinity of the adits. Little work was done from 1933 to 1940 when the price of mercury reached a relatively high level.

In 1940, H. G. Harrison and Henry Stromsen of San Pedro, Calif. acquired the Pine Mountain mercury property and formed the Nidco Reserves, Inc. The corporation built a road from the Bush Highway to the mine and in August 1940 completed construction of a reduction plant that was equipped with a 36-inch by48-foot Gould rotary furnace having a capacity of 40 to 50 tons of ore per day. A shaft was sunk and ore was developed by underground workings. According to newspaper accounts, about 30 men were employed during 1940 and 1941, and approximately 20 men were employed from 1942 to June 1944 when the price of mercury dropped. In December 1944, the corporation abandoned the property. According to reports, it also was in June 1944 that the State Mine Inspector condemned the shaft.

The depth of the shaft when operations ceased in 1944 was 300 feet according to newspaper reports, 260 feet according to the applicant, and 225 feet according to available maps. A total of 2,000 feet of drifts reportedly were driven from 3 levels at 75-foot intervals, the

2/ Letter to W. O. Boardman, April 6, 1932.

75, 150 and 225. The property remained idle to July 1954 when the International Ore Corp. acquired it and started surface rehabilitations. Mining and milling of surface and near surface ores started in February 1955.

As there is no readily available record of production from the Pine Mountain mercury mine to 1954, J. N. Faick[3/] has arrived at what appears to be a reasonably accurate estimate by using data obtained from old newspapers, The Minerals Year Book of 1943, and engineering and geological reports. The estimated total production of 1,200 flasks of mercury from 32,000 tons of ore includes International Ore Corp.'s production through September 1955 of 234 flasks from 7,061 tons of ore.

EXTENT AND OWNERSHIP OF PROPERTY

The property comprises a group of 21 unpatented lode mining claims (figure 2). Sixteen of the claims are registered as the MercuryNos. 1 to 10, and 16 to 21. The remaining 5 are registered both as Mercury claims 11 to 15, and as Turn Bull Nos. 1 to 5, respectively.

The International Ore Corp. reportedly controls the Mercury claims 1 to 10, and 16 to 21 by virtue of location and occupancy, and holds the other 5 claims under an option agreement of June 16, 1954 with the owner, George Cline. The corporation's address is Box 1091, Wickenburg, Ariz. Its officers are D. W. Simpson, President, T. H. Donaldson, Vice President, and J. H. Lochausen, Secretary-Treasurer.

3/ Geologist, U. S. Geological Survey

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DEC - 1 1956

PRESENT STATUS

Camp

The camp comprises a well-equipped dining room and kitchen building, a store room for groceries, and 14 cabins, some of which contain kitchens.

Mine

At present, operations are confined to the open-cut mining of ore pillars and low-grade zones of the North ore body's "A" vein. The back of the lower adit is the floor level of the open cut that presently averages about 75 feet long (strike length), 30 feet wide, and 25 feet deep (figures 3 and 4). Drilling is done with jackhammers. Blasted ore falls or is scraped to chutes from which it is drawn into cars that are hand trammed about 300 feet to a 25-ton bin at the mill.

The mining crew of 8 men and a mine foreman work one shift a day and 6 days weekly. Ore production averaged about 40 tons a day.

The principal buildings and equipment at the mine consist of the following:

1	Sheet-metal 16- by 18-foot compressor building that houses a 315-cu. ft. compressor and its Caterpillar power unit;
1	Rented Worthington 210-cu. ft. portable compressor;
3	Rock drills - 1 jackhammer, 1 stoper, and 1 jackleg drill complete;
4	Storage tanks - 1 water and 3 fuel oil;
1	20- by 25-foot wooden hoist house;
1	12-by 53-foot wooden building that houses change room, office, and sample-grinding room;
1	10- by 31-foot repair shop, and tool parts storage building;
1	1955 Chevrolet pickup truck.

Mill

The mill is continuously operated by a crew of 5 men.

Run-of-mine ore is crushed to minus 1/2-inch size by a jaw crusher. Crushed ore then is transported by a belt conveyor to a 40-ton steel bin in a 25- by 70-foot mill building.

Equipment in the mill comprises an automatic stoker, a 50-foot by 3-foot diameter Gould kiln, dust collector, 14 steel condensor tubes, 2 redwood condensor tanks, and electrical switch boards for control of power units, oil heater, kiln and vapor temperatures and lights.

The 17- by 17-foot power building, situated near the mill, houses a 58-K.W. generator, a Caterpillar engine, and a compressor driven by an electric motor.

According to M. I. Root, Mill Manager, recent production has averaged slightly under 2 flasks of mercury per day.

DESCRIPTION OF THE DEPOSIT

The Pine Mountain mercury belt, one of the 4 mercury belts of the Mazatzal Mountains, consists of reddish slates intruded by dikes and irregular masses of rhyolite porphyry. At the Pine Mountain mercury mine cinnabar is localized in 3 nearly parallel zones. The mineralized zones are named in order from footwall to hanging wall as "A", "B" and "C" and are separated from each other by barren schistose or rhyolitic rock (figure 4). They strike No. 50° to 60° E. and dip 45° to 50° W. (figure 5).

Cinnabar, the ore mineral, occurs principally as disseminations of fine particles in bleached or brownish schist, and in fractured and altered rhyolite. It also occurs in small amounts as discontinuous veinlets, generally less than ½ inch wide.

ORE RESERVES

A reasonably accurate estimate of the ore reserves of the Pine Mountain mercury mine cannot be made because the underground workings are inaccessible and available maps of the workings do not contain adequate data. The maps suggest that the South ore body is essentially mined out. At the other mineralized zone, the North ore body, it appears that essentially all ore of "C" and "B" zones from the surface to the 3rd level also has been mined out. Present mining probably will exhaust the near surface reserves of these zones within a few months. Thus potential reserves are confined to an extension of zones "B" and "C" below the 3rd level, and the relatively unexplored "A" zone.

Possible reserves in "B" and "C" zones below the 3rd level appear to be confined to a zone having a strike length of about 125 feet and a true thickness of approximately 15 feet. This zone could contain 250 to 300 tons of plus 0.2 percent mercury per foot of depth. Zone "A" could contain a similar tonnage of material containing less than 0.2 percent mercury.

PROPOSED EXPLORATION

Applicant's Proposal with Estimated Costs

The applicant proposed that a vertical shaft be sunk to a depth of 150 feet and that a total of 400 feet of drifts be driven across the ore zone from shaft stations on the 50- and 150-foot levels. The shaft would be collared in the open cut at 40 to 50 feet northeast of the portal of the lower adit and pass through the "C" zone at a depth of about 50 feet. Following are the applicant's estimated costs that are based on performance of the work by a reputable contractor.

Preparing shaft site - bulldozing 32 hours @ $14.00 per hour	$448.00	
Headframe and shaft collar	3,200.00	
Hoist, 2-ton capacity, including power unit	3,000.00	$6,648.00
*Sinking 150-foot vertical shaft to include all necessary timbering, etc., @ $130.00 per foot	$19,500.00	
2 station levels @ $1,200.00 each	2,400.00	21,900.00
400 feet of drifts @ $33.00 per foot	$13,200.00	
Timbering drifts @ $8.00 per foot	3,200.00	16,400.00
Total cost		$44,948.00

*The applicant recently told Mr. Faick that the corporation was about to start the proposed shaft-sinking operations. Intentions are to sink to a depth of about 50 feet and then drive a crosscut to the south for exploration of the "A" vein zone.

Alternate Proposal

The examining engineer proposes that Governmental aid in exploration of the mine be confined to a diamond drilling project in which the applicant has indicated an interest as a supplement to his proposal. Reasons why a drilling program is believed to be preferable to the applicant's proposal are a part of the conclusions of this report.

The alternate proposal consists of drilling a maximum of 7 diamond drill holes. Three of the holes, to be drilled from the surface, are designed to test for an extension of zones "A", "B", and "C" below the 3rd level. The other holes, to be drilled from either the surface or underground, would be drilled to test zone "A" at a higher horizon.

Holes to Test Zones A, B, and C

These holes should be designed to intersect the mineralized zone of the hanging wall, veins "C" and "B" at about 130 feet (dip measurement) below the 3rd level and at intervals of about 40 feet along the strike. At least 2 of the holes should be continued to a depth sufficient to penetrate the footwall zone, vein "A". The holes should be drilled in the vertical planes shown on figure 6. Topographic conditions will determine whether the holes should be drilled vertically or whether they should be inclined southward to penetrate the vein zones at more favorable angles. The depth of the holes should not exceed 500 feet each or a total of 1,500 feet.

Holes to Test Zone A

These 4 holes should be drilled to penetrate the vein at a depth of about 100 feet (dip measurement) below the lower adit and at intervals of about 40 feet along the strike. Drill sites for these holes at approximate locations shown on figure 6 probably will be accessible upon completion of present open-pit operation. Drilling of these holes from underground would be advisable if more favorable sites are made available from shaft sinking operations that probably have been started. Depth of the holes probably will not exceed 100 feet each or a total of 400 feet.

ESTIMATED COST OF PROPOSED DRILLING PROJECT

The following factors have been considered in arriving at an estimated maximum drilling price of $6.50 a foot under an independent contract:

1. Relatively isolated location;
2. Anticipated small amount of drilling, about 1,800 feet in 7 holes;
3. First 100 to 200 feet of drilling deeper holes probably will be in ravelly ground that will require much cementing and casing;
4. Core in mineralized zones should be not less than AX in size;
5. Rate of advance probably will not exceed 10 feet per shift;
6. Work should be in progress 2 shifts daily for 6 days a week;
7. Sampling will be done by drilling contractor who will deliver all core sludges from mineralized zones to the corporation's engineer.

Total estimated costs of the project follow:

Independent contract		
1,900 feet of drilling @ $6.50 per foot		$12,350.00
Supervision		
Corporation's engineer to devote ½ of his time to project, 4 months at $250.00 per month		1,000.00
Materials and supplies		
50 core boxes @ $5.00 each		150.00
Miscellaneous		
Handling of 50 samples @ $1.00 ea.	$50.00	
Assay of 50 samples @ $4.00 each	200.00	250.00
Estimated total cost		$13,750.00

CONCLUSIONS

The Pine Mountain mine probably has produced an estimated total of 1,200 flasks of mercury from about 32,000 tons of ore. Included in this production are about 7,000 tons of low-grade ore that is presently being mined by an open-pit. The remainder was produced from 2 ore bodies that were mined from the presently inaccessible underground workings. The South ore body is believed to be mined out, and the North ore body probably has been mined out to the 3rd level at a vertical depth of about 225 feet.

Possible reserves are believed to be confined to an extension of the North ore body's veins "B" and "C" below the 3rd level, and to relatively unexplored "A" vein of low-grade material in the footwall of the North ore body.

Although vein "A" should be explored, the primary objective of an exploratory program should be testing for an extension of veins "B" and "C" that are believed to have contained ore of presently economic grade. Testing of both zones by diamond drilling is feasible and can be done at a reasonably low cost.

The applicant's proposed project will test vein "A", but it is not designed to test the more favorable zone of veins "B" and "C". Its primary objective appears to be the reopening of the mine with the hope of finding ore in the old workings. Consequently, the major portion of the proposed program involves development rather than exploratory operations.

RECOMMENDATIONS

I recommend that Governmental aid in exploration of the Pine Mountain mercury mine be confined to a diamond drilling project that can be completed in 4 months at an estimated cost of $13,750.00.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

RECEIVED DEC 1 1955

November 22, 1955

TRANSMITTED

NOV 29 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3937 (Mercury), International Ore Corporation, Pine Mountain Mercury mine, Maricopa County, Arizona

I have reviewed the engineering report on the subject property prepared by T. M. Romslo, U. S. Bureau of Mines. I fully concur with his conclusion that the program proposed by the applicant is preparation for mining and not exploration.

In my memorandum of October 27, 1955, transmitting the geologic report to you, I suggested that the application should be denied on the grounds that there is insufficient data to indicate the presence of legitimate exploration targets. However, I did outline an alternative drilling program very similar to that proposed by Romslo.

In view of the feeling of both the examining geologist and engineer that exploration is warranted at the Pine Mountain mine, I suggest we consider favorably the program of exploration proposed in the engineering report. There is no indication that the applicant will accept the proposed drilling program if approved by the Washington DMEA staff.

E. N. Harshman

E. N. Harshman
Member, Field Team

ENHarshman:arh

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

October 27, 1955

TRANSMITTED
NOV 29 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3937 (Mercury), International Ore Corporation, Pine Mountain Mercury Mine, Maricopa County, Arizona

Enclosed are the original and eight copies of a geologic report by J. N. Faick, U. S. Geological Survey, in which a program of exploration at the Pine Mountain mercury mine is recommended.

The examiners were severely handicapped by the inaccessible condition of the mine workings, and they were obliged to base their conclusions on old production records, incomplete and inadequate mine maps, and very limited surface observations. The resulting rather negative approach is indicated in Faick's transmittal letter which states in part: "I could find no reason to believe the ore bodies are exhausted..." DMEA should have evidence to indicate that the ore bodies are not exhausted and that a program of exploration will discover significant amounts of ore.

The examining team has done a creditable job with the material available to them, but much data pertinent to a decision to explore the property cannot be obtained. We know almost nothing regarding the relative grades of the two ore shoots mined above the third level, the control of ore deposition, variations of grade with increasing depth, or the character, grade and width of ore, if any, in the sub-level below the third level.

The program proposed by the applicant certainly impinges on preparation for mining any ore that may exist on the edges of old stopes or below the third level. The modifications proposed by Faick (drilling from the 2nd level and the surface) can be considered exploration if exploration targets can be established.

I believe that the application should be denied on the grounds that there is insufficient data to indicate the presence of legitimate exploration targets. Should approval of exploration at

Reviewed by
DMEA OPERATING COMMITTEE

(date)

the Pine Mountain mine be considered, I suggest that the "A" zone be explored about 50 feet below the lower adit level by drilling three angle holes from a point just east of the "C" zone intersection with the lower adit level. These three holes would replace the three proposed by Faick on the second level of the mine and make it unnecessary to reopen the mine workings for exploration purposes. The surface drilling proposed by Faick should adequately explore for northeasterly extensions of the "B" and "C" zone.

An unsuccessful effort was made to obtain R.F.C. reports on the Pine Mountain property prepared by C. A. Rasor. They may be on file in Washington, D. C., and if they can be found, it is possible that they will contain data pertinent to a decision on the request for exploration assistance.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (9)

ENHarshman:arh

DMEA
Date Rec'd.

OCT 28 1955

BUREAU OF MINES
Denver, Colorado

Box 4126 University Station
Tucson, Arizona

October 21, 1955

MEMORANDUM

TRANSMITTED

NOV 29 1955

To: Mr. E. H. Harshman

From: J. N. Faick

Subject: DMEA 3937, International Ore Corporation,
Pine Mountain Mercury Mine,
Maricopa County, Arizona

Enclosed are the original and 8 copies of my report of examination of the above subject property. The Pine Mountain mine has been one of the largest mercury producers in Arizona, and I tentatively estimate production at slightly over 1800 flasks of quicksilver from about 32,000 tons of ore. The mine has been a marginal producer and operates principally during times of high quicksilver prices.

I could find no reason to believe the ore bodies are exhausted; therefore, am recommending Government participation in exploration.

Brochure will be returned by Mr. Storms.

John N. Faick

JNF:ms

cc. Harshman (8)
Storms

Reviewed by
DMEA OPERATING COMMITTEE

(date)

Box 4126 University Station
Tucson, Arizona

November 7, 1955

TRANSMITTED

NOV 29 1955

To: Mr. E. N. Harshman

From: J. N. Faick

Subject: DMEA 3937, International Ore Corporation,
Pine Mountain Mine, Maricopa County, Arizona

On page 12, lines 12 and 13, in my report on the above subject property, "C" was inadvertently used instead of "A", and "50" was used instead of "75". This sentence, starting on line 10, should read as follows:

> "The shaft would start near the outcrop of the 'B' and 'C' zones and, according to the applicants, would pass through the 'A' zone at a depth of about 75 feet; thus would provide another test of the 'A' vein."

Please correct this error in your copies of the report.

John N. Faick LB
John N. Faick

(our copy) has been corrected WSJ

JNF:ms

cc: Harshman - 8

Received
DMEA OPERATING COMMITTEE

(date)

U. S. DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REGION III

TRANSMITTED

NOV 29 1955

GEOLOGY

REPORT OF EXAMINATION

DMEA 3937

INTERNATIONAL ORE CORPORATION
PINE MOUNTAIN MINE

SUNFLOWER DISTRICT
MARICOPA COUNTY, ARIZONA

(Mercury)

By
John N. Faick
Geologist
U. S. Geological Survey

October 21, 1955

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM III

REPORT OF EXAMINATION

DMEA 3937
INTERNATIONAL ORE CORPORATION
PINE MOUNTAIN MINE

SUNFLOWER DISTRICT
MARICOPA COUNTY, ARIZONA
(Mercury)

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PROPOSED EXPLORATION	12
CONCLUSIONS AND RECOMMENDATIONS	14

ILLUSTRATIONS

Fig. 1	Location Map	See Engineering Report
Fig. 2	Claim Map	" " "
Fig. 3	Pine Mountain Mercury Mine	Following Page 3
Fig. 4	Geology of 30-foot sublevel	" " 9
Fig. 5	Geological Section through Adits	" " 10

INTRODUCTION

The Pine Mountain Mine, Maricopa County, Arizona (fig. 1) was examined by this writer on behalf of the Defense Minerals Exploration Administration, which received an application for Government aid in exploring the mine for additional reserves of mercury. The application was submitted by the International Ore Corporation, which company controls 21 unpatented claims (fig. 2); these are controlled by virtue of purchase and location. The applicant's request involved sinking a new shaft to a depth of 150 feet and driving 400 feet of drifts and crosscuts to reopen the mine. The applicants estimated cost is $44,948. The examination was handicapped by the fact that the important part of the mine, including the shaft and the subsurface workings from which most of the former production was obtained, is completely inaccessible. Appraisal of the property depended upon analysis of old maps, incomplete production records, examination of the surface or near surface workings. This examination revealed that the proposed new shaft is the best means of reclaiming the old part of the mine and for providing access to ore that may exist on the lower level. It is also shown that of 3 mineralized zones only the "B" and "C" zones have been mined, and that the "A" zone is essentially unexplored. I believe exploration is justified by drilling 3 holes underground to test the "A" zone, by drilling 3 surface holes to test the "B" and "C" zones for extensions of the ore believed to exist on the 3rd level, and by sinking the exploration shaft to regain entrance to the old workings for the purpose of underground mapping, sampling and exploration drilling.

HISTORY

Quicksilver was first discovered in the Mazatzal district in 1911 on Alder Creek, a branch of Sycamore Creek, in Maricopa County, and in 1913 its presence on Pine Mountain was reported in newspaper accounts. Ransome[1/] examined the district in 1914 but did not specifically mention the Pine Mountain deposits; however, he indicated that Pine Mountain was in the mercury-bearing area. The Pine Mountain deposits apparently were discovered by William Reynolds who, in partnership with W. D. Boardman and others, controlled several unpatented claims in the Pine Mountain area for many years. By 1925 considerable shallow prospecting had been done and crosscut adits had been started to explore the deposits at greater depths. The workings are near the west end of the original claim No. 1 and on Claim No. 2, which are now included in the unpatented claims Mercury 11, 12 and 13. In August 1927 Carl Leusen[2/] sampled a long tunnel west of camp on the Boardman property, and this apparently is the site of the Pine Mountain mine as known today. The property was optioned to W. B. Gehring, Phoenix, Arizona in August 1927 but it apparently reverted to the original partnership soon thereafter. About 1931, at which time the property was owned by Reynolds and Boardman, 2 or 3 crosscut adits had been driven into the principal ore zone, and good ore was reported to have been discovered in one of the tunnels on the Boardman (or Pine Mountain?) property in 1932. In April 1932 F. C. Benedict[3/], geologist, estimated that in the vicinity of the tunnels

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1/ Ransome, F. L., Quicksilver Deposits in the Mazatzal Range.
1a/ Refer to Fig. 17, p. 88, Ariz. Bur. Mines Bull. No. 122, 1927.
2/ Letter to R. E. Tally, Aug. 23, 1927.
3/ Letter to W. D. Boardman, April 6, 1932.

there was a few thousand tons of ore containing from 9 to 10 pounds of mercury per ton. Very little work was done at the property from 1933 until 1940 when relatively high prices of mercury greatly stimulated mercury mining throughout the Mazatzal Mountain district.

Control of the Pine Mountain mine passed from the original owners, Reynolds and Boardman, and a partner, H. G. Harrison, to Henry Stromsen, San Pedro, California, in 1940, and a comprehensive development program was undertaken by the new company operations. The new owners, operating under the name of Midco Reserves, Inc., with headquarters at 231 South LaSalle Street, Chicago 4, Illinois, built a road to the property from the Bush highway, and in August 1940 completed construction of a modern reduction plant equipped with a 36-inch by 48-feet Gould rotary furnace having a capacity of 40 to 50 tons per day. A shaft was sunk below the original tunnel level and the ore was developed by underground workings (Fig. 3). Newspaper accounts indicate that about 30 men were employed in 1940 and 1941, and that approximately 20 men were employed from 1942 to 1944, inclusive. Apparently mining operations stopped in June 1944, when the price of mercury was drastically reduced, and the Midco Reserves Corporation abandoned the property in December 1944, thus ending the only extended period of production from the Pine Mountain mine.

It is reported that the State Mine Inspector condemned the shaft in June 1944. When the mine closed the shaft was reported in newspaper accounts to be 300 feet deep (the applicants say 260 feet and available maps indicate 225 feet) and 2,000 feet of drifts had been driven on 3 levels at 75-foot intervals (see fig. 3). These are

the 75-foot, 150-foot and 225-foot levels. The mine remained idle from 1944 until July 1954, at which time the International Ore Corp. assumed control and put the plant into operation. The officers of this company are D. W. Simpson, President; T. H. Donaldson, Vice President and J. H. Lochausen, Secretary-Treasurer. The address of the Company is Box 1091, Wickenburg, Arizona. The new operators mined surface and near-surface ores by open pit and glory-hole methods and started regular production of mercury in February 1955.

PRODUCTION AND GRADE

The exact production for the Pine Mountain mine is not known to us but the property was one of the 4 principal contributors to Arizona mercury production from 1940 to 1944, inclusive, these being the years of greatest production of mercury in Arizona. It is reported[1] that 2 flasks of quicksilver were produced daily from July 16 to December 1, 1940, with a crew of 25 men. It was reported in newspaper accounts that in March 1941 54 tons of ore were treated daily, and in April 1941 that 40 tons of ore were treated in 24 hours. In June 1942 it was reported that the 25-ton furnace was treating mine run ore averaging 7 pounds of quicksilver per ton and that 2½ flasks of quicksilver were being produced daily. These reports may be typical of daily or monthly production, but are not applicable on an annual or long term basis, otherwise the amount of mercury produced in Arizona from 1940 to 1945 would be much greater than shown by available statistics. In January 1945, after operations ceased, it was reported that 400 flasks of quicksilver had been produced during 1943 and 1944. This appears

[1] Wilson, E.D., Arizona Bureau of Mines Circular No. 9, Mercury, p. 6, 1941.

to be a reasonable estimate and may represent the average production for the period of operations from 1940 to 1944, inclusive; i.e., an estimated production of 200 flasks annually from the Pine Mountain property. This estimate is partly confirmed by the 1943 production given in the Minerals Yearbook. In the first part of 1943 the Pine Mountain mine yielded 76 flasks from 2427 tons of ore and in the second part of the year yielded 137 flasks from 1863 tons, under 2 managements. Thus in 1943 a total of 213 flasks of quicksilver were produced. During the first part of the year the yield of quicksilver was 2.4 pounds per ton and the yield was 5.04 pounds per ton during the last part of 1943.

It is claimed by the applicant that the period from July 1, 1943 to June 30, 1944 was a typical period of operation. It is reported that production records of this interval show that the mine operated 8 hours daily, the mill operated 3 days out of 10, and that gross returns of mercury sold amounted to about $50,000. If we assume that the average price of quicksilver was $190, then it indicates that 263 flasks of quicksilver were produced during this 12-month period. This checks reasonably well with the data given in the paragraph above.

Engineers' estimates prepared for the applicants indicate that about 25,000 tons of calcine are stored in the waste dump and this probably is a good estimate of the amount of ore produced prior to 1954. In practice it is assumed that a given quantity of ore yields an equal amount of calcine.

The International Ore Corporation produced 69 flasks of quicksilver during the rehabilitation period from July 1954 to February 1955, and from February 14 through September 1955, had

produced 234 flasks of quicksilver from 7061 tons of ore, an average recovery of 2.5 pounds per ton, all of which was mined from the open cut. If the total production is 32,000 tons of ore, and the recovered quicksilver is 1,200 flasks of quicksilver, it indicates a recovery of only 2.9 pounds quicksilver per ton. I believe this estimated recovery is too low and is subject to revision.

In the lower adit Lemsen took 22 samples in August 1937 and apparently took 2 more at a later date, each representing a 5-foot cut or a total sample length of 180 feet, and he obtained an average grade of 0.11 percent mercury for the entire adit. The sample from the first 5-foot interval near the portal of the adit yielded 0.124 percent mercury and 60 to 95 feet from the portal he obtained an average of 0.257 percent mercury. This 35-foot-wide zone is probably the "B" zone as named by Benedict in 1932.

Parts of the "B" and "C" zones can still be seen near the surface where the ore is now being mined, and the "A" zone can be seen in the upper adit. All the ore mined has been from the "B" and "C" zones; the "A" zone was thought to be too low grade to be minable. The "A" zone in the upper adit was recently sampled by Malquiadas Contreras, Engineer for the applicant Company, and the weighted average of 4 samples indicated a mercury content of 0.175 percent, for a sampled length of 18.9 feet horizontally. The applicants believe this is minable ore under present conditions. It is reported that near the surface the "A" zone is 15.5 ft. thick. The "B" zone is 12 feet thick and the "C" zone is 8 feet thick. The "B" and "C" zones are about 10 feet apart and the "A" and "B" are about 70 feet apart.

Consulting geologists for the applicant corporation expect zones "B" and "C" to converge within 100 feet below the surface workings. In the miscellaneous old reports there is considerable difference in the reported thickness of the ore zone but this can be accounted for by slight irregularities in the ore zone and by the fact that the limits of the ore zone are actually assay limits.

In 1932 Benedict reported that in the lower adit the "B" zone was 6 ft. thick and contained about 9 pounds of mercury per ton and the "C" zone averaged 4.8 feet in width and contained about 0.5 percent mercury. At this same locality Contreras sampled "C" zone and obtained 0.58 percent mercury for a thickness of 4.8 feet. In "B" zone, 8 samples taken by Contreras on both sides of the drift to represent a thickness of 14.1 feet, contained a weighted average of 0.295 percent mercury. This writer took one sample each of the hanging wall part of zones "B" and "C", both representing zones 10 feet thick normal to the structure, and these samples contained 0.10 and 0.06 percent respectively. The footwall sides of both zones are reported to be considerably higher grade than the hanging wall sides but were not accessible for sampling in September 1955. When the property was examined by this writer the operators claimed the recovery was only slightly less than 4 pounds of quicksilver per ton, and this low grade they thought was due to the large amount of waste mined with the sample ores. Undoubtedly waste dilution at present is an extremely important factor in contributing to the low grade of ore fed to the furnace. The operators claim neither loss nor profit from the operations but believe that if cleaner ore could

be mined from underground, and if the size of the reduction plant coul d be increased, or if the present plant could be operated continuously at capacity, then a substantial profit would result. The ore supply presently available is not great enough to allow continuous operation at capacity.

GEOLOGY

The mercury deposits of the Mazatzal Mountains occur in 4 east-northeasterly trending mineralized zones which are designated as the Slate Creek, Alder-Sycamore, Mercuria and Pine Mountain belts. The Pine Mountain mine is within the last mentioned belt and is situated about 3/4 of a mile southwesterly from the Summit of Pine Mountain, a conspicuous landmark in the area. In the Pine Mountain mine area mercury is said to have been traced intermittently for a distance of 7500 feet along the strike of this mercury-bearing belt. Prospecting and development has been done at two principal places, the first being on Brush Creek at a locality known as Reynolds cabin, and the other, which is known as the Pine Mountain mine, is on a branch of Sycamore Creek about 2000 feet west of Reynolds cabin. Only the Pine Mountain mine area was visited in September, this being the only place where exploration was proposed.

The Pine Mountain belt consists essentially of reddish slates, intruded by dikes and irregular masses of rhyolite porphyry, similar to that which forms the core of Pine Mountain. In the vicinity of the quicksilver deposits the slate has been metamorphosed to a bleached or brownish sericitic schist.

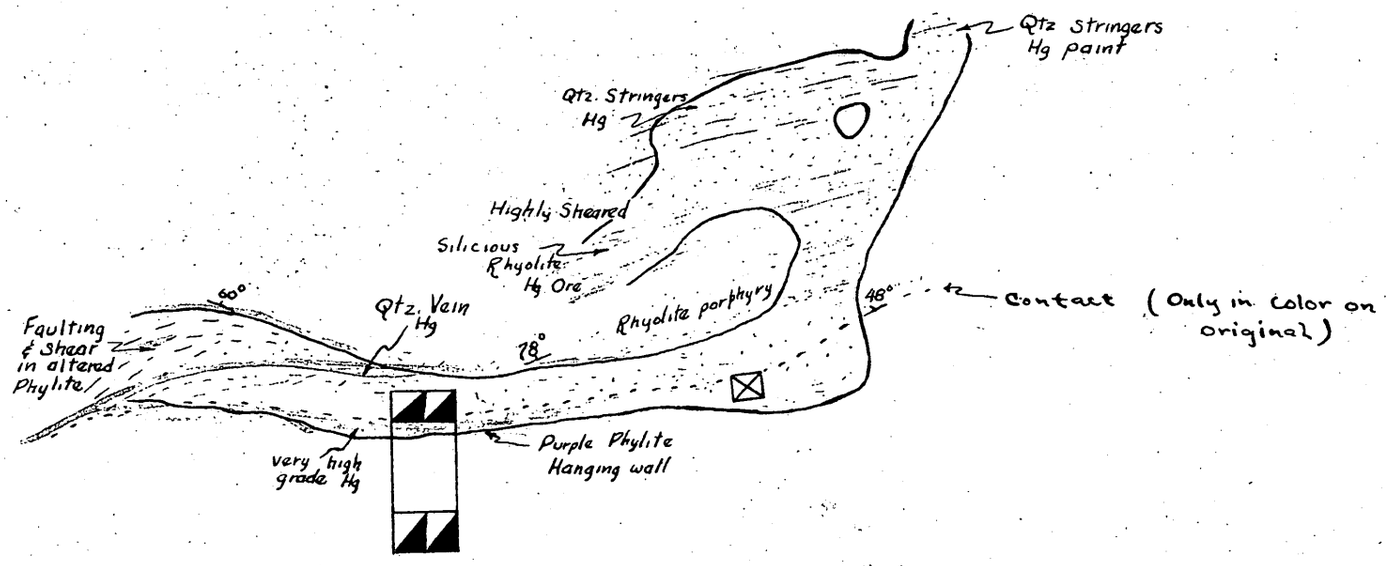
The principal valuable mineral is cinnabar; however, native mercury and traces of calomel have been reported, and black surface stain on some of the near surface ore is believed to be metacinnabar.

Considerable limonite, probably derived from pyrite and iron-bearing carbonates is present, and small amounts of oxides of copper are present in several places. The dominant gangue minerals are quartz and iron-bearing carbonates.

The ore consists principally of bleached or brownish schist, and fractured and altered rhyolite; in which fine particles of cinnabar are disseminated in sufficient quantity to cause a pink tint in the host rock. Small amounts of cinnabar occur in narrow discontinuous veinlets, usually less than 1/2 inch wide, and these are localized along partings in the schist or on narrow fractures that are transverse to the foliation. The cinnabar in the veins is invariably associated with a gangue of quartz and iron-bearing carbonate, but these are not noticeably abundant at the Pine Mountain mine. Pyrite and tetrahedrite have been reported but not seen by this writer.

Maps of the Pine Mountain mine (fig. 4) prepared by F. C. Benedict in 1932 showed that cinnabar is localized in 3 nearly parallel zones which were designated as "A", "B" and "C", named in order from footwall to hanging wall or from southeast to northwest, each zone is separated from the others by barren schistose or rhyolitic wall rock. These zones strike about N 50°-60° E and dip about 45°-50° west and tend to be more-or-less parallel to the foliation of the schist and fractures or shear zones in the rhyolite. The ore zones are nearly parallel to the east slope of Sycamore Creek Canyon, so the part of the zones extending above the floor of Sycamore Creek Canyon was very favorably situated for exploration and open cut mining.

MIDCO RESERVES INC.



30 ft. Sub-level

Scale 1" = 20' Nov. 1944

FIG 5

Pine Mt Mine
Original probably by C.A. Resor
Traced 10/11/55

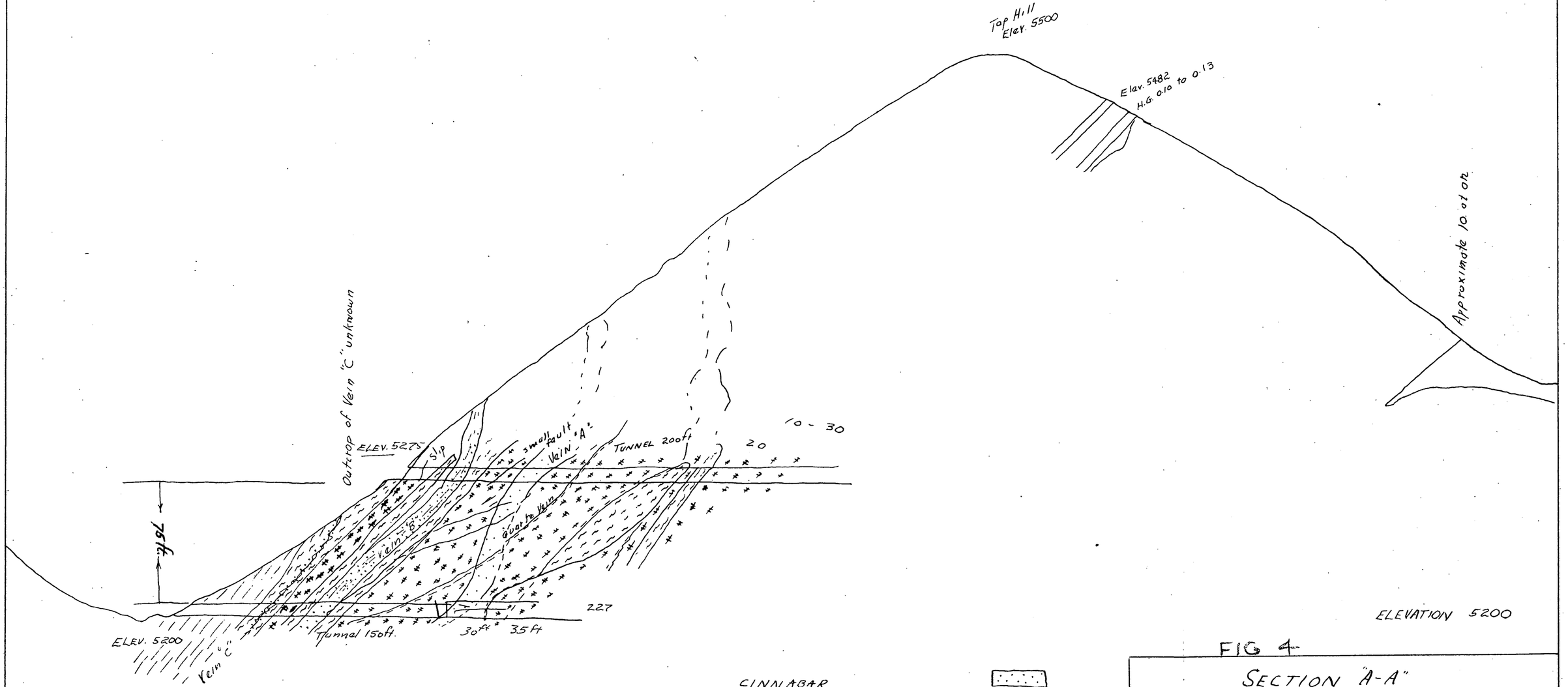


FIG 4

SECTION "A-A"
LOOKING NORTHEASTERLY
PINE MT. MERCURY PROSPECT
Scale 1 inch = 50 ft.

To Accompany March 1932 Report of P.C. Benedict.

The mine is situated in an area that is obviously deformed by folding of the schist and by numerous faults, believed to have relatively small displacements, and which cut both the schist and rhyolite. Because of poor exposures evidence of faulting is not conspicuous at the surface, but it is a noteworthy feature on all maps of the mine workings. Undoubtedly structural deformation of the country rock has been an extremely important factor in the localization of the ore bodies.

Inspection of the map of the underground workings (fig. 3) reveals that 2 ore bodies have been mined from the surface or near the surface to the 3rd level. These ore bodies have a distinct northerly rake and may be arranged en echelon, along both strike and dip of the ore zone. The south ore body, which is the body closest to the shaft, appears to have been mined from above the 1st level to the 3rd level. The strike length of this ore body, as shown on fig. 3, was about 100 feet on the 1st level and about 45 feet on the 3rd level. The north, or main ore body, which appears to be the larger, has a strike length of about 100 feet near the surface and is about 125 feet long on the 3rd level as interpreted from fig. 3. On the 3rd level the south ore body appears to be about 5 feet thick and the north ore body about 15 feet thick as estimated from Fig. 3. A map (Fig. 5) of the 30-ft. sublevel (below 3rd level), indicates the mineralized zone was about 35 feet wide horizontally near the north end of the mine.

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ORE RESERVES

Consulting geologists for the applicant company estimated the total ore reserves of all classes to be 326,563 tons of ore having an average grade of nearly 0.2 percent mercury. I believe this tonnage estimate is fantastic and probably should be divided by about 10; however, a grade of 0.2 percent mercury or more is in the realm of possibility.

Conditions at the mine prevent making a reasonable estimate of ore reserves. The ore that formerly existed near the surface is almost mined out and will probably be exhausted before the end of 1955. Likewise the available maps suggest that the South ore body is essentially mined out, it having diminished in size downward to the point where only a small body, about 40 feet long and 5 feet wide remains on the 3rd level. The north ore body appears to be essentially mined out down to the 3rd level, but available maps indicate that mercury ore is present on the 3rd level, the 30-foot sublevel (fig. 4) and certainly must extend below it. An ore body having a strike length of about 125 feet and a horizontal width of about 20 feet (15 feet true thickness) appears from the map to be present on the 3rd level and also on the 30-foot sublevel. This indicates the reserves below the 3rd level might amount to 250 or 300 tons per foot of depth vertically. There is no geological reason to indicate that ore will not extend below the 3rd level and the 30-foot sublevel, but we do not know how long the extension might be. Undoubtedly additional ore remains in the old workings but the cost of recovery may exceed the value of the ore.

PROPOSED EXPLORATION

The workings below the level of the lower adit are completely inaccessible and the applicants propose to provide a new shaft 150 feet deep and 400 feet of drifts and crosscuts to regain entrance to the old workings. It is believed to be easier and cheaper to sink a new shaft than to reclaim the old shaft which is caved. The new shaft would be placed in the open cut, about 40 or 50 feet northeast of the old portal of the lower adit, in an area where the applicants believe reasonably good ground conditions exist. The shaft would be connected to the second level, from which it is believed the lower levels could be reached for sampling, etc. The shaft would start near the outcrop of the "B" and "C" zones and according to the applicants would pass through the "A" zone at a depth of about ~~50~~ 75 feet; this would provide another test of the "A" vein.

Review of the proposed project and examination of the property indicates that the program as originally proposed is hardly adequate, and that it should be supplemented by diamond drilling. It was decided that 3 holes, inclined 45° east and about 150 feet deep should be drilled to test the "A" zone at about 100 feet below the lower adit level. In order to avoid drilling into the old mine workings it will be best to drill these holes from underground after the shaft is completed either to the 45-foot or 150-foot levels, and it is herein suggested that the holes be drilled from 2nd level if possible. About 3 nearly vertical holes should be drilled from the surface to test for the northward extension of the ore zone believed to exist on the 3rd level. The surface holes should attempt to intercept

the ore zone about 100 feet north of the north end of the mine as shown in fig. 3. It is probable that the depth of the holes need not exceed 500 feet. The applicant has expressed interest in doing this drilling as a supplement to the original proposal. The purpose of the exploration program is to increase the available ore reserves to the point where the present plant can be operated at capacity, on a continuous basis, or to the point where increasing the capacity can be justified.

Exploration appears to be justified for these reasons:

1. Old maps indicate that ore is probably present on and below the 3rd level. This ore can be made available for sampling, exploration or mining most easily through a new shaft, as proposed by the applicants.

2. The "A" zone has been explored only in the upper adit, and is worthy of additional exploration because the applicant's samples indicate that it may contain sufficient mercury to be minable under present conditions.

3. A possible extension of the ore bodies north of the present workings has never been explored, and it is believed that such an extension of the ore zone may exist.

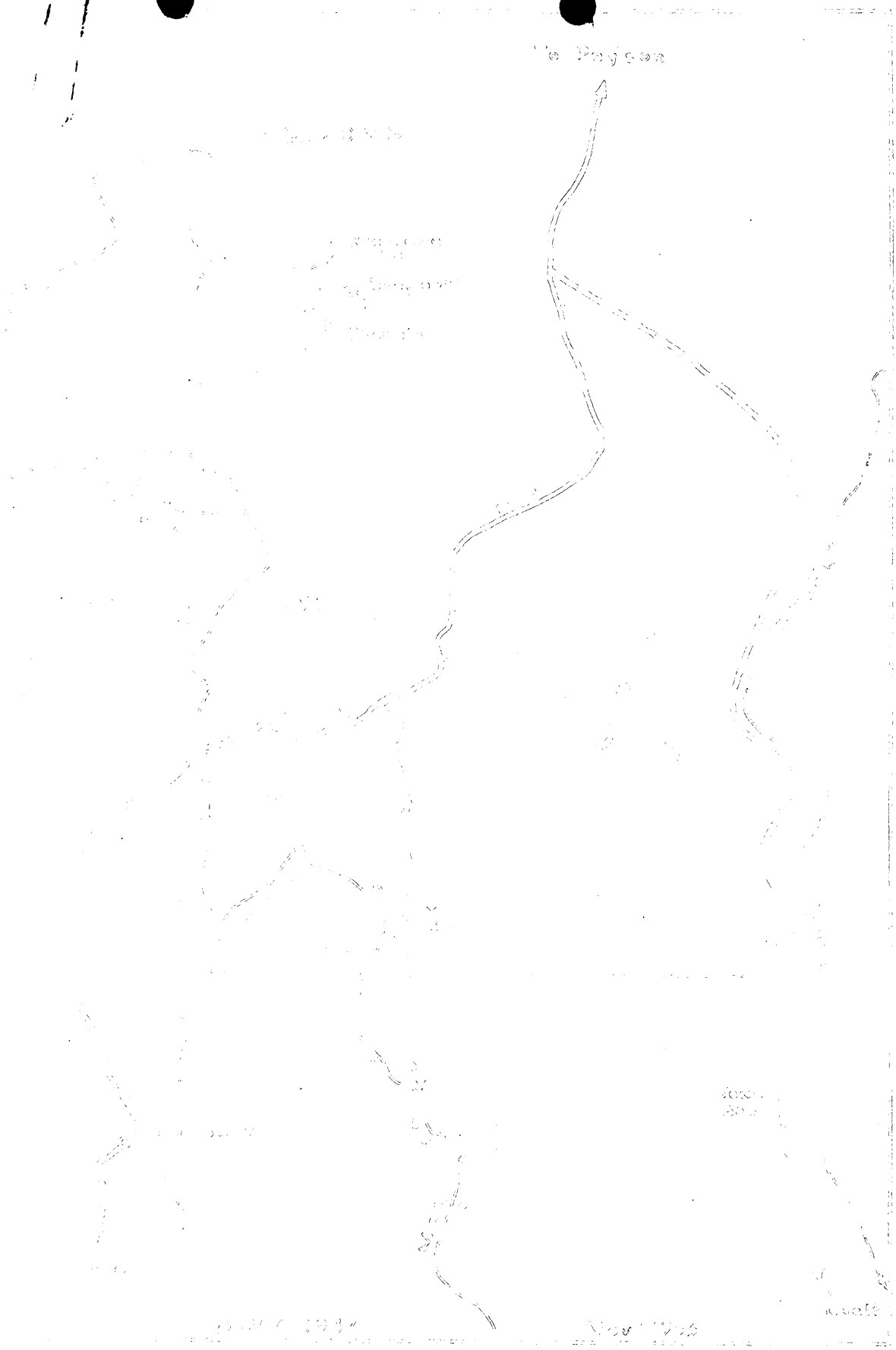
4. The Pine Mountain mine has been one of the larger producers of mercury in Arizona and it is possible that exploration will prolong the life of this mine.

If exploration results in a discovery of ore I would expect the future performance to be somewhat better than that represented by the 1940 to 1944 period, because of the competency of the applicant company.

It is likely that the applicants will start the new shaft soon and will attempt to connect with a 45-foot sublevel, and this phase of the work may be completed before a DMEA project can be approved.

CONCLUSIONS AND RECOMMENDATIONS

The Pine Mountain mine is believed to have produced not less than 1200 flasks of mercury, from about 32,000 tons of ore; therefore, it is one of the larger producers of mercury in Arizona. The north, or main orebody is probably the largest thus far discovered in the Mazatzal Mountains. The mine was successfully operated from 1940 to 1944 and during this period reportedly obtained and repaid a $30,000 R.F.C. loan. I believe that exploration might lead to the discovery and mining of about as much ore as previously produced. I therefore am recommending Government participation in exploration to include a shaft 150 feet deep, about 400 feet of drifts and crosscuts, and the drilling of 6 diamond drill holes not to exceed a total of 2000 feet of holes.



[illegible] INTERNATIONAL ORE CORP

[illegible] COUNTY, ARIZ

To Payson
ARIZONA
Maricopa Co.
Sunflower
Phoenix
Hwy

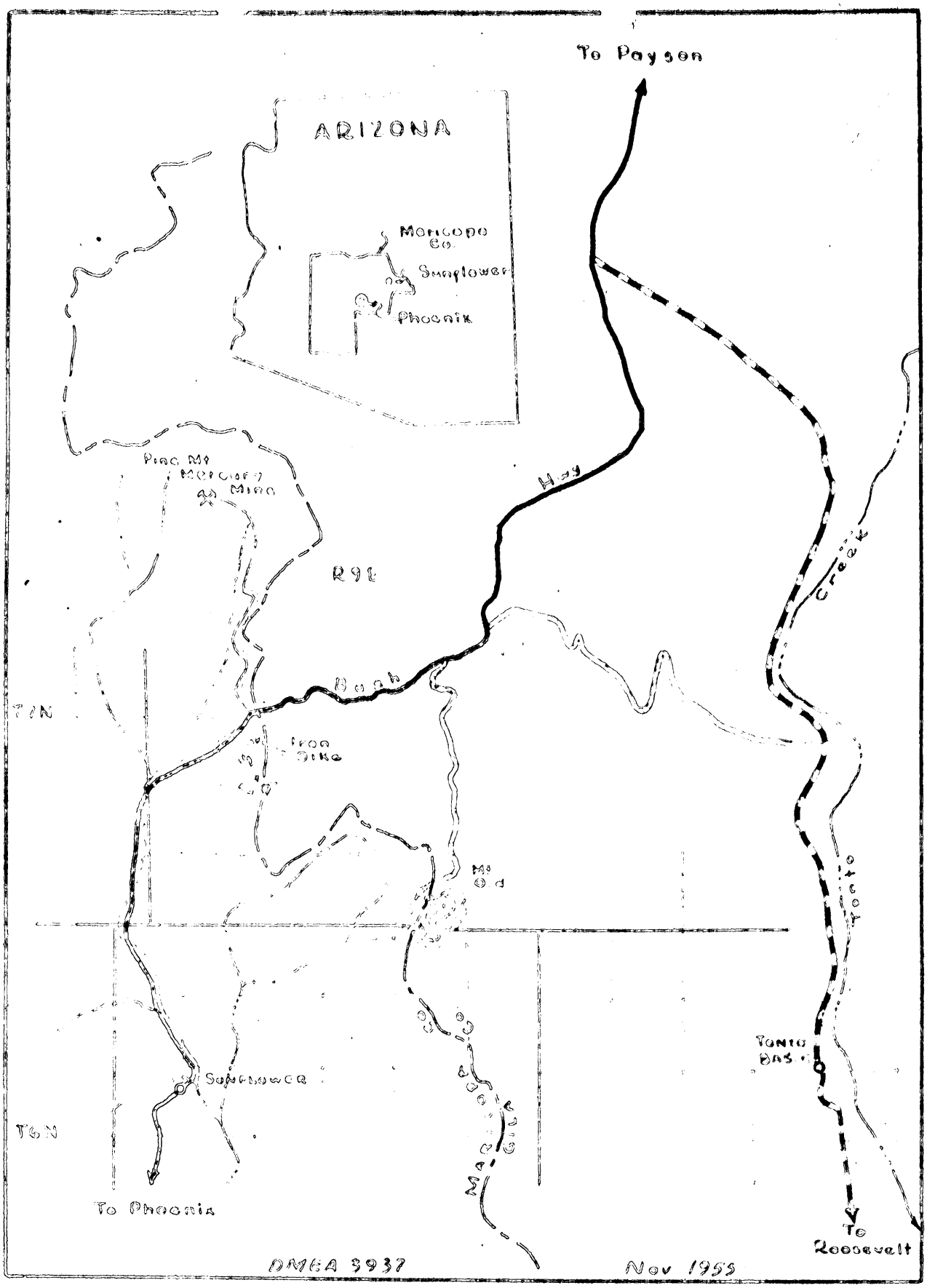


FIG 1 LOCATION MAP, INTERNATIONAL ORE CORP.

MARICOPA COUNTY, ARIZ

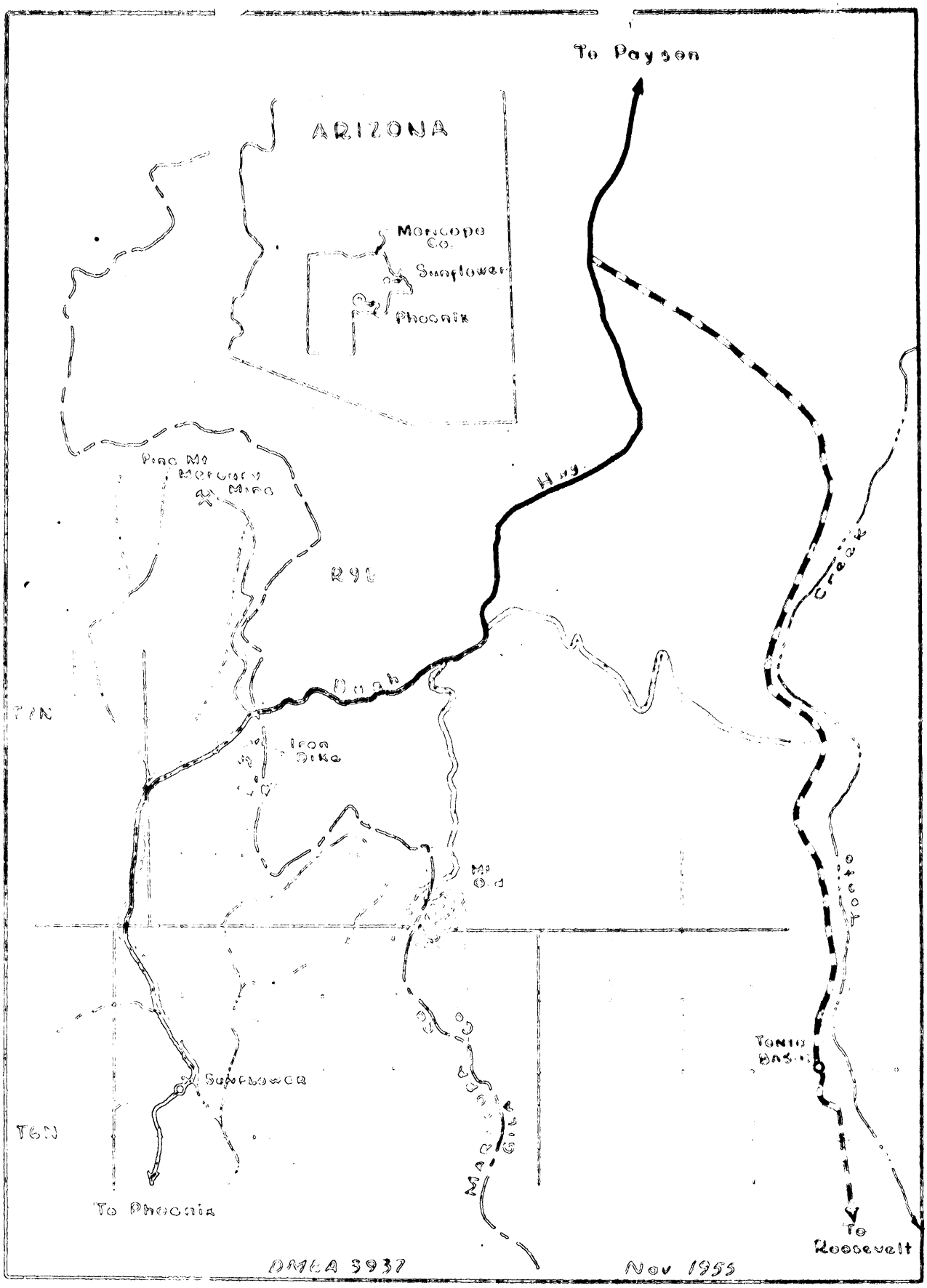


FIG 1 LOCATION MAP, INTERNATIONAL ORE CORP.

MARICOPA COUNTY, ARIZ

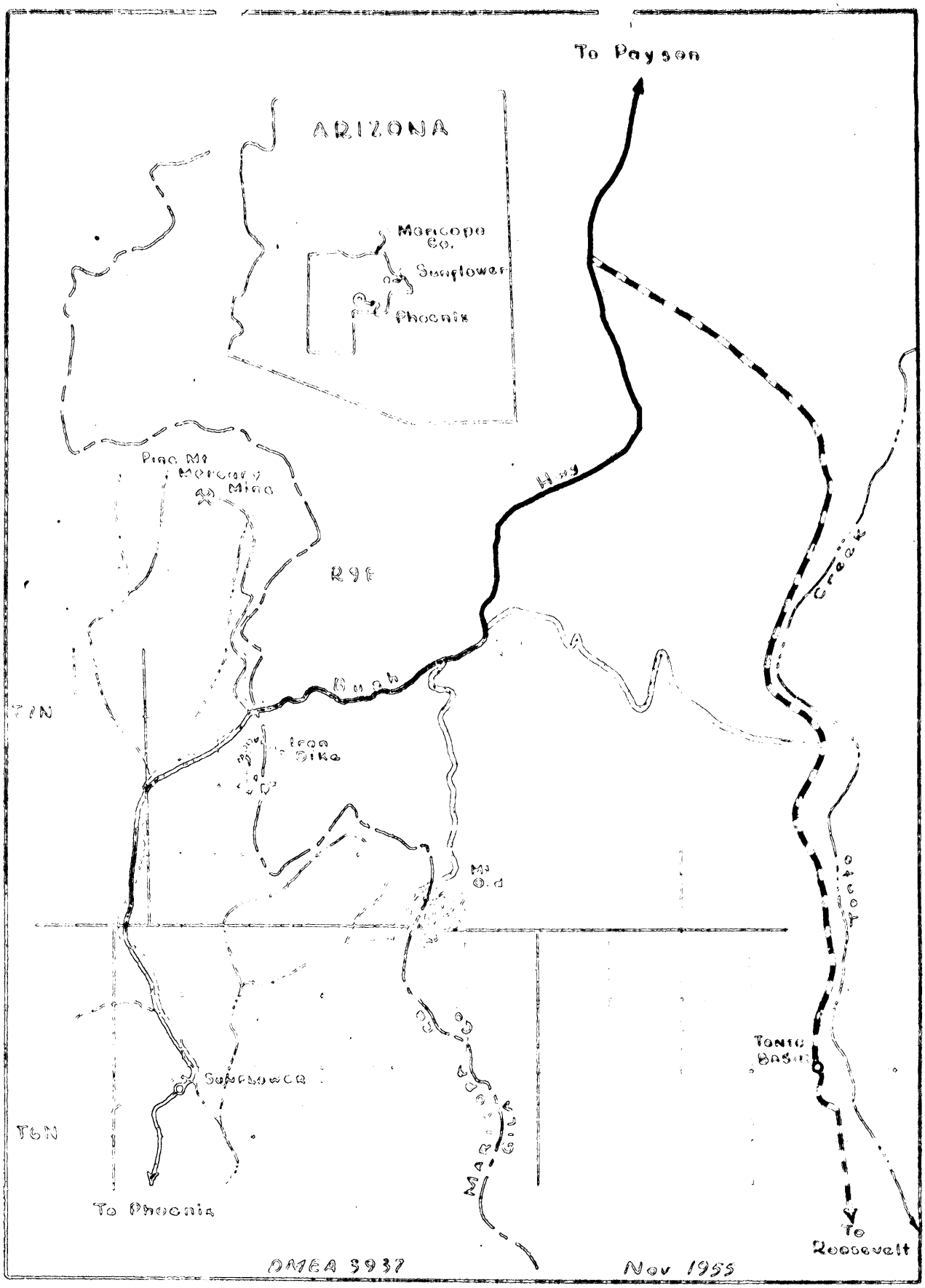
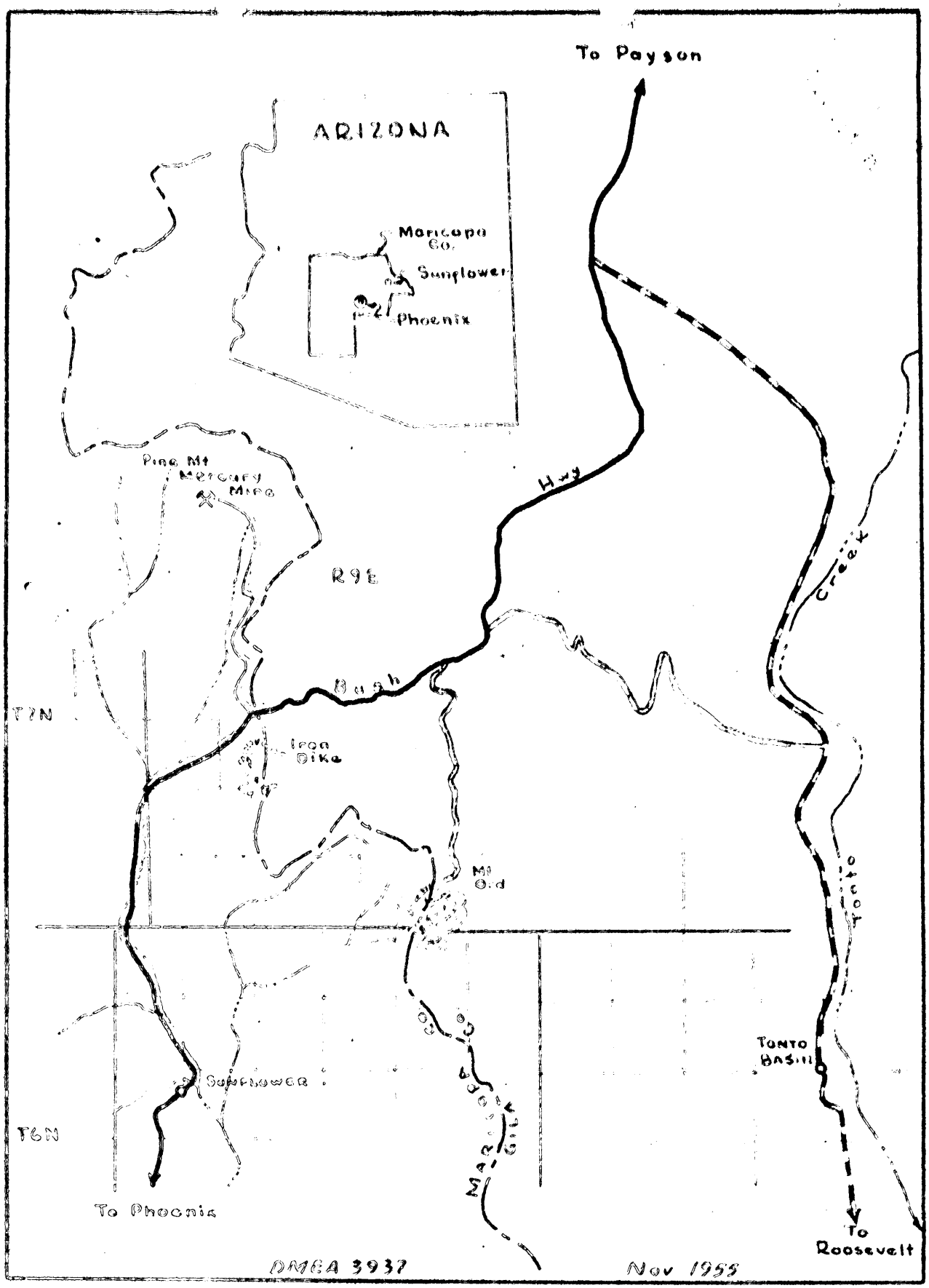


FIG 1 LOCATION MAP, INTERNATIONAL ORE CORP

MARICOPA COUNTY, ARIZ



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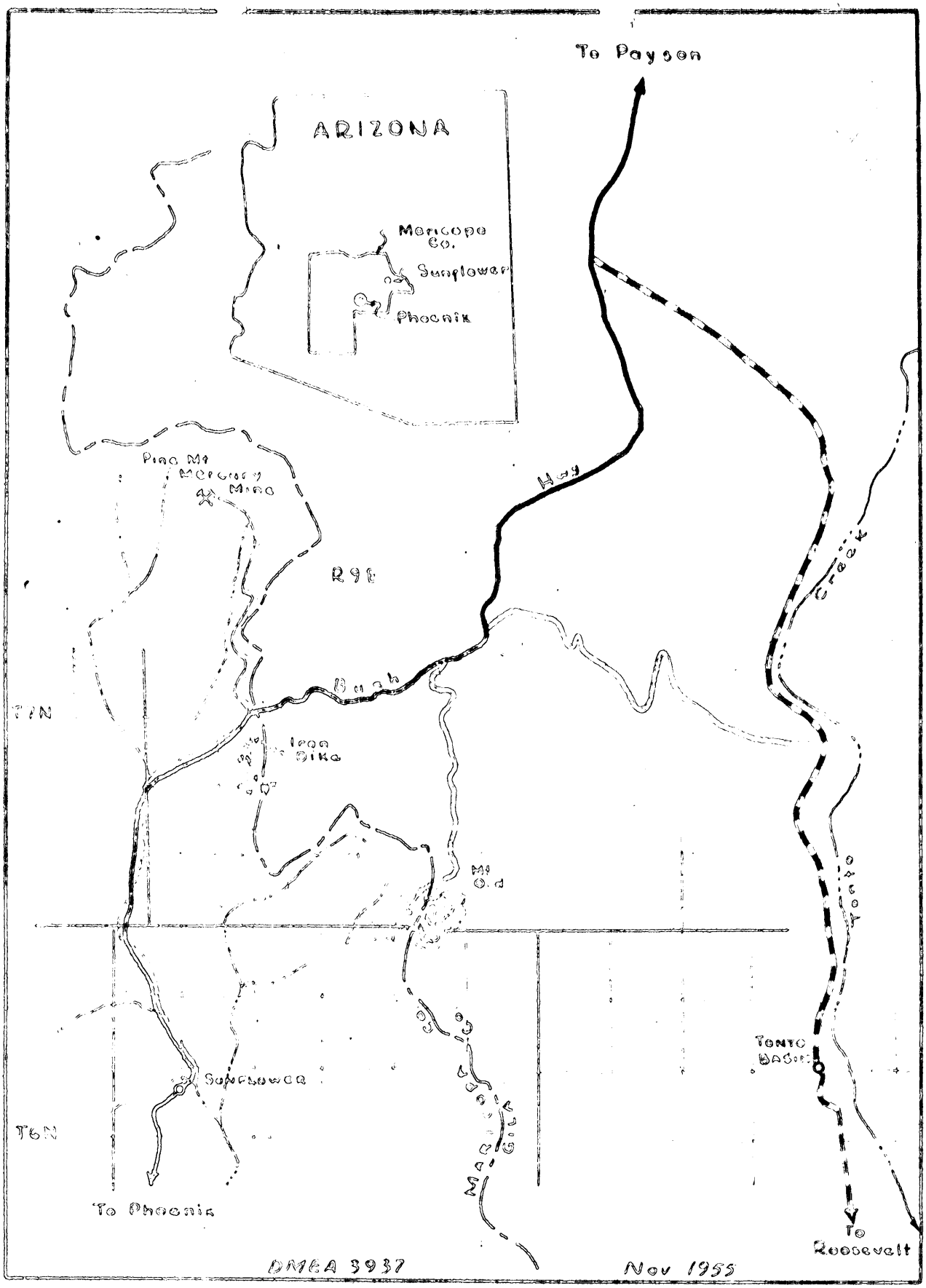
MARICOPA COUNTY, ARIZ



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MARICOPA COUNTY, ARIZ

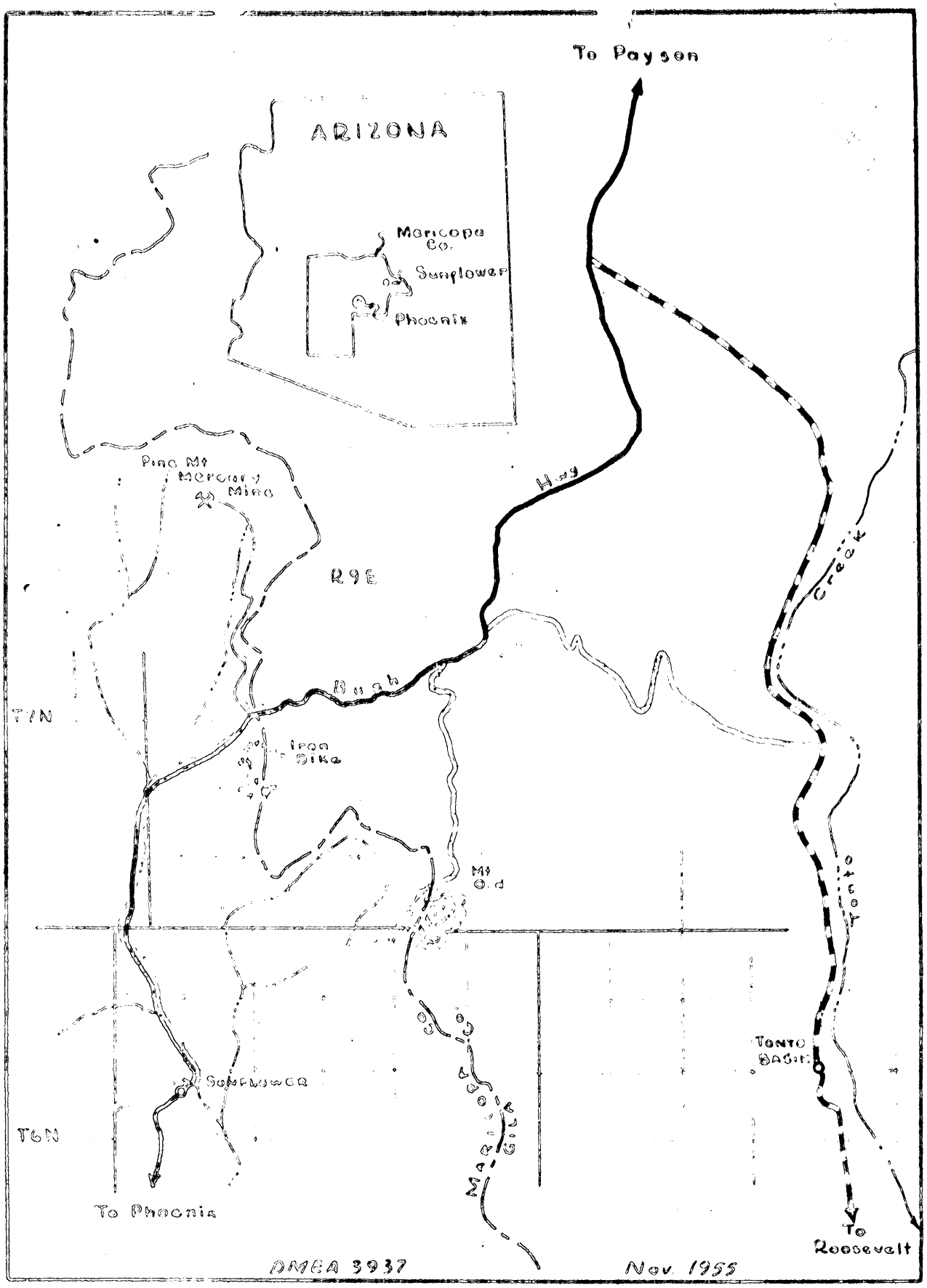


FIG 1 LOCATION MAP, INTERNATIONAL ORE CORP.

MARICOPA COUNTY, ARIZ

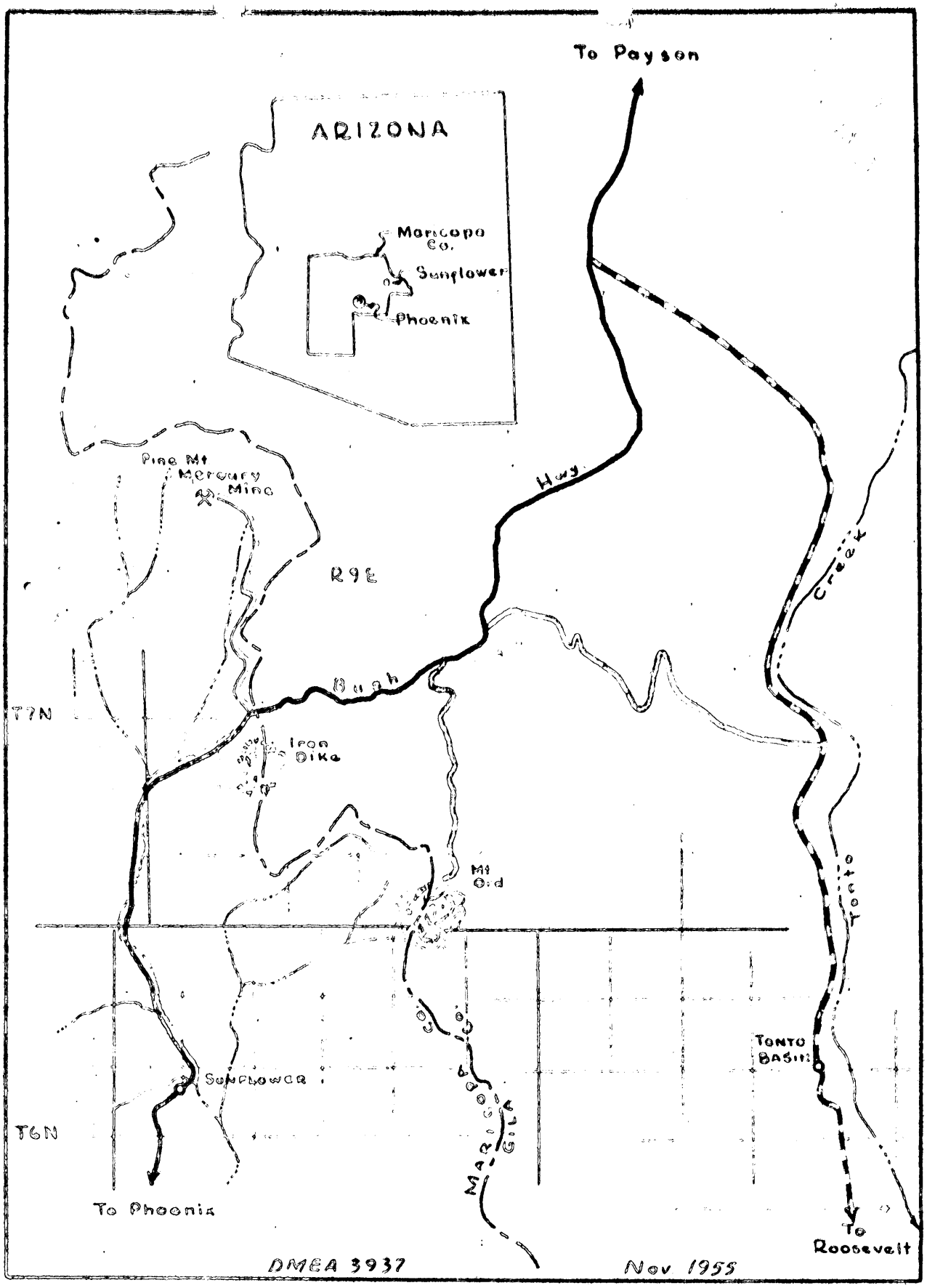


FIG 1 LOCATION MAP, INTERNATIONAL ORE CORP.

MARICOPA COUNTY, ARIZ.

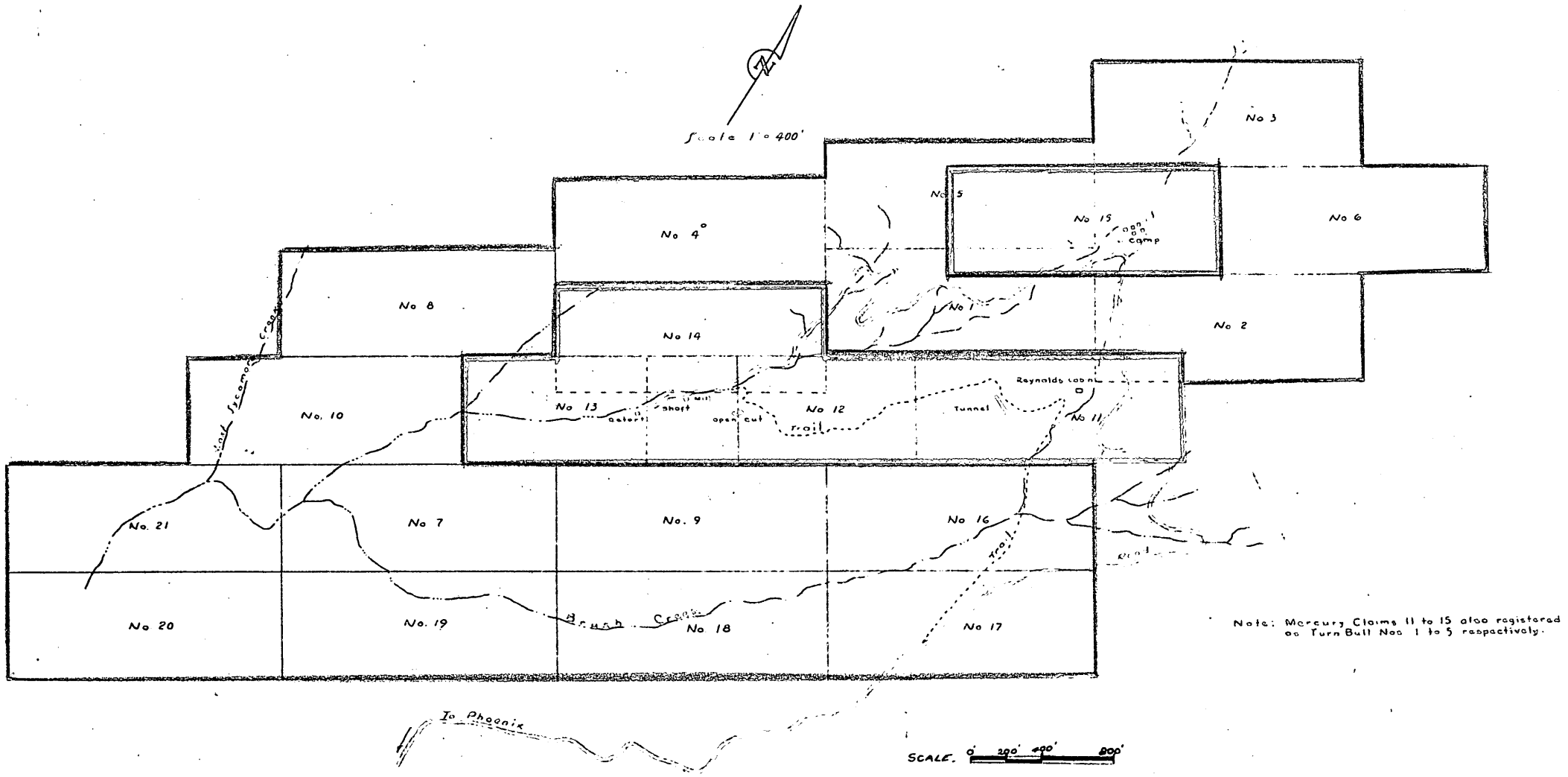
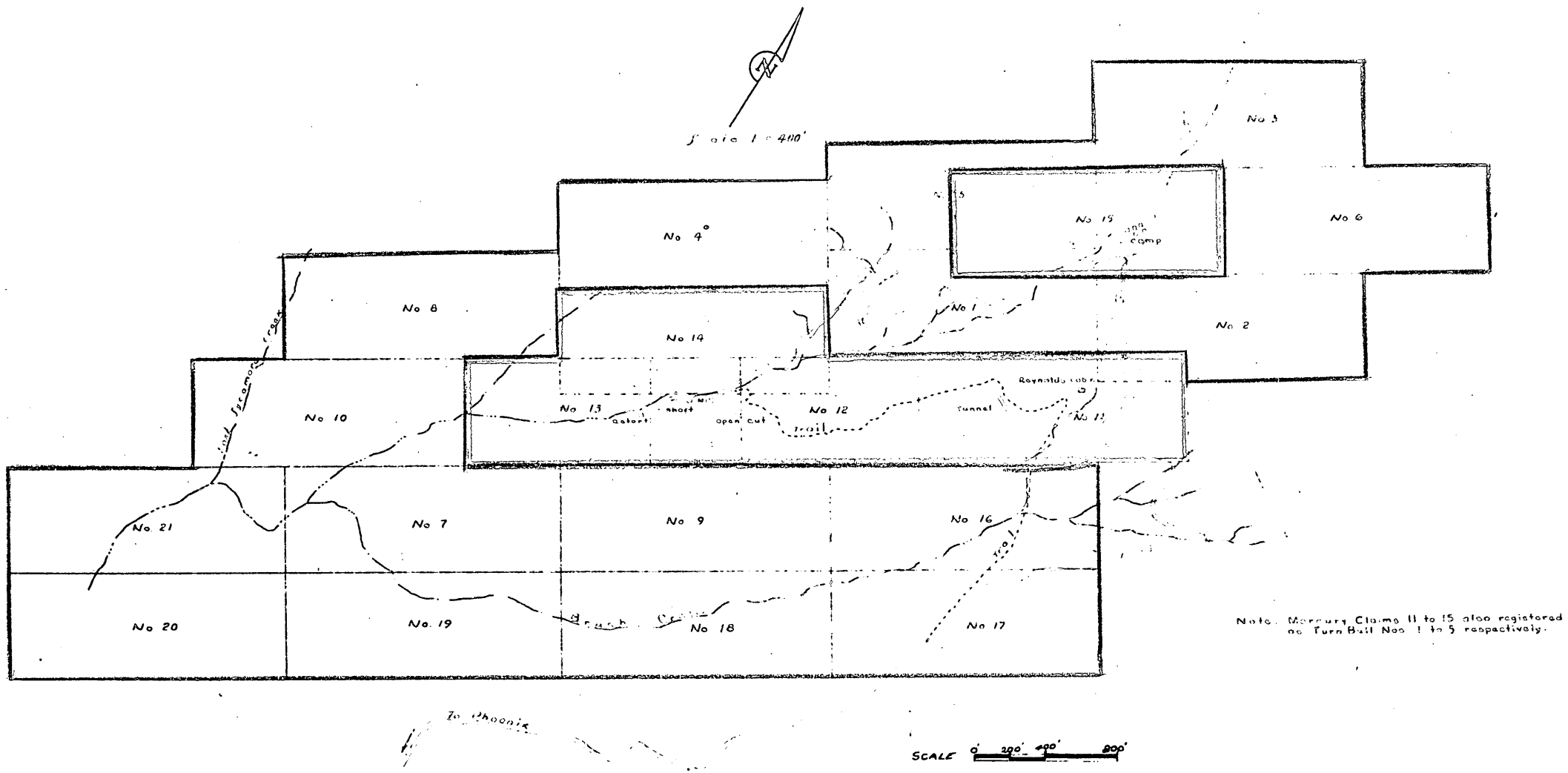
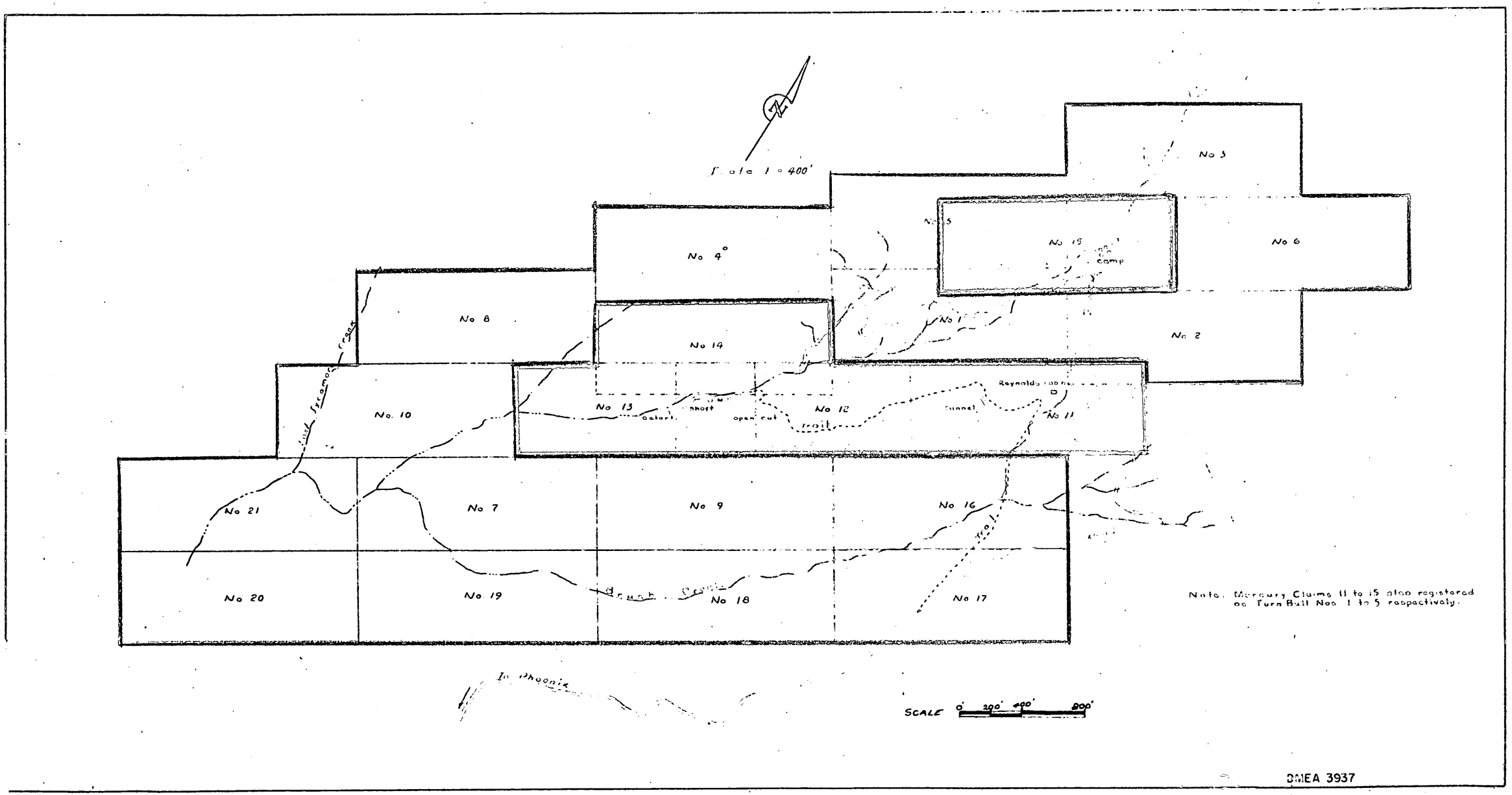


FIG.-2-CLAIM MAP, MERCURY CLAIMS 1-21, INTERNATIONAL ORE CORP, MARICOPA COUNTY, ARIZ.



DMEA 3937

FIG.-2-CLAIM MAP, MERCURY CLAIMS 1-21, INTERNATIONAL ORE CORP, MARICOPA COUNTY, ARIZ.



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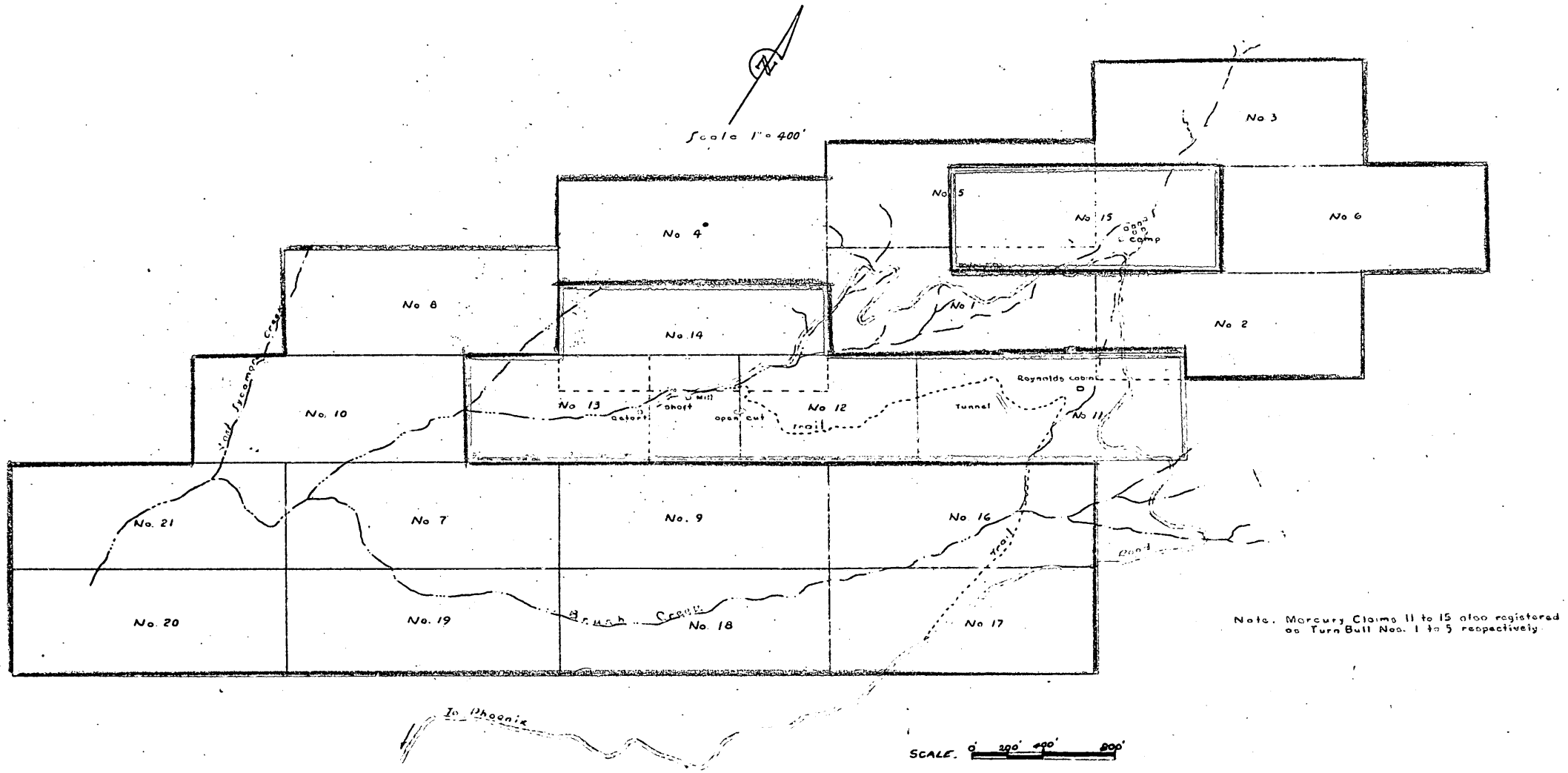
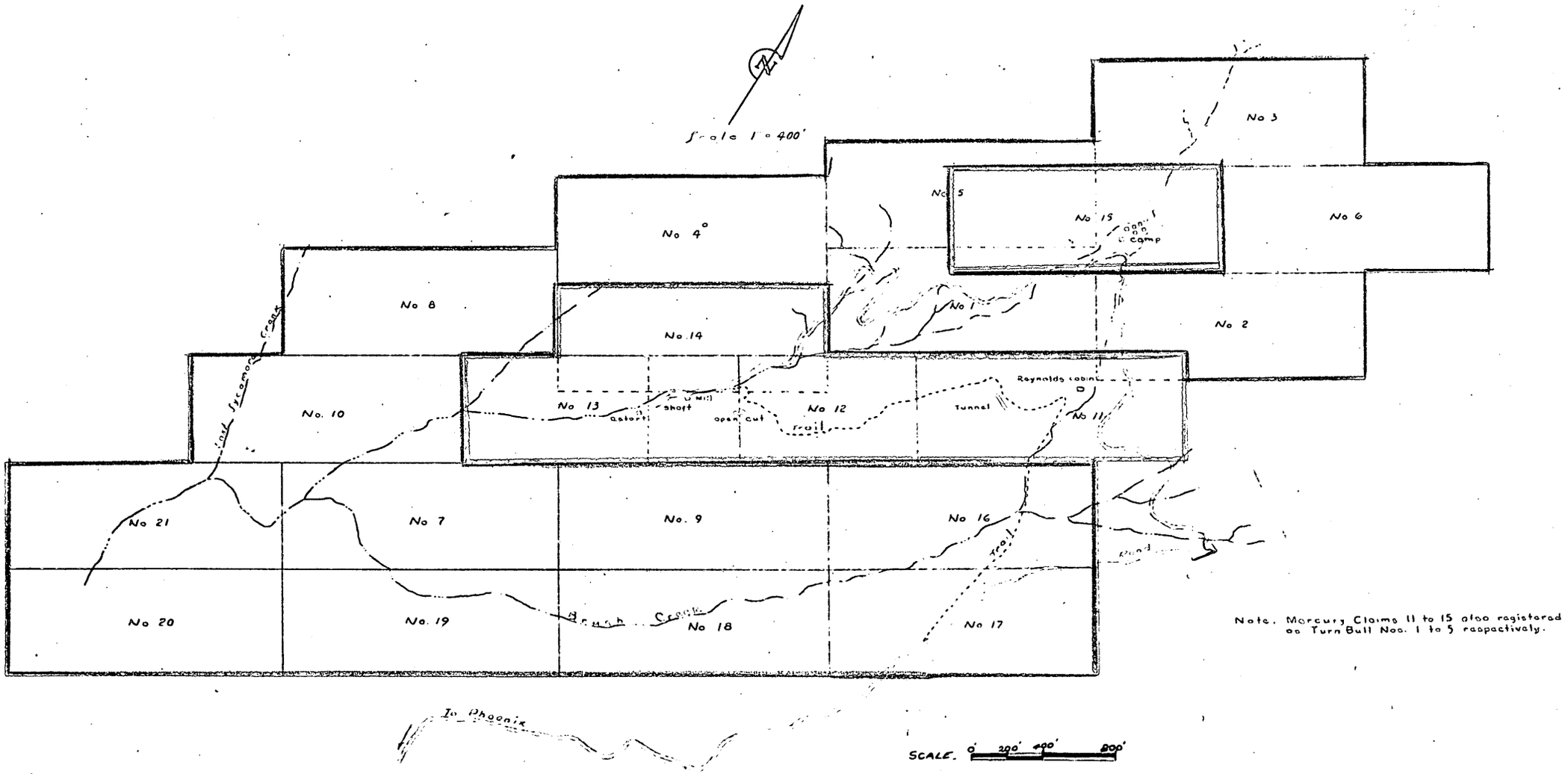


Note. Mercury Claims 11 to 15 also registered as Turn Bull Nos. 1 to 5 respectively.

DMEA 3937

FIG.-2-CLAIM MAP, MERCURY CLAIMS 1-21, INTERNATIONAL ORE CORP, MARICOPA COUNTY, ARIZ.



DMEA 3937

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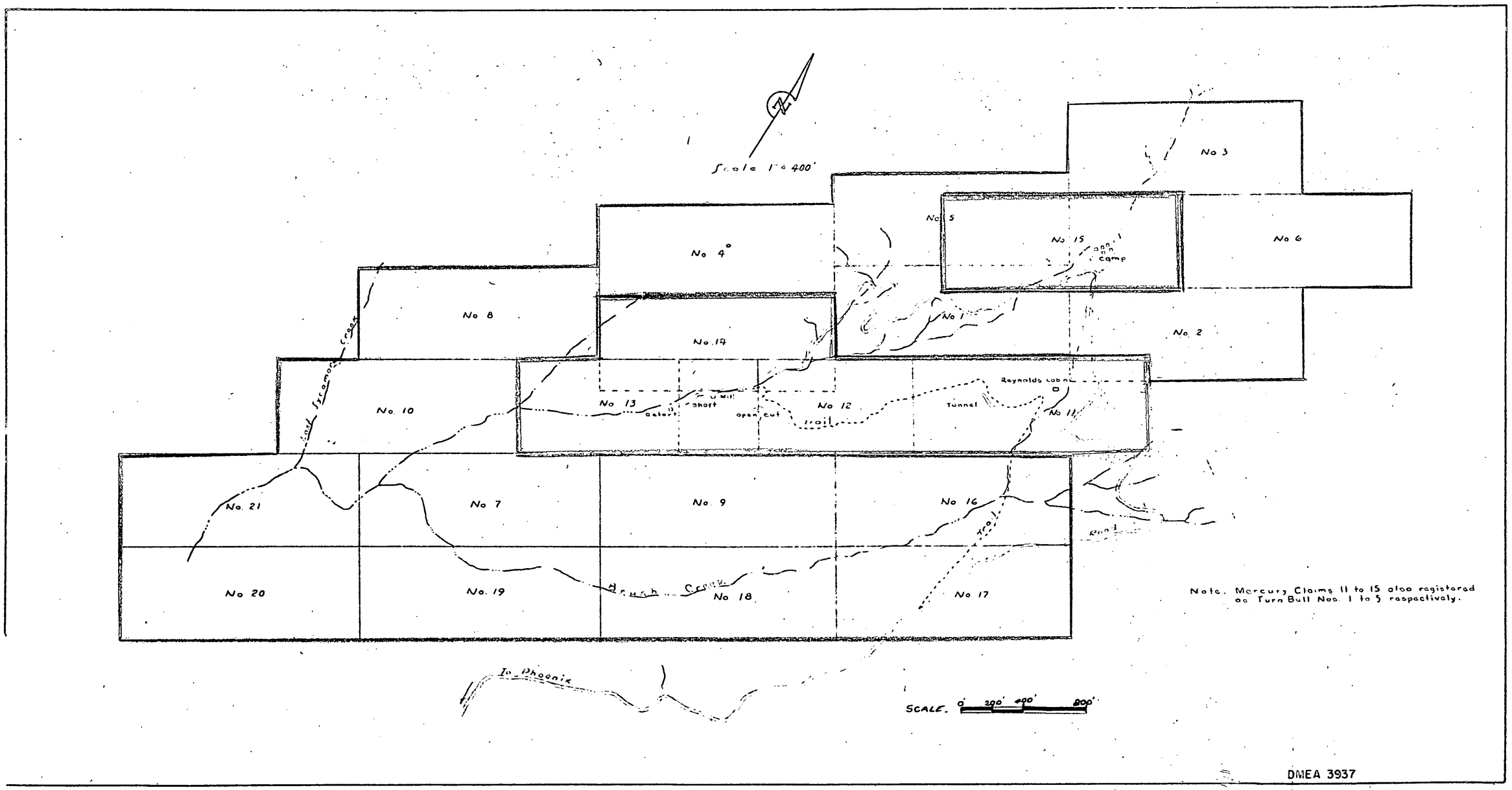

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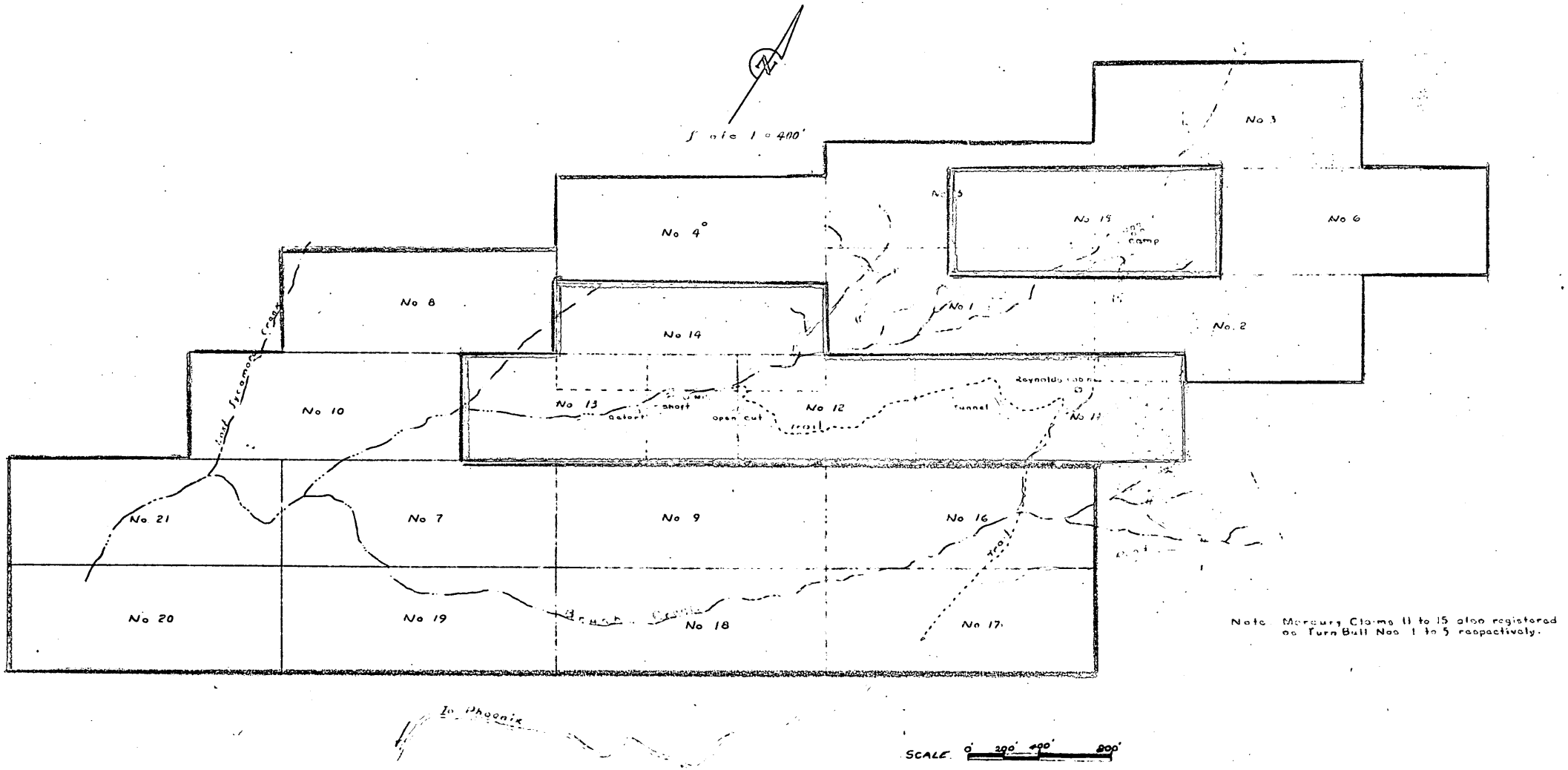

DMEA 3937

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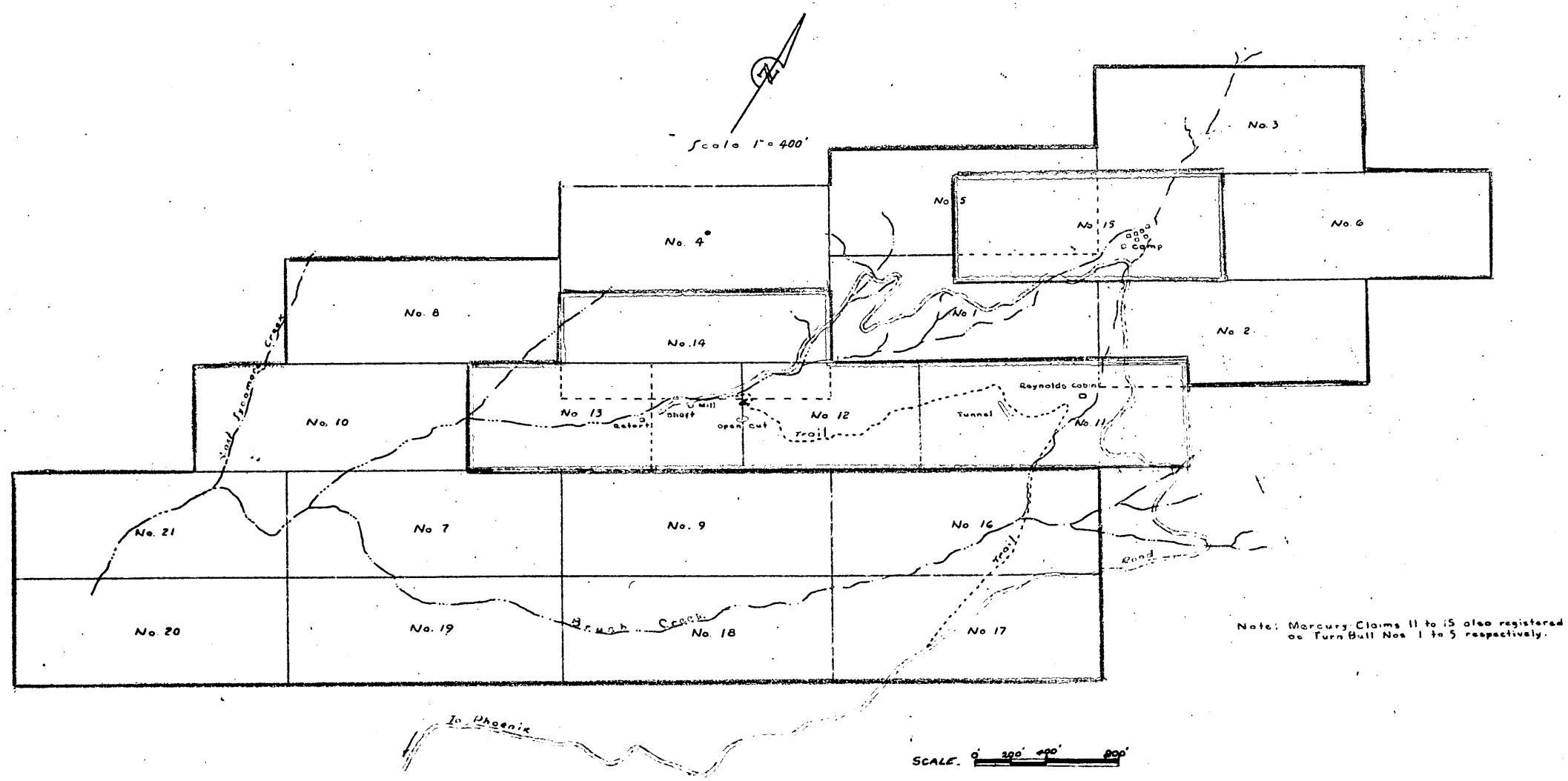

DMEA 3937

FIG.-2-CLAIM MAP, MERCURY CLAIMS 1-21, INTERNATIONAL ORE CORP, MARICOPA COUNTY, ARIZ.

DMEA 3937

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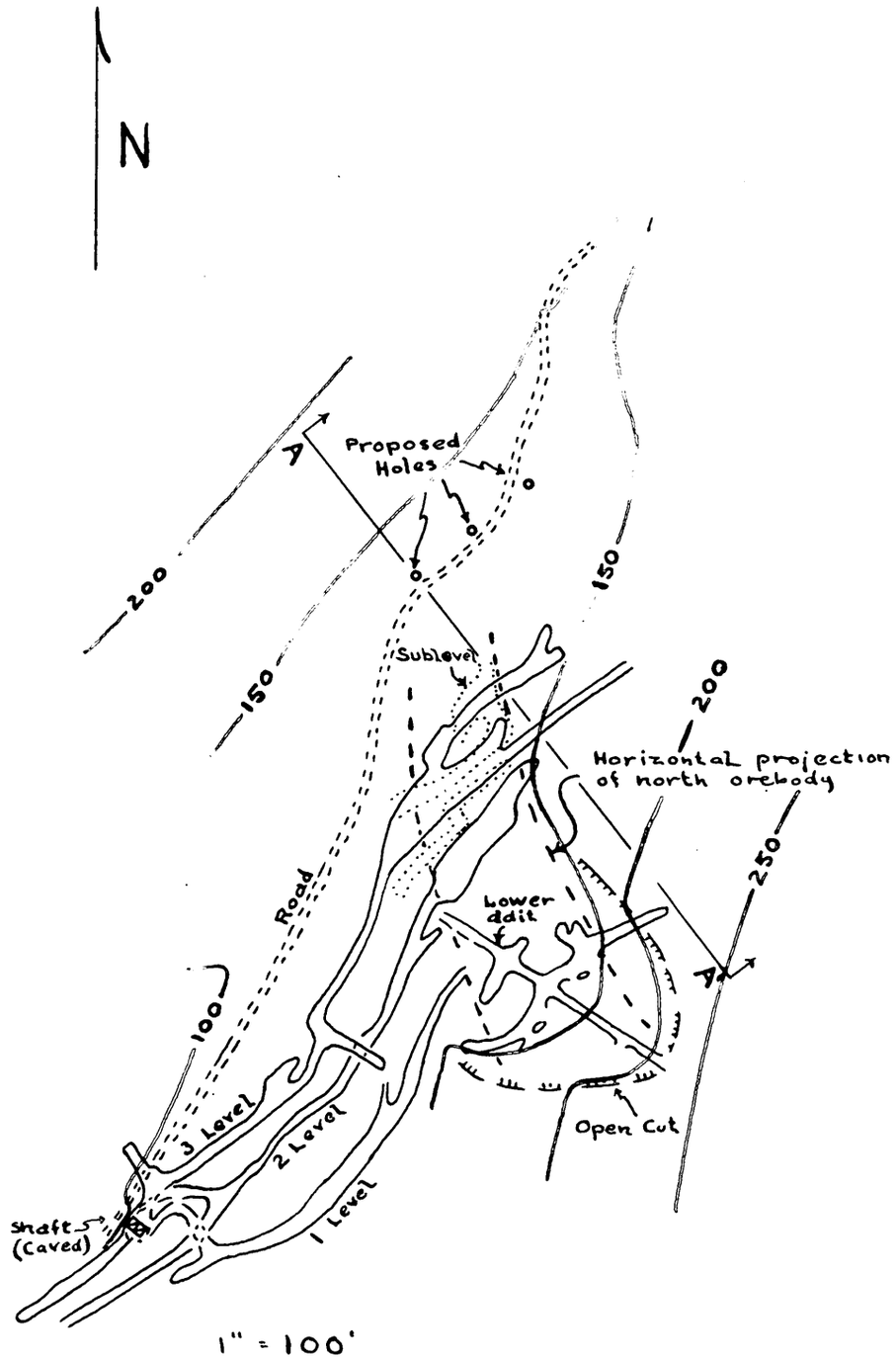
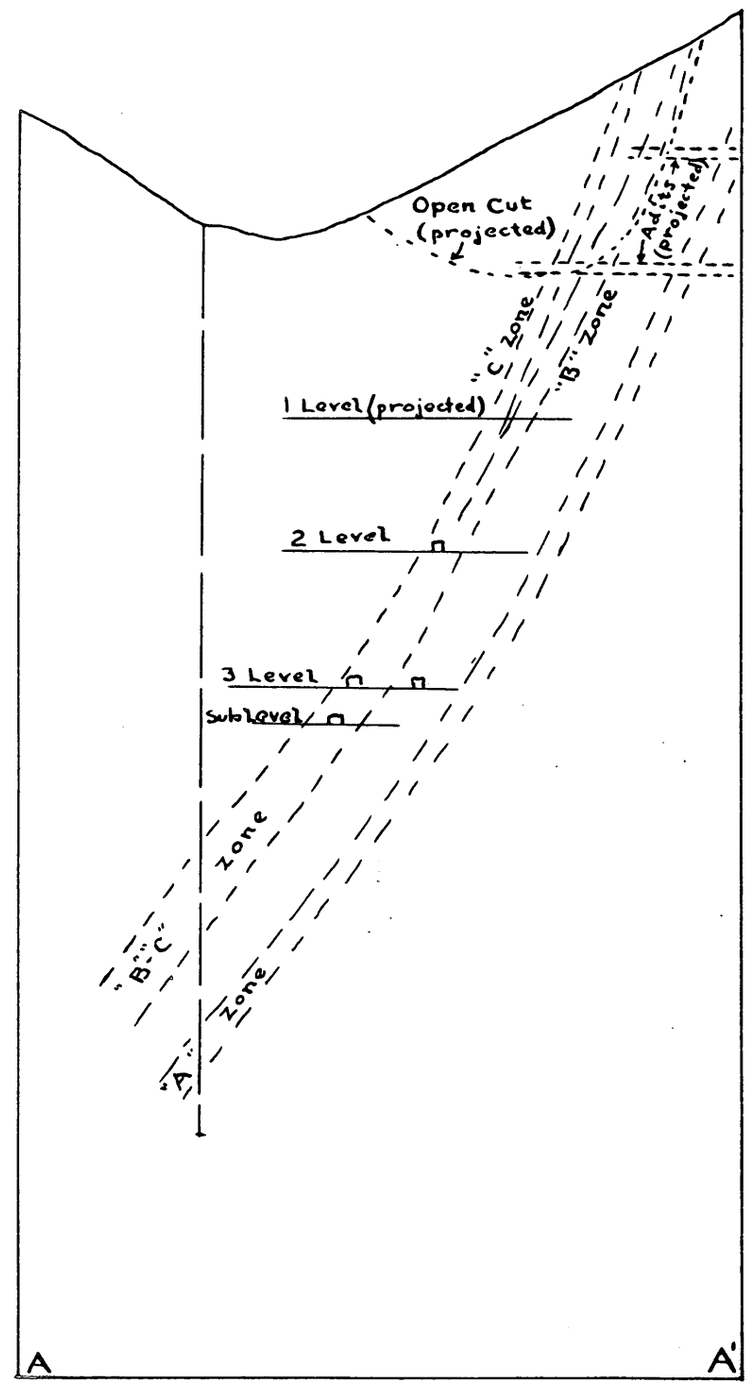




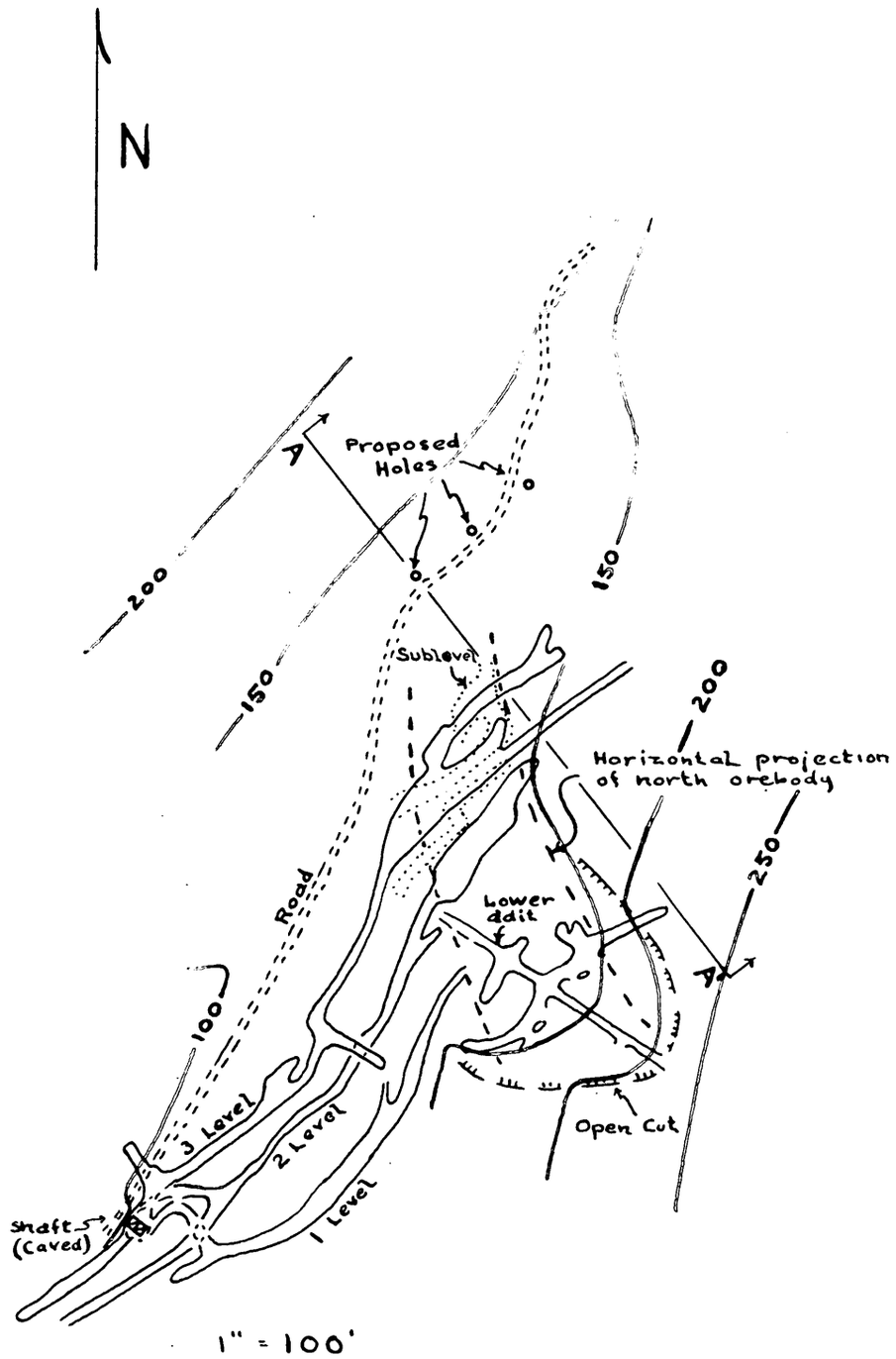
DMEA 3937

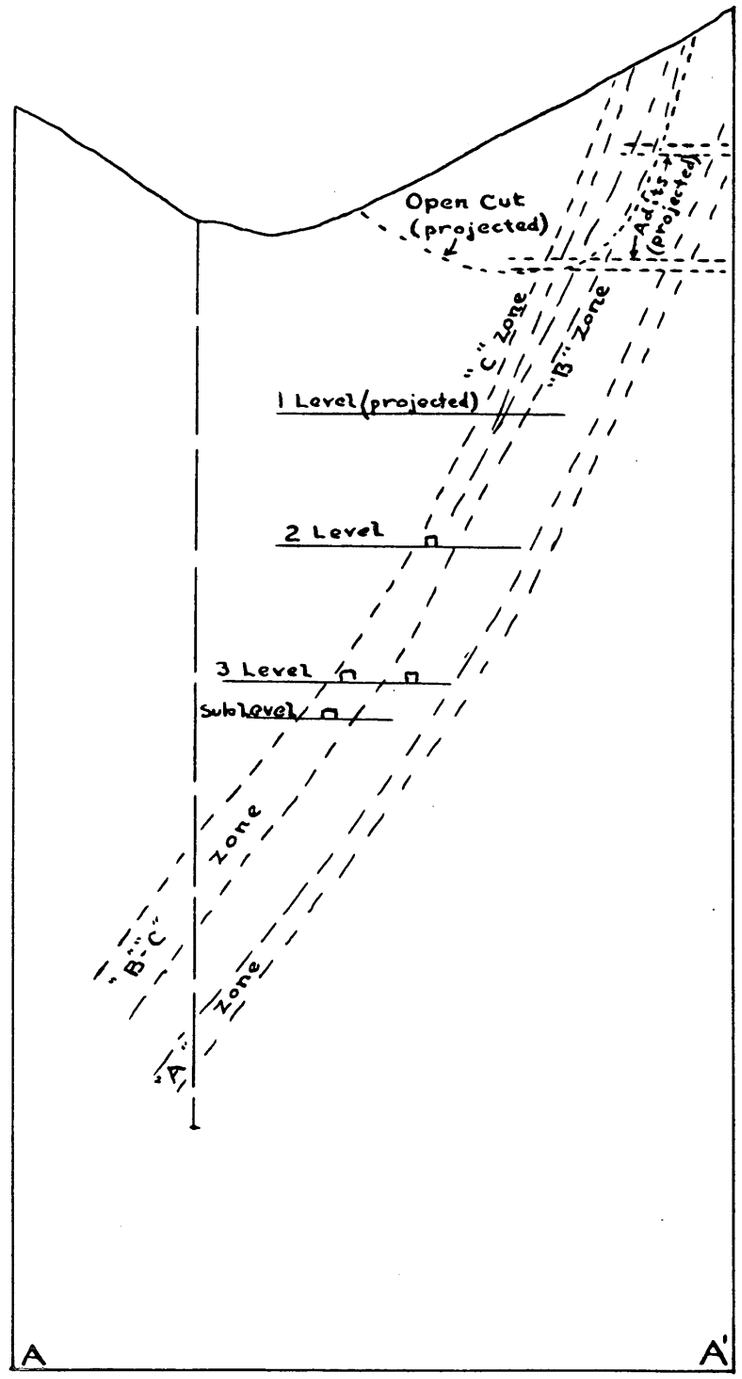
PINE MOUNTAIN MINE, MARICOPA COUNTY, ARIZONA

Plan & Section Showing Locations of Proposed Holes

FIG. 3

RECEIVED
JAN 2 6 1956





DMEA 3937

PINE MOUNTAIN MINE, MARICOPA COUNTY, ARIZONA

Plan & Section Showing Locations of Proposed Holes

FIG 3

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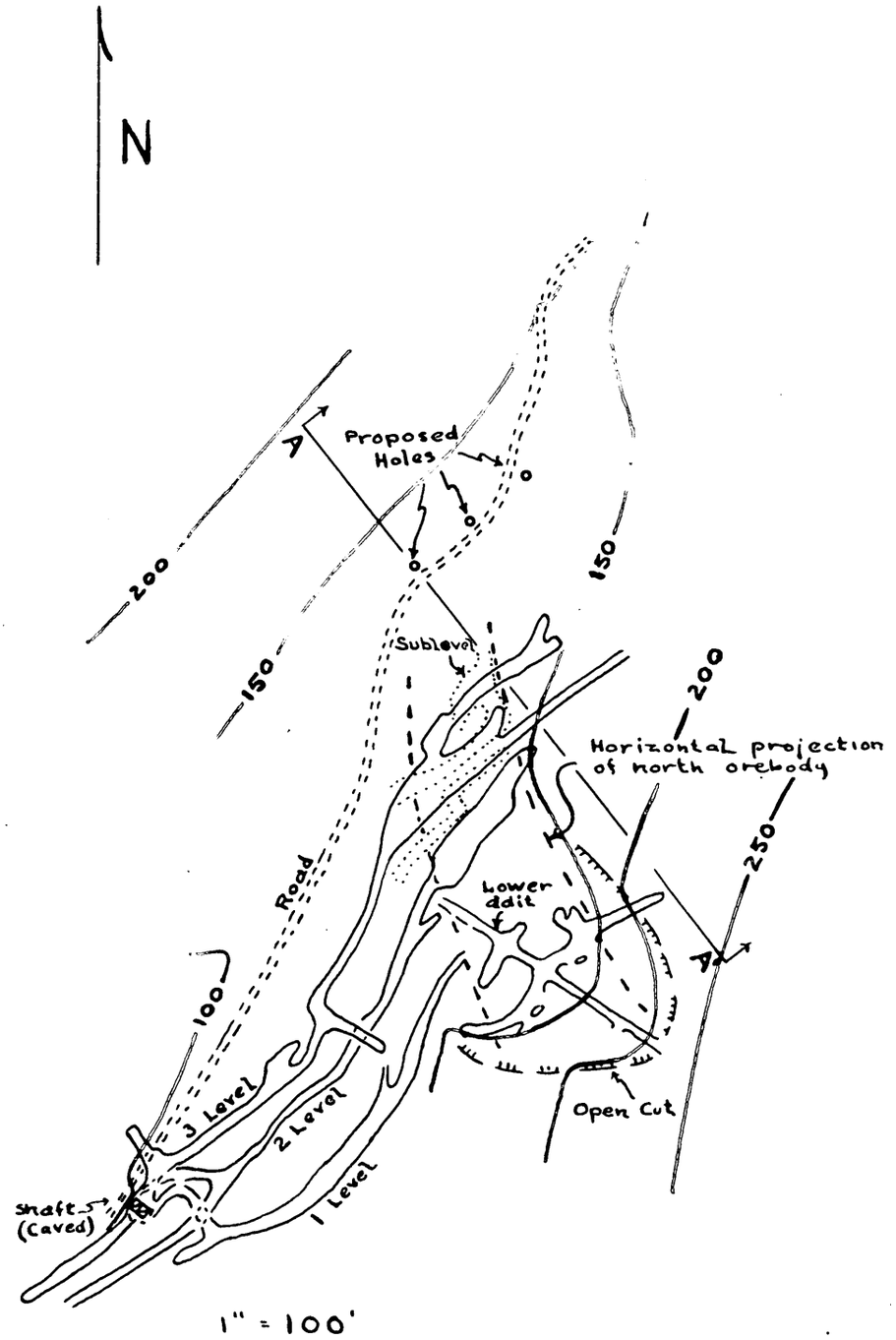

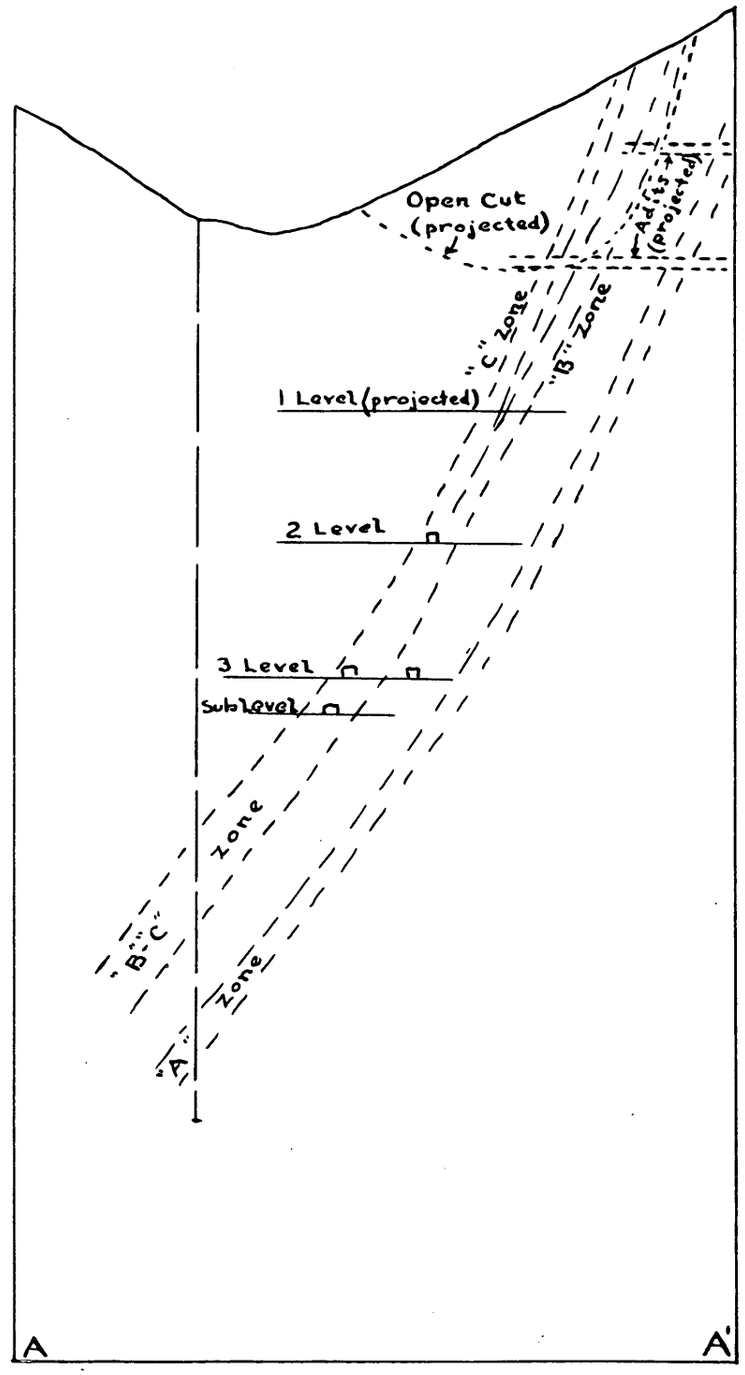

DMEA 3937

PINE MOUNTAIN MINE, MARICOPA COUNTY, ARIZONA

Plan & Section Showing Locations of Proposed Holes

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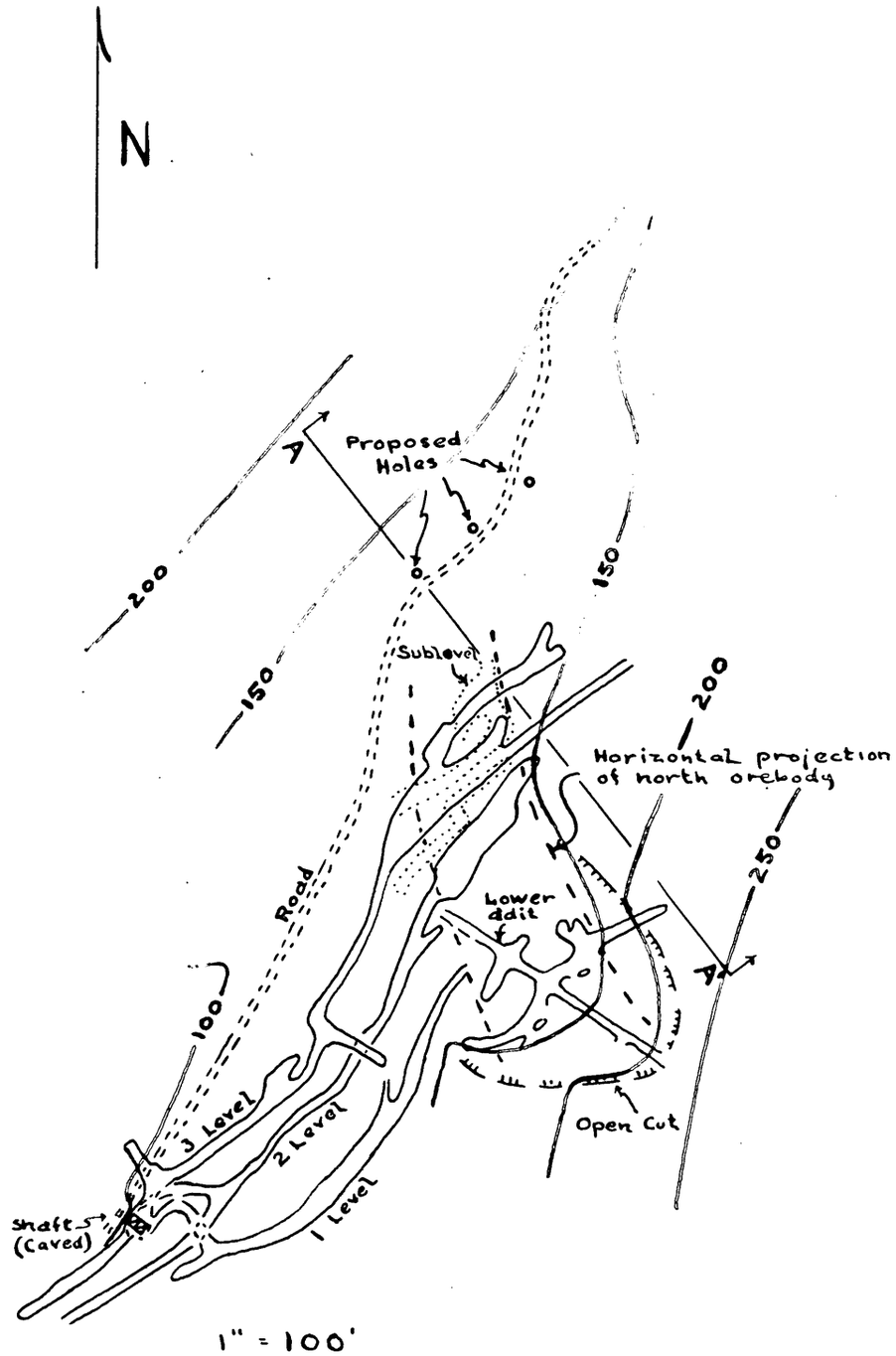

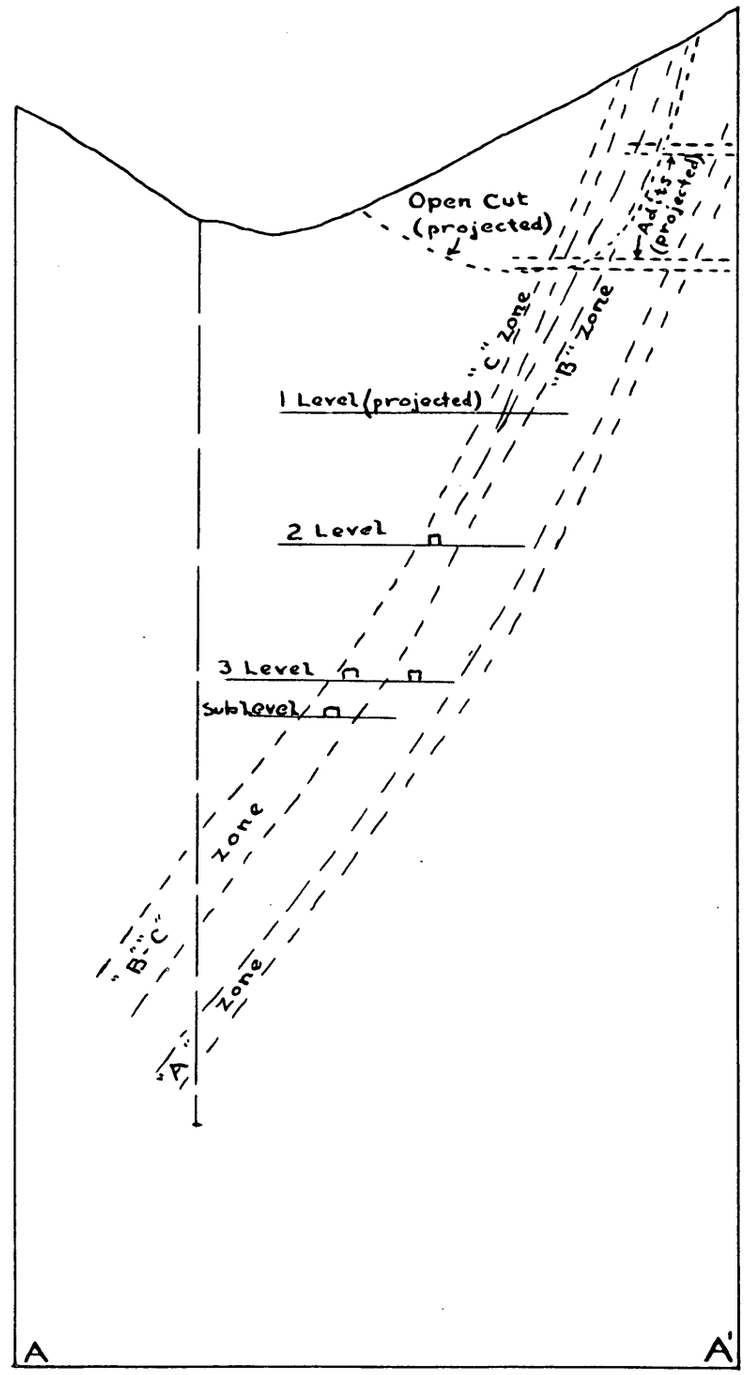

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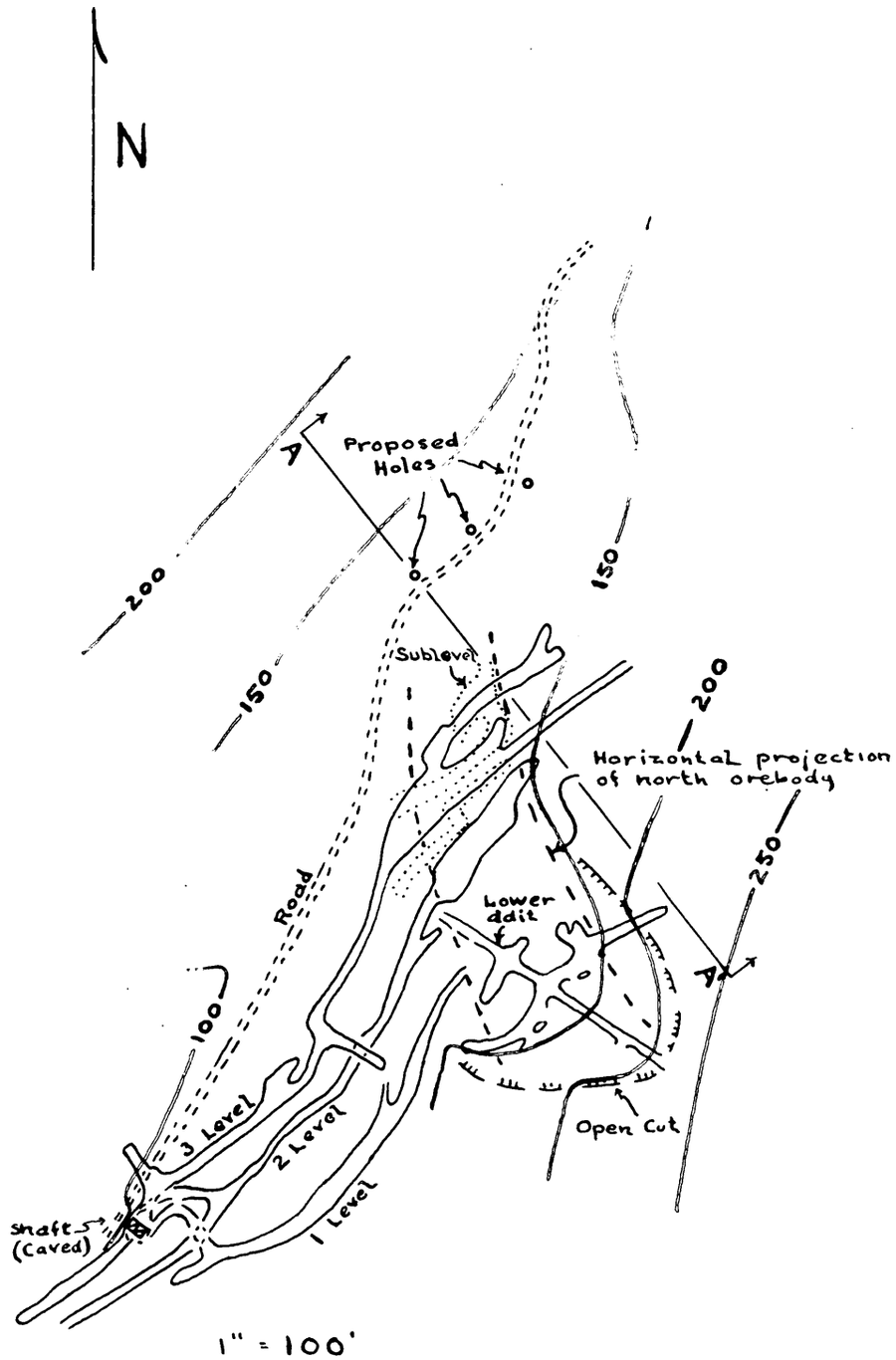

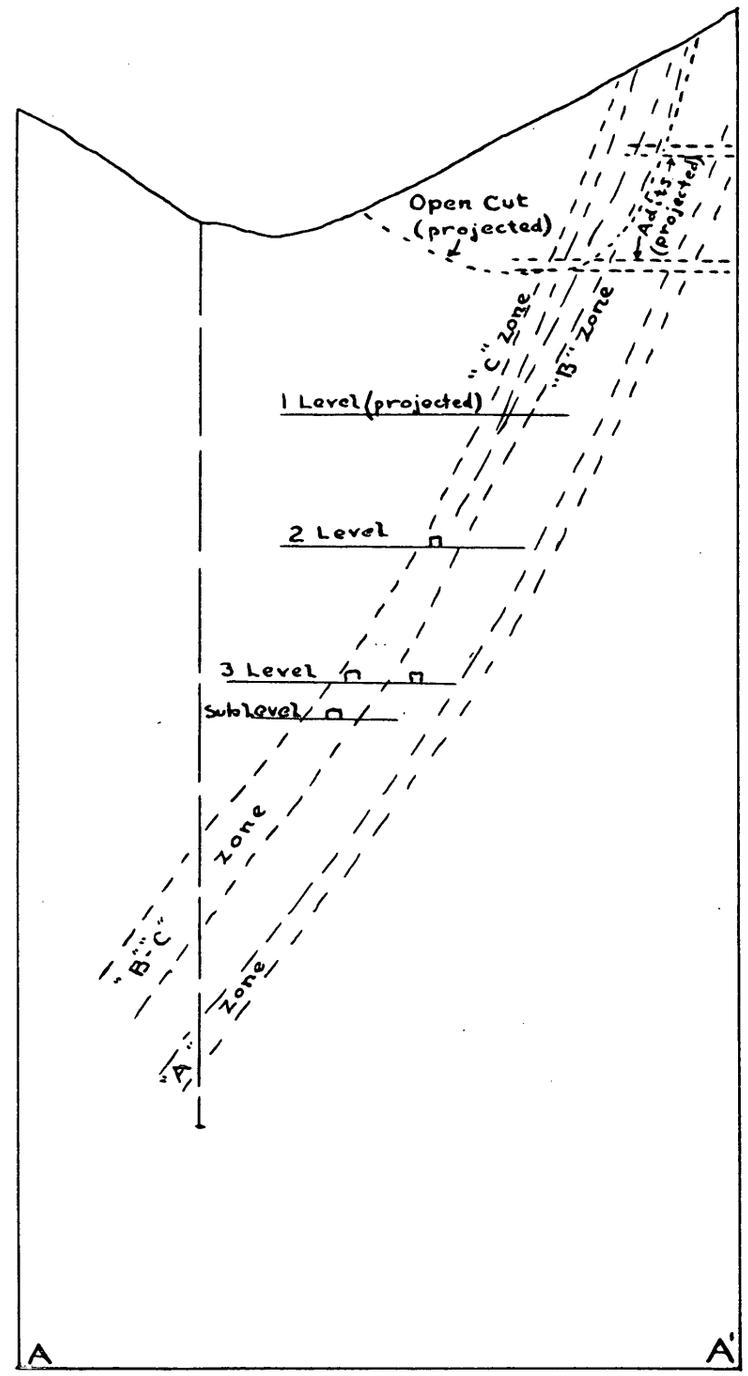

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PINE MOUNTAIN MINE, MARICOPA COUNTY, ARIZONA

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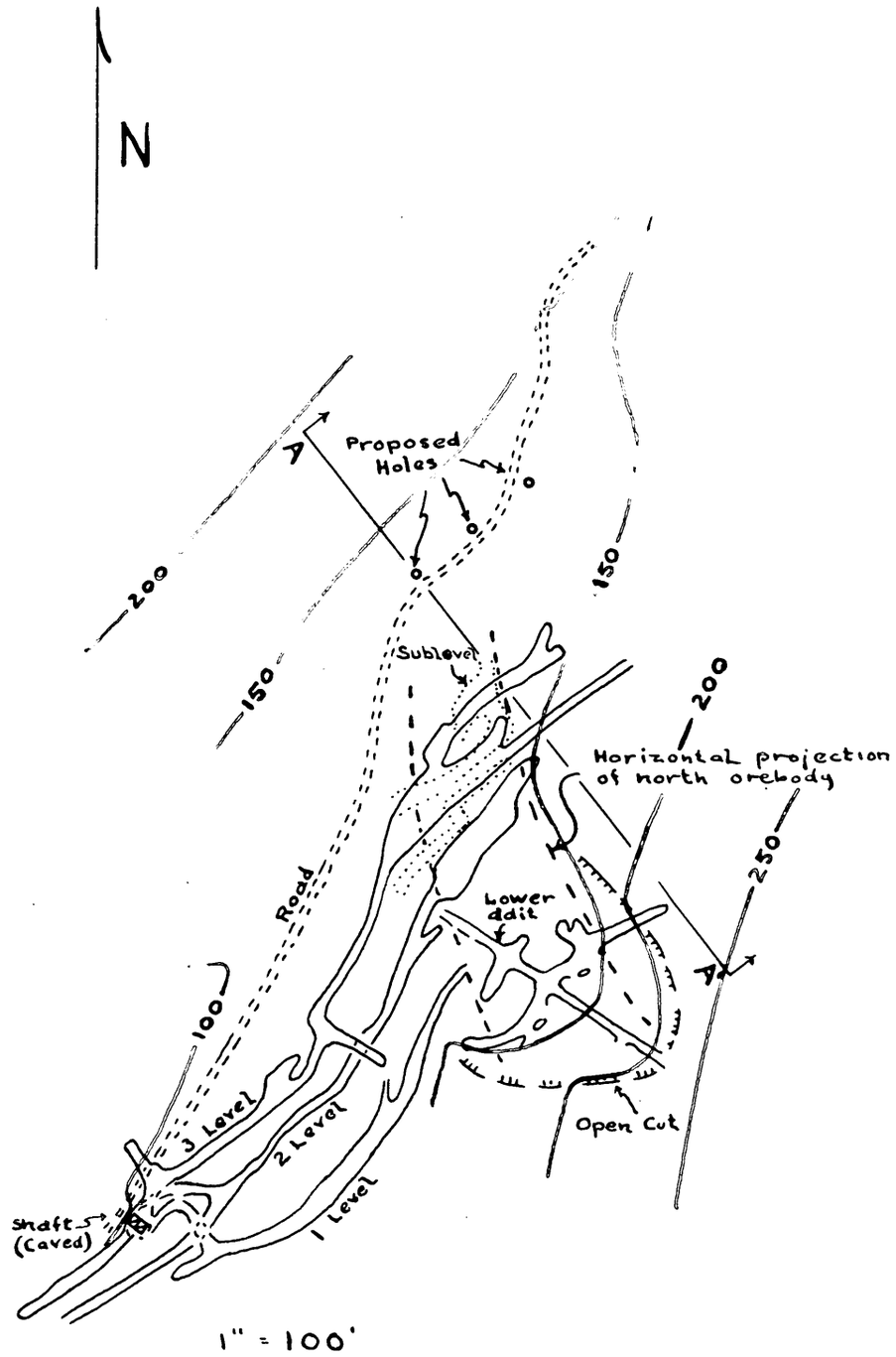

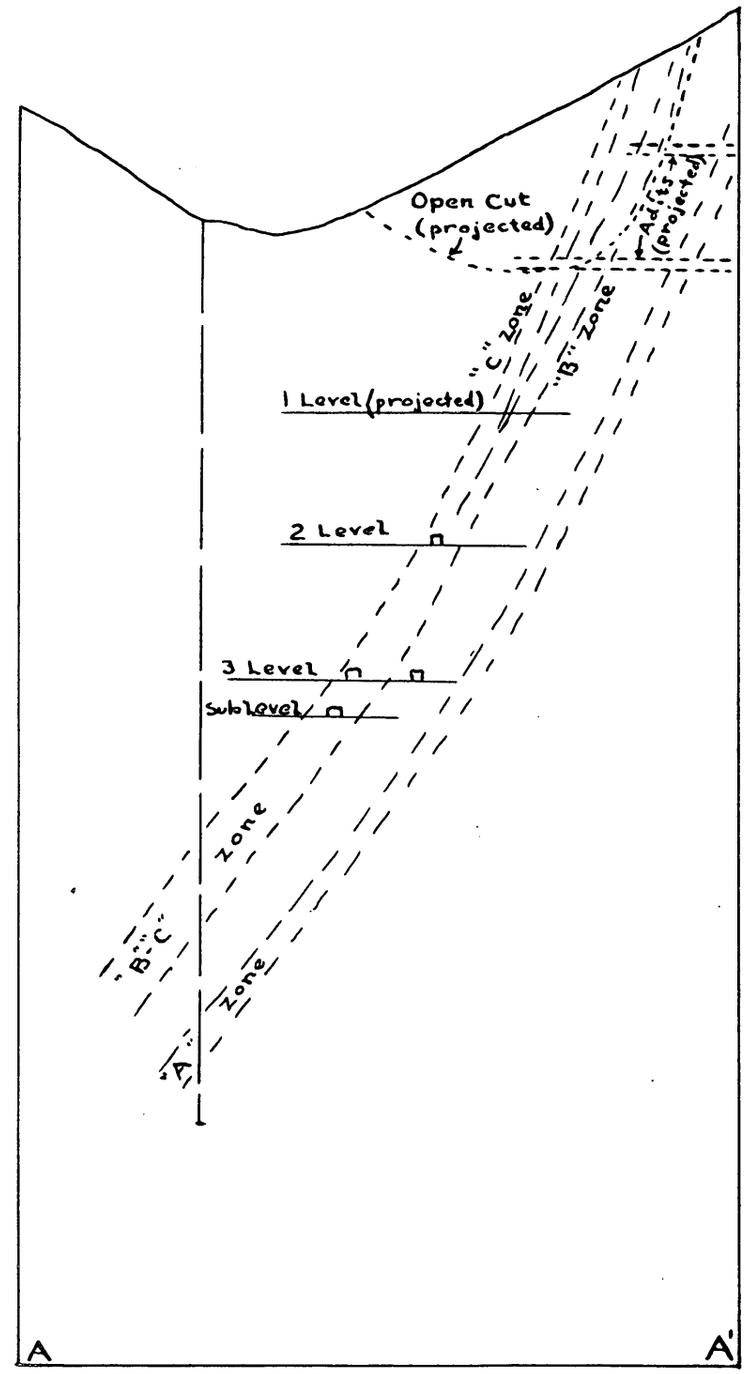

DMEA 3937

PINE MOUNTAIN MINE, MARICOPA COUNTY, ARIZONA

Plan & Section Showing Locations of Proposed Holes

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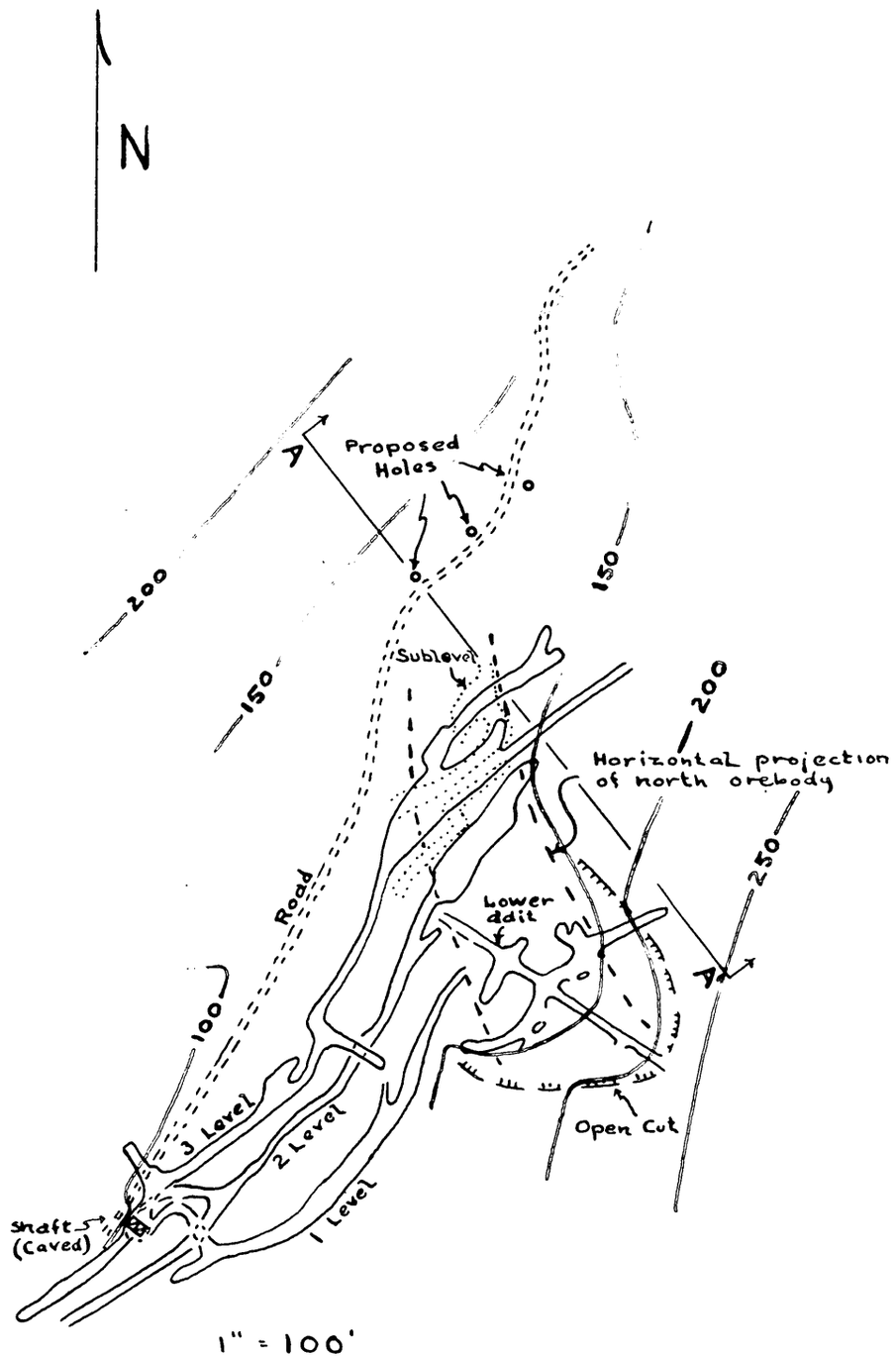

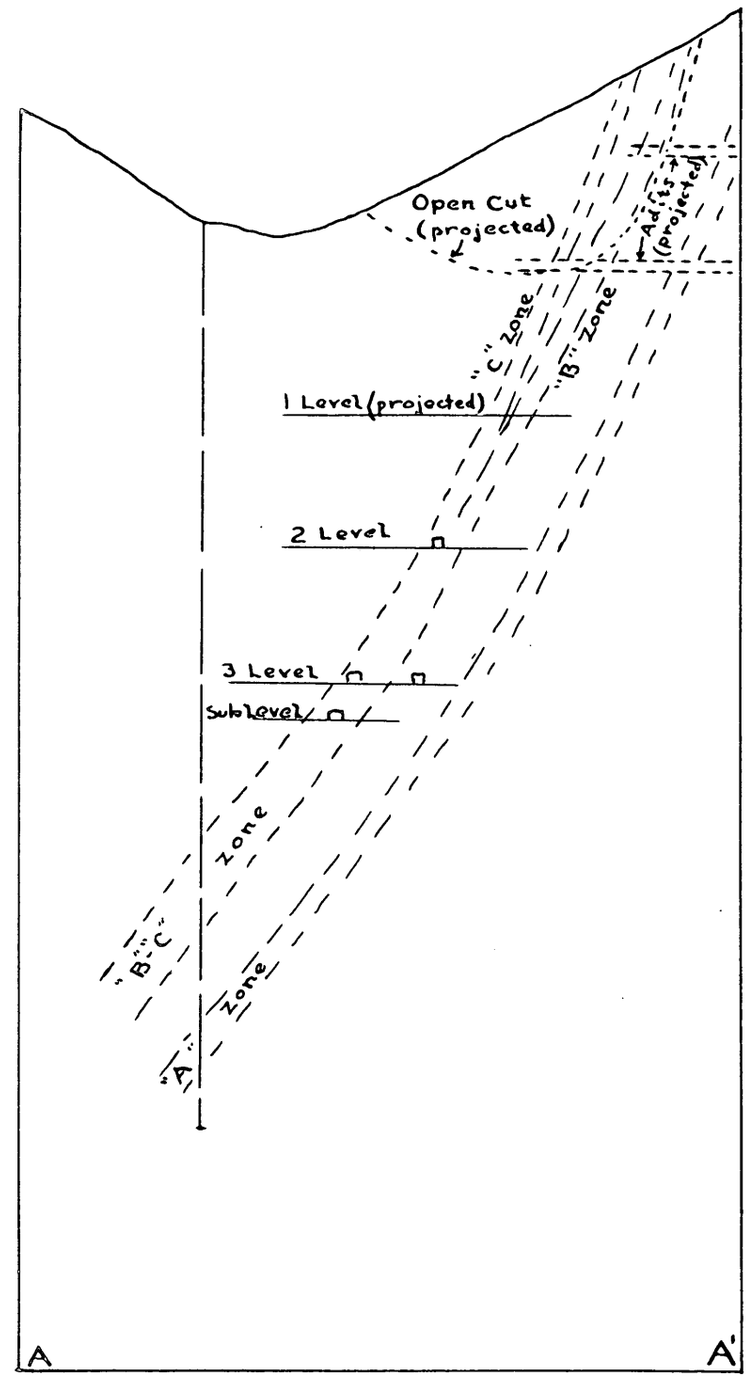

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PINE MOUNTAIN MINE, MARICOPA COUNTY, ARIZONA

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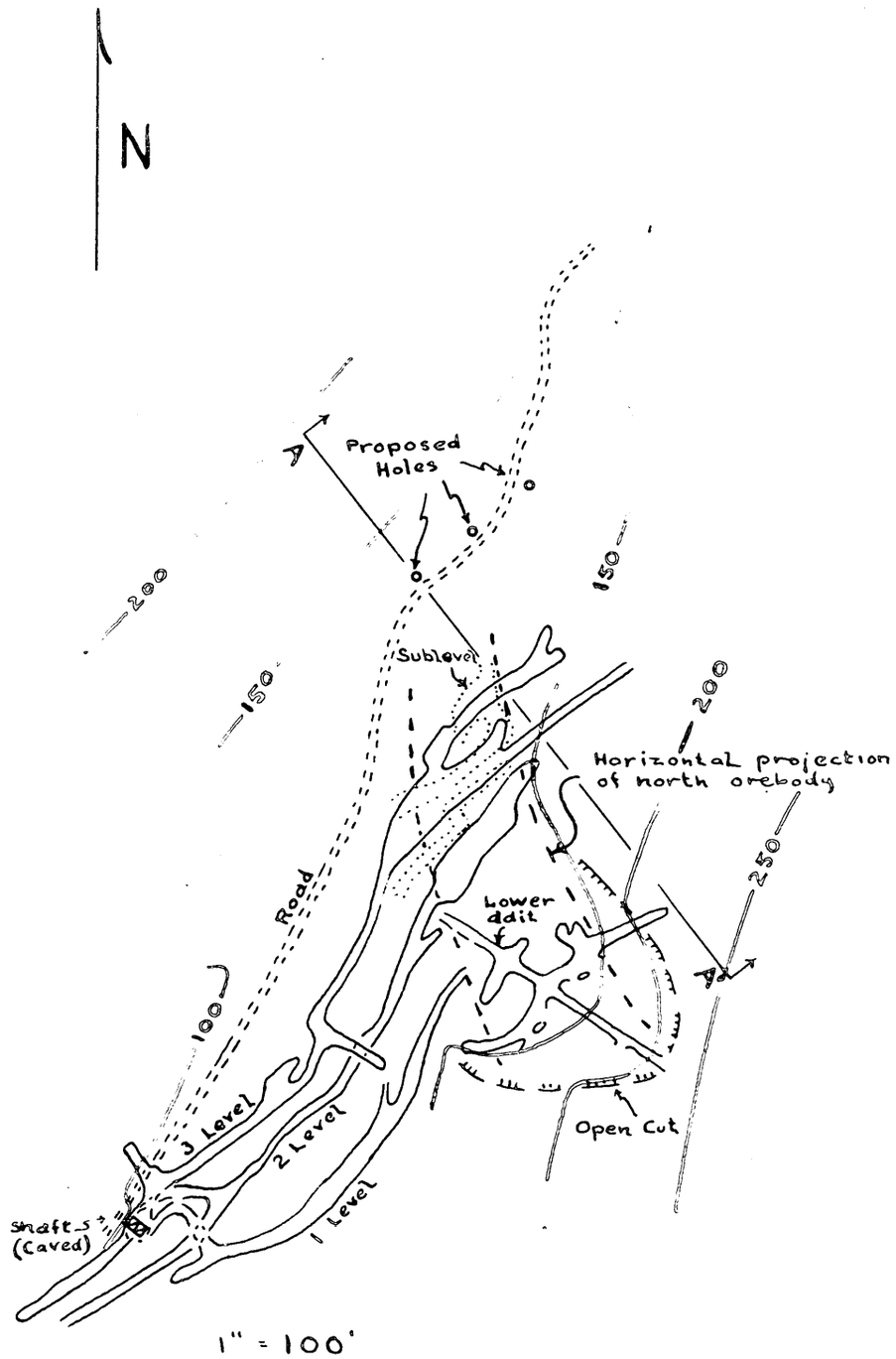

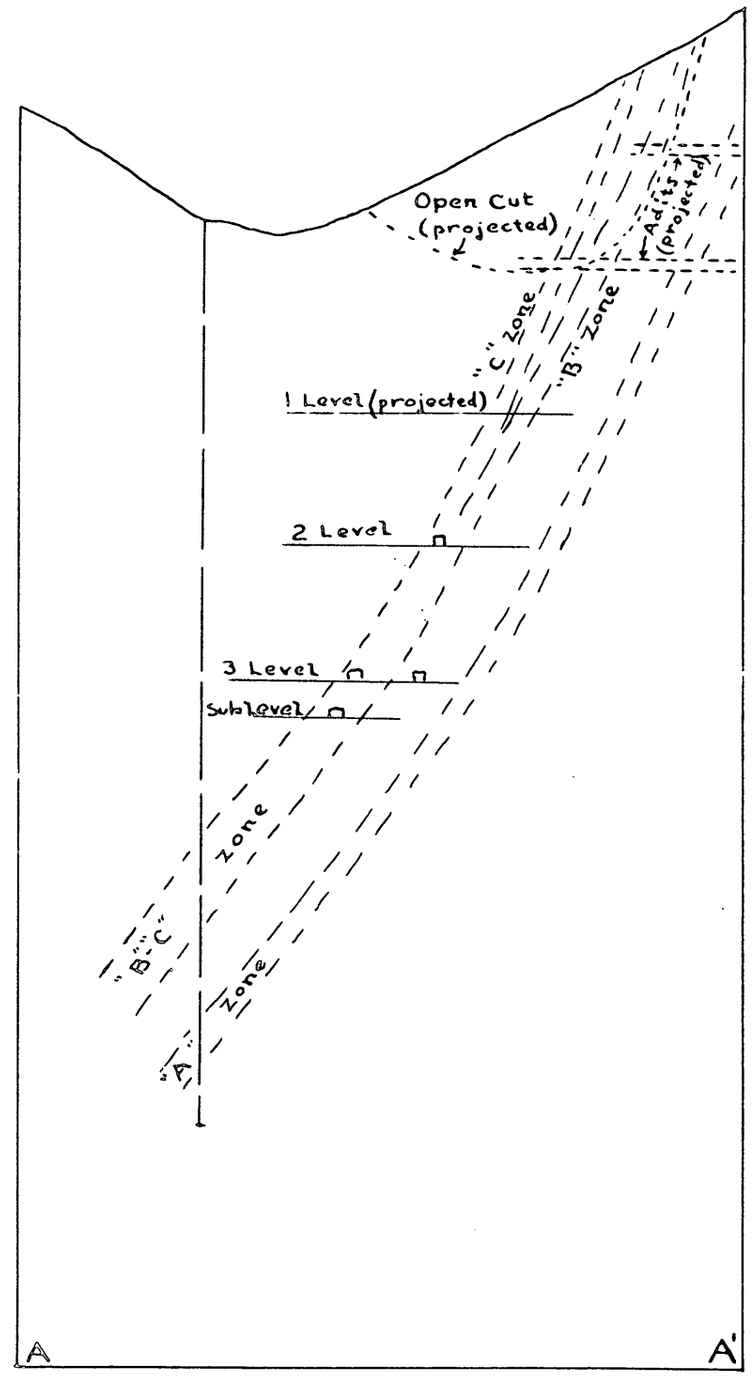

DMEA 3937

PINE MOUNTAIN MINE, MARICOPA COUNTY, ARIZONA

Plan & Section Showing Locations of Proposed Holes

FIG. 3

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JAN 26 1956

400 Docket martin

JUN - 8 1956

Mr. Jesse H. Lochausen, Jr.
Acting President
International Ore Corporation
2427 Arizona Street
El Paso, Texas

Re: Docket No. DMEA-3937, Mercury
Pine Mountain Mercury Mine
Maricopa County, Arizona

Dear Mr. Lochausen:

By letters of March 19 and May 1, 1956, Mr. W. M. Traver, Executive Officer, DMEA Field Team, Region III, requested you to furnish data by not later than June 1 to clarify title and control status of the claims covered by the above-referenced application.

Inasmuch as no reply has been received to either of the Field Team's above-mentioned letters, we presume you are no longer interested in the proposed exploration project. We are, therefore, removing the application from our active files and closing the docket.

Sincerely yours,

C. O. Mittendorf

Administrator

cc: Docket
Code 400
Adm. Read. File
Thor Kiilsgaard, USGS
J. W. Pennington, USBM
Field Team, Region 3

LScott
6/7/56

R.E.S.

UNITED STA.
DEPARTMENT OF THE I. IOR
DEFENSE MINERALS EXPLORATION ADMINI. TION
WASHINGTON 25, D. C.

June 7, 1956

MEMORANDUM

To: Mr. Robert E. Adams, Chief
Operations Control & Statistics Division

From: Chief, Iron and Ferro-Alloys Division

Subject: Docket No. DMEA-3937, Mercury
International Ore Corporation
Pine Mountain Mercury Mine
Maricopa County, Arizona

After considerable correspondence with the applicant requesting information to clarify title to the subject property, the Field Team by letter of May 1, 1956, notified the applicant that the docket would be closed unless the required data were supplied by June 1.

By letter of June 5, the Field Team informed the Chairman, Operating Committee, that the applicant has not provided the needed information.

Accordingly, the application is being removed from the active files and is transmitted to you herewith.

W S Martin
W. S. Martin, Chief
Iron and Ferro-Alloys Division

Attachment

400

Docket
Martin

June 7, 1956

MEMORANDUM

To: Mr. Robert E. Adams, Chief
Operations Control & Statistics Division

From: Chief, Iron and Ferro-Alloys Division

Subject: Docket No. DMEA-3937, Mercury
International Ore Corporation
Pine Mountain Mercury Mine
Maricopa County, Arizona

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Accordingly, the application is being removed from the active files and is transmitted to you herewith.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

Attachment

cc: Docket
Code 400
FT, Region 3
Adm. Read. File

LScott
6/7/56

Docket

RECEIVED
JUN - 7 1956

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

June 5, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Chairman, Operating Committee, DMEA

From: Field Team, Region III

Subject: DMEA Docket 3937 (Mercury), International Ore Corporation (Pine Mountain Mercury Mine), Maricopa County, Arizona

We have had no reply to our letter to the Applicant dated May 1, 1956, and we presume that he is no longer interested in the proposed exploration project. We recommend that you close this docket.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Copy retained 200

Docket

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

May 1, 1956

224 New Customhouse
Denver 2, Colorado

RECEIVED
MAY 3 - 1956

Mr. Jesse H. Lochausen, Jr.
Acting President
International Ore Corporation
2427 Arizona Street
El Paso, Texas

Re: Docket DMEA 3937 (Mercury) Pine Mountain Mercury Mine, Maricopa County, Arizona

Dear Mr. Lochausen, Jr.:

We have had no reply to our letter of March 19, 1956 in which we requested the following:

1. Copies of Assignments from D. W. Simpson to Tom H. Donaldson and Jesse H. Lochausen and from them to International Ore Corporation

2. The Agreement between Cline and International Ore Corporation for the relocation of the Turnbull claims as Mercury claims 11-15, inclusive

3. A complete brief on the Turnbull claims

If we do not receive the above-mentioned data by June 1, 1956, we will presume that you are no longer interested in the proposed exploration project, and we will close the docket.

Very truly yours,

Copy retained 400

W. M. TRAVER,

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:ab

cc: Docket 3937
Chair. Op. Comm. (2)
Harshman
Chron.

Docket

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

RECEIVED
MAR 22 1956

March 19, 1956

224 New Customhouse
Denver 2, Colorado

WSM

Copy retained 400

Mr. Jesse H. Lochausen, Jr.
Acting President
International Ore Corporation
2427 Arizona Street
El Paso, Texas

Re: Docket DMEA 3937 (Mercury), Pine Mountain Mercury Mine, Maricopa County, Arizona

Dear Mr. Lochausen, Jr.:

To clarify the titles and control status of the claims involved in your application for DMEA aid, we shall need the documents referred to in your letter of February 29, 1956 which are:

1. Copies of assignments from D. W. Simpson to Tom H. Donaldson and Jesse H. Lochausen, and from them to International Ore Corporation

2. The agreement between Cline and International Ore Corporation for the relocation of the Turnbull claims as Mercury claims 11-15 inclusive

3. A complete brief on the Tunrbull claims

When we receive the above data, we will continue to process your application.

Very truly yours,

W. M. TRAVER,

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

HMC:ab

cc: Chair. Op. Comm. (2)
Harshman
Docket 3937
Chron.

400

DOCKET
SURNAME
McMahon
Martin
Selfridge
Fleischer
Mittendorf

MAR 15 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3937 - Mercury
International Ore Corporation
Pima Mountain Mercury Mine
Maricopa County, Arizona

Dear Mr. Traver:

Reference is made to your memorandum of March 6, 1956, with enclosed copies of a letter by Jesse H. Lochausen, Jr., Acting President, International Ore Corporation, dated February 29, 1956, regarding the subject application.

To clarify the titles and control status of the claims involved we shall have to see the documents referred to in Mr. Lochausen's letter before we can prepare an Owner's Consent to Lien. We shall appreciate your notifying the Operator accordingly.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (HB)

APPROVED:

/s/ Robert W. Geehan (HB)
Member, Bureau of Mines

Thor H. Kiilsgaard (HB)
Member, Geological Survey

AIMcMahon/foc 3/13/56
cc to: Docket
Code 400
Admr. Read. File
Operating Comm.
FT. REG. III
H. M. Meyer, USBM
T. H. Kiilsgaard, USGS

N.C.S.

Docket

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

RECEIVED
MAR - 9 1956

March 6, 1956

224 New Customhouse
Denver 2, Colorado

Copy retained 400

WSM

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3937 (Mercury), International Ore Corporation, Pine Mountain Mercury Mine, Maricopa County, Arizona

This responds to your letter of February 20, 1956 on the subject docket.

Enclosed are two copies of a reply to our letter to the applicant dated February 24, 1956. It is not clear to us if an Owner's Consent to Lien could be prepared at this time for the signature of George C. Cline. It is so legally involved that we request you to prepare the Owner's Consent to Lien in your office at the proper time in accordance with the agreement in the last paragraph on page one of your letter of May 23, 1955. We will forward you all further information which the applicant submits.

W. M. Traver

W. M. Traver

Enclosures

February 29, 1956

2427 Arizona Street
El Paso, Texas

DMEA
Date Rec'd.
MAR 5 1956
BUREAU OF MINES

Mr. W. M. Traver
United States Department of Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Re: Docket DMEA 3937 (Mercury)
Pine Mountain Mercury Mine,
Maricopa County, Arizona

Dear Mr. Traver:

In answer to your letter of February 24, 1956, I suggest that you prepare Consent to Lien for George C. Cline's signature and forward same to us as soon as possible. Meanwhile, I will get copies of assigments from D.W. Simpson to Tom H. Donaldson and Jesse H. Lochausen, and from them to International Ore Corporation, also the agreement between Cline and International Ore Corporation for the relocation of the Turnbull claims as Mercury Claims 11 - 15 inclusively.

I will forward the above to you as soon as possible along with a complete brief on the Turnbull Claims.

At this time I wish to advise you that D. W. Simpson is no longer affiliated with the International Ore Corporation. Please address your correspondence to me at 2427 Arizona Street, El Paso, Texas.

Yours very truly,

Jesse H Lochausen Jr

Jesse H. Lochausen, Jr.
Acting President
International Ore Corporation

C O P Y

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

May 23, 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Dear Mr. Traver:

This is to answer some of the questions which arose during our recent conversations in Denver.

In the case of sacking charges--George Jump, DMEA 2343 -- their allowance of disallowance depends upon who retains title to the concentrate. If Mr. Hennings, the lessee, sells the ore to the mill and thereafter retains no title to the concentrate, the sacking charges are not liable to royalty payment but are considered as part of the mill's charges. If Mr. Hemmings is sending the ore to the mill to be beneficiated on a toll basis, retains title to the concentrate, and subsequently sells it to a third party, then the sacking charges are not allowable deductions from sums subject to royalty payment. The same is true for the milling charge.

The Iron and Ferro-Alloys Division is now writing you a letter concerning royalties on the Cold Spring project, DMEA-1447.

Washington does not believe that it is necessary to participate in lime assays on uranium ores. However, if you believe that they should be made in certain cases, Washington would have no objection.

Legal has stated that it is not necessary for an applicant to submit signed copies of leases. Copies of leases showing typed signatures are suitable for contract purposes with possibly rare exceptions in the case of very large contracts.

In the future we shall send you either a rough draft of an Owner's Consent to Lien showing the type of data that should be included in the lien, or we shall supply you with the necessary number of completed copies which you can submit to the applicant for signature.

We re-confirm our explanation to you that DMEA will not participate in rehabilitation solely for examination and with no definite target in mind.

With regard to uranium applications, we believe that it would be well that all applicants submit copies of at least three drilling bids regardless of whether the drilling is to be done by independent contractors or by the applicants. Formerly it was common practice to require bids for all drilling that was to be done by independent contractors.

We have checked our files for settlement sheets relating to certified projects in the States formerly included under old Region V. We also find that our files are not complete. Apparently there have been only three projects which have made royalty payments. We shall attempt to secure settlement sheets for the payments that have been made and at the same time secure copies for your files.

Shortly we shall send you a letter for your comment outlining a suggested handling of the uranium applications as discussed in Denver and here in Washington.

We wish to thank you and Mr. Harshman and all the members of your staff for the many courtesies shown us on our recent trip to the Plateau.

Sincerely yours,

/s/ George C. Selfridge

Chairman, Operating Committee

APPROVED:

/s/ J. H. Hedges
Member, Bureau of Mines

/s/ Thor H. Kiilsgaard
Member, Geological Survey

GCSelfridge/esf 5/19/55
cc to: Mails & Files
Admr. R. File
Oper. Comm.
Messrs. J. H. Hedges, Rm. 3612
T. H. Kiilsgaard, Rm. 5224
J. L. Hofflund, Rm. 7351

P. S. Enclosed are two copies of a memorandum by the Acting Assistant Solicitor, dated May 20, 1955, relating to sacking charges.

Mittendorf
Chambers
Johnson
Selfridge

Docket

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

RECEIVED
FEB 25 1956

February 24, 1956

224 New Customhouse
Denver 2, Colorado

WSM

Copy retained 400

Mr. David W. Simpson, President
International Ore Corporation
Box 1090
Wickenburg, Arizona

Re: Docket EMEA 3937 (Mercury), Pine Mountain Mercury Mine, Maricopa County, Arizona

Dear Mr. Simpson:

Additional information is required before we may continue to process your application.

Your application states that the property to be explored consists of 21 claims. As to sixteen claims, designated Mercury Nos. 1-10 inclusive, and 16-21, inclusive, located by the applicant, the application appears to be clear. This letter, therefore, pertains only to the remaining five claims.

The application states as follows:

"The five (5) other mining lode claims were acquired by purchase contract between D. W. Simpson, purchaser and George Cline, seller. A copy of said contract is attached and captioned exhibit "a". Said contract calls for the delivering of eight (8) mining lode claims, however, upon proper survey said contract delivered only five (5) claims known as Turnbull #1 through Turnbull #5. There is no dispute between seller and purchaser and said claims are known by virtue of an agreed upon relocation Mercury #11 through #15. D. W. Simpson as purchaser was acting as an individual, however, he represented himself and Tom H. Donaldson and Jesse H. Lochausen, Jr. in a joint venture. The contract executed between Mr. Simpson and George Cline has been assigned in its proper proportions to Tom H. Donaldson and Jesse H. Lochausen and transferred into International Ore Corporation in exchange for the proper portion of common stock of said company."

The Mining Contract referred to in the above quotation mentions

nine claims designated as Turnbull, and Turnbull Nos. 1-8, inclusive. The map shows only five such claims designated as Mercury Nos. 11-15 inclusive. The file contains no copies of the assignments mentioned, or of any other documents by George Cline.

1. It is unclear whether the book and page references to the claims designated in the Mining Contract as Turnbull Nos. 1-5 as shown in the Mining Contract between Cline and Simpson are the proper references to the 5 claims intended to be covered by the proposed Exploration Project Contract, or whether, as a result of the survey mentioned in the above quotation, the claims to be included in the proposed exploration contract cover parts of the land covered by the Turnbull and Turnbull Nos. 6-8 claims, inclusive, mentioned in the Mining Contract.

2. It is unclear whether the relocation mentioned was by Cline, or by Simpson, or by the applicant corporation. If by Cline, then Cline should supplement the Mining Contract so as to make clear that the relocated claims are covered thereby. If the relocation was by the applicant, it would seem that since the applicant held its interest in the lands pursuant to the Mining Contract with Cline, it could not relocate the lands so far as cutting off Cline's rights in the lands are concerned, unless Cline either expressly abondons them or makes a special agreement to that effect. In either case, a copy of the document executed by Cline should be furnished to the Government. Furthermore, if Cline still has an interest in the land, his Consent to Lien will be required and upon advice from you, the necessary forms for his Consent to Lien will be prepared in this office and forwarded you for Cline's signature. Copies of the assignments from Simpson to Donaldson and Lochausen, and from them to the applicant, should also be furnished to the Government.

When we receive the above additional information, we will continue to process your application.

Very truly yours,

W. M. TRAVER,

W. M. Traver
Executive Officer, IMRA
Field Team, Region III

HMC:ab

cc: Chair. Op. Comm. (2)
Harshman
Storms
Docket 3937
Chron.

Docket

Martin
Selfridge
JE Johnson
McTheudy

400

FEB 20 1956

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 3937 - Mercury
International Ore Corporation
Pine Mountain Mercury Mine
Maricopa County, Arizona

Dear Mr. Traver:

Enclosed are two copies of a memorandum dated February 15, 1956, regarding the subject application. The memorandum is self-explanatory.

Please note particularly the portion thereof starting with the third sentence of paragraph 2 on the second page.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GHS)

Enclosure

WSMartin/foc
2-16-56
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG. III
H. M. Meyer, USBM
T. H. Kiilsgaard, USGS

APPROVED:

/s/ Robert W. Geehan (GHS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GHS)
Member, Geological Survey

RCG

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

FEB 15 1956

Memorandum

To: Administrator, DMEA
Attention: Chief, Iron and Ferro-Alloys Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Lands to be included in proposed
Exploration Project Contract
Docket No. DMEA-3937 (Mercury)
International Ore Corporation
Pine Mountain Mercury Mine
Maricopa County, Arizona

Additional information is required before Annex I to the proposed Contract can be prepared.

The application states that the property to be explored consists of 21 claims. As to sixteen claims, designated Mercury Nos. 1-10 inclusive, and 16-21, inclusive, located by the applicant, the application appears to be clear. This memorandum therefore pertains only to the remaining five claims.

The application states as follows:

"The five (5) other mining lode claims were acquired by purchase contract between D. W. Simpson, purchaser and George Cline, seller. A copy of said contract is attached and captioned exhibit "a". Said contract calls for the delivering of eight (8) mining lode claims, however, upon proper survey said contract delivered only five (5) claims known as Turnbull #1 through Turnbull #5. There is no dispute between seller and purchaser and said claims are known by virtue of an agreed upon relocation Mercury #11 through #15. D. W. Simpson as purchaser was acting as an individual, however, he represented himself and Tom H. Donaldson and Jesse H. Lochausen, Jr. in a joint venture. The contract executed between Mr. Simpson and George Cline has been assigned in its proper proportions to Tom H. Donaldson and Jesse H. Lochausen and transferred into International Ore Corporation in exchange for the proper portion of common stock of said company."

The Mining Contract referred to in the above quotation mentions nine claims designated as Turnbull, and Turnbull Nos. 1-8, inclusive. The map shows only five such claims designated as Mercury Nos. 11-15 inclusive. The file contains no copies of the

assignments mentioned, or of any other documents by George Cline.

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We shall defer processing the Contract until these points are clarified.

Robert P. Dwyer

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

FEB 15 1956

Memorandum

To: Administrator, DMEA
Attention: Chief, Iron and Ferro-Alloys Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Lands to be included in proposed
Exploration Project Contract
Docket No. DMEA-3937 (Mercury)
International Ore Corporation
Pine Mountain Mercury Mine
Maricopa County, Arizona

Additional information is required before Annex I to the proposed Contract can be prepared.

The application states that the property to be explored consists of 21 claims. As to sixteen claims, designated Mercury Nos. 1-10 inclusive, and 16-21, inclusive, located by the applicant, the application appears to be clear. This memorandum therefore pertains only to the remaining five claims.

The application states as follows:

"The five (5) other mining lode claims were acquired by purchase contract between D. W. Simpson, purchaser and George Cline, seller. A copy of said contract is attached and captioned exhibit "a". Said contract calls for the delivering of eight (8) mining lode claims, however, upon proper survey said contract delivered only five (5) claims known as Turnbull #1 through Turnbull #5. There is no dispute between seller and purchaser and said claims are known by virtue of an agreed upon relocation Mercury #11 through #15. D. W. Simpson as purchaser was acting as an individual, however, he represented himself and Tom H. Donaldson and Jesse H. Lochausen, Jr. in a joint venture. The contract executed between Mr. Simpson and George Cline has been assigned in its proper proportions to Tom H. Donaldson and Jesse H. Lochausen and transferred into International Ore Corporation in exchange for the proper portion of common stock of said company."

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assignments mentioned, or of any other documents by George Cline.

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We shall defer processing the Contract until these points are clarified.

Robert P. Dwyer

Robert P. Dwyer

P. Indritz/wog
February 14, 1956
Copy to: DMEA Docket
Solicitor's Docket
W.S.Martin (2)
G.C.Selfridge
R.P.Dwyer
Chron.
P.Indritz

Docket
Chapman
Martin

February 3, 1956

MEMORANDUM

To: Associate Solicitor
Division of Mineral Resources

From: Iron and Ferro-Alloys Division, DMEA

Subject: Preparation of contract
Docket No. DMEA 3937 - Mercury
Internation Ore Corporation
Pine Mountain Mercury Mine
Maricopa County, Arizona

Transmitted herewith is a draft of a proposed contract for the captioned project for your use in preparing the contract in final form.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

Attachment

cc: Docket
Code 400

TLChapman/ls

Docket

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

RECEIVED
JAN 26 1956

January 23, 1956

224 New Customhouse
Denver 2, Colorado

Copy retained 400

WBay

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3937 (Mercury), International Ore Corporation, Pine Mountain Mine, Maricopa County, Arizona

This responds to your letter of December 27, 1955 requesting additional information needed for the preparation of the contract.

Enclosed are the following:

1. Nine copies of a plan and section showing the locations of the three surface holes

2. Two copies of a memorandum from John N. Faick dated January 20, 1956

3. Two copies of a memorandum from Walter R. Storms dated January 18, 1956.

W. M. Traver

W. M. Traver

Enclosures

Hmp

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Box 4126 University Station
Tucson, Arizona

IN REPLY REFER TO:
DMEA
Date Rec'd.
JAN 23 1956
BUREAU OF MINES
Denver, Colorado

January 20, 1956
AIRMAIL

MEMORANDUM

To: Mr. W. M. Traver, Executive Officer, DMEA FIELD TEAM REGION III

From: John N. Faick

Subject: DMEA 3937 (Mercury), International Ore Corporation, Pine Mountain Mine, Maricopa County, Arizona

I compiled the plan and section referred to in your teletype of January 20, 1956, showing the locations of the proposed holes at the Pine Mountain mine, and naturally concur with the locations thereof. These locations represent a compromise of several possible drill sites but we believe the results of these holes will satisfactorily serve the purpose for which they are intended. Section ~~8A'~~ A-A' diagramatically illustrates the three surface holes proposed for exploring the deposit beneath the old workings, but the shallow holes to test the "A" zone were purposely left off, pending the selection of final drill sites.

John N. Faick

John N. Faick

JNF:ms

cc: Harshman
Storms

DMEA
Date Rec'd
JAN 20 1956
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Box 4097
Tucson 5, Arizona

January 18, 1956

Memorandum

To : W. M. Traver, Executive Officer, DMEA Field Team

RECEIVED
JAN 26 1956

From : Superintendent, Southwest Experiment Station

Subject : Docket DMEA-3937, International Ore Co.'s Pine Mountain Mercury Mine, Maricopa County, Ariz.

As requested in your memorandum of December 30, we finally have obtained a map of the Pine Mountain area and are enclosing 10 prints of same. T. M. Romslo had to contact Pine Mountain officials in Phoenix regarding a fairly accurate surface map, as we had none. When a map was received, it had to be reduced in size, hence the delay.

The locations of the 3 surface holes are shown on the map; however, the locations of the other 4 holes cannot be shown. If certain underground workings are cleaned out, these holes will be drilled from underground sites; otherwise they will be drilled from surface stations.

Walter R. Storms

Walter R. Storms

CC W. M. Traver
J. N. Faick
DMEA-3937
BR

WRStorms:frj

DOCKET
Surname:
Chapman
Martin
Selfridge
Robinson
Vanderdoz

DEC 27 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA-3937, Mercury International Ore Corporation
Pine Mountain Mine
Maricopa County, Arizona

Dear Mr. Traver:

Reference is made to the Summary, Conclusions, and Recommendations in a report dated November 1955 by T. M. Romslo, Mining Engineer, covering the above-noted property.

Mr. Romslo recommends diamond drilling and proposes that three of the proposed holes cut the "A", "B", and "C" veins at a point approximately 130 feet below the third level. Enclosed in duplicate are photostats prepared from the inadequate data available to us, and intended to show in cross-section the position and attitude of these holes. Without surface contours, we find difficulty in spotting the proposed drilling.

We would appreciate your comments on the subject, preferably accompanied by a cross-section, so that we may expedite the preparation of a contract.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

/s/ Robert W. Gesheen (GCS)

Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)

Member, Geological Survey

cc: Docket
Code 400
Oper. Comm.
Adm. Read. File
T. Kiilsgaard, USGS
Helena Meyer, USBM
FT, Region 3

TLChapman/ls 12/21/55

5-776 ✓

399 x 76 = 30324# ÷ 12210 tn = 2.48#

Palm Mountain Mercury Mine
Maricopa Co. Ariz.

1940	7,000 TONS.	313 FLASKS.	0.17% = 3.4#
1941	12,210 TONS	399 FLASKS.	0.12% = 2.4#
1942	10,917 TONS	416 FLASKS.	0.1448% = 2.896#
1943	2,427 TONS	96 FLASKS	0.119% 2.38#
1943	1,863 TONS	137 "	0.28% 5.6#
1944	5,200 TONS. (EST.)	344 "	0.252% 5.04#
	39,617 TON	1685 " (128060#)	0.1615% 3.23#

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

December 6, 1955

W309

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: J. W. Pennington, Branch of Base Metals

Subject: Review of Examination Report, Docket No. DMEA - 3937 (mercury), International Ore Corporation, Pine Mountain Mine, Maricopa County, Arizona, $44,948.00

The program proposed by the applicant to explore this property involved sinking a 150 foot shaft and 400 feet of drifting at an estimated cost of $44,948.00.

However, one member of the Examination Team, T. R. Romslo, believes that the applicant's program was not designed to explore the most favorable zone, Veins B and C, and the primary objective appears to be more of a development than exploration of Vein A.

Romslo offers a proposed diamond drilling program consisting of 7 holes totaling 1,900 feet at an estimated cost of $13,750.00. Incidentally, according to the data in Romslo's estimated costs, the Material and Supplies item should be $250.00 instead of $150.00.

I agree with the conclusions of Romslo and Faick, the other members of the Examination Team, that exploration of the property is warranted. Yet, I believe that the modified program of Romslo is more acceptable than the program proposed by Faick.

I recommend that Romslo's drilling program be considered as the method to explore the property.

J. W. Pennington

J. W. Pennington

RECEIVED
DEC - 6 1955

Copy to: Division of Minerals
Branch of Base Metals
J. W. Pennington
R. W. Geehan
Thor Kiilsgaard, U.S.G.S.
Files

Copy retained

December 6, 1955

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: J. W. Pennington, Branch of Base Metals

Subject: Review of Examination Report, Docket No. DMEA - 3937 (mercury), International Ore Corporation, Pine Mountain Mine, Maricopa County, Arizona, $44,948.00

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Romslo offers a proposed diamond drilling program consisting of 7 holes totaling 1,900 feet at an estimated cost of $13,750.00. Incidentally, according to the data in Romslo's estimated costs, the Material and Supplies item should be $250.00 instead of $150.00.

I agree with the conclusions of Romslo and Faick, the other members of the Examination Team, that exploration of the property is warranted. Yet, I believe that the modified program of Romslo is more acceptable than the program proposed by Faick.

I recommend that Romslo's drilling program be considered as the method to explore the property.

J. W. Pennington

J. W. Pennington

JWPennington/vr

RECEIVED
DEC - 6 1955

Copy to: Division of Minerals
Branch of Base Metals
J. W. Pennington
R. W. Seehan
Thor Kiilsgaard, U.S.G.S.
F i l e s

December 6, 1955

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: J. W. Pennington, Branch of Base Metals

Subject: Review of Examination Report, Docket No. [illegible] - 3937 (mercury), International Ore Corporation, Pine Mountain Mine, Maricopa County, Arizona, $44,968.00

The program proposed by the applicant to explore this property involved sinking a 150 foot shaft and 400 feet of drifting at an estimated cost of $44,968.00.

However, one member of the Examination Team, T. R. Romslo, believes that the applicant's program was not designed to explore the most favorable zone, Veins B and C, and the primary objective appears to be more of a development than exploration of Vein A.

Romslo offers a proposed diamond drilling program consisting of 7 holes totaling 1,900 feet at an estimated cost of $13,798.00. Incidentally, according to the data in Romslo's estimated costs, the Material and Supplies item should be $830.00 instead of $130.00.

I agree with the conclusions of Romslo and Paick, the other members of the Examination Team, that exploration of the property is warranted. Yet, I believe that the modified program of Romslo is more acceptable than the program proposed by Paick.

I recommend that Romslo's drilling program be considered as the method to explore the property.

J. W. Pennington

J. W. Pennington

JWPennington/vr

Copy to: Division of Minerals
Branch of Base Metals
J. W. Pennington
R. W. Gaskes
Thor Kiilsgaard, U.S.G.S.
Files

RECEIVED
DEC - 6 1955

Docket

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
DEC - 9 1955

December 8, 1955

Re: DMEA 3937
International Ore Corp.
Pine Mountain Mine
Maricopa Co., Arizona
$44,948.00 - Mercury

WSM

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team report.

The applicant requested aid in sinking a shaft and drifting to reopen and explore for ore in a mercury mine which is estimated to have produced 1,200 flasks of mercury from about 32,000 tons of ore. The average calculated recovery was 2.84 pounds per ton.

The examiners agree that the possibilities of the north ore body have not been determined and further exploration is justified, but the engineer and geologist do not agree on the amount of work warranted. Thus the engineer would confine the work to diamond drilling and the geologist would do the shaft sinking and drifting proposed by the applicant and diamond drilling in addition.

The estimated costs of the two different projects are:--

"Engineer"

Drilling	3 at 500' 1500') 4 at 100' 400')	1900' at $6.50/ft.	$12,350.00
Supervision			1,000.00
Materials and miscellaneous			400.00
		Total	$13,750.00

"Geologist" Applicant's proposed work plus diamond drilling.

Applicant's proposal.

Bulldozing	$ 448.00	
Headframe	3,200.00	
Hoist	3,000.00	$ 6,648.00
Sinking* 150' at $130.00/ft.	19,500.00	
2 stations	2,400.00	21,900.00
Drifting 400' at $33.00/ft.	13,200.00	
Timbering 400' at $8.00/ft.	3,200.00	16,400.00
		$44,948.00
Drilling 3 holes at 150' each 450' at $6.50/ft.	2,925.00	
3 holes at 500' each 1500' at $6.50/ft.	9,750.00	12,675.00
Total		$57,623.00

*The shaft sinking may be in progress.

The applicant and the examiners believe the shaft is necessary. The engineer considers it development, the geologist an adjunct of exploration with some exploratory value since it should go through the A vein.

A lack of adequate mine maps prevented preparation of complete plans and sections by the examiners and appraisal of the proposed program is rendered difficult. If only 1,200 flasks of mercury may be inferred the programs involving shaft sinking and drifting are disproportionate.

I concur with the engineer's recommendation. If more and better ore is found than the data supplied portend, the shaft and drifting might be justified.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
DEC - 9 1955

December 8, 1955

Re: DMEA 3937
International Ore Corp.
Pine Mountain Mine
Maricopa Co., Arizona
$44,948.00 - Mercury

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

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Timbering 400' at $8.00/ft.	3,200.00	16,400.00
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I concur with the engineer's recommendation. If more and better ore is found than the data supplied portend, the shaft and drifting might be justified.

N. E. Nelson

N. E. Nelson

NENelson:iml
0-12/8/55
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
M. M. Meyer, 3623

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

December 8, 1955

RECEIVED
DEC - 9 1955

Re: DMEA 3937
International Ore Corp.
Pine Mountain Mine
Maricopa Co., Arizona
$44,948.00 - Mercury

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: E. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team report.

The applicant requested aid in sinking a shaft and drifting to reopen and explore for ore in a mercury mine which is estimated to have produced 1,800 flasks of mercury from about 32,000 tons of ore. The average calculated recovery was 2.84 pounds per ton.

The examiners agree that the possibilities of the north ore body have not been determined and further exploration is justified, but the engineer and geologist do not agree on the amount of work warranted. Thus the engineer would confine the work to diamond drilling and the geologist would do the shaft sinking and drifting proposed by the applicant and diamond drilling in addition.

The estimated costs of the two different projects are:--

"Engineer"

Drilling	3 at 500'	1500'	1900' at $6.50/ft.	$12,350.00
	4 at 100'	400'		
Supervision				1,000.00
Materials and miscellaneous				400.00
			Total	$13,750.00

"Geologist" Applicant's proposed work plus diamond drilling.

Applicant's proposal.

Bulldozing	$ 448.00	
Headframe	3,200.00	
Hoist	3,000.00	$ 6,648.00
Sinking* 150' at $130.00/ft.	19,500.00	
2 stations	2,400.00	21,900.00
Drifting 400' at $33.00/ft.	13,200.00	
Timbering 400' at $0.00/ft.	3,300.00	16,500.00
		$44,948.00
Drilling 3 holes at 150' each 450' at $6.50/ft.	2,925.00	
3 holes at 500' each 1500' at $6.50/ft.	9,750.00	12,675.00
Total		$57,623.00

*The shaft sinking may be in progress.

The applicant and the examiners believe the shaft is necessary. The engineer considers it development, the geologist an adjunct of exploration with some exploratory value since it should go through the A vein.

A lack of adequate mine maps prevented preparation of complete plans and sections by the examiners and appraisal of the proposed program is rendered difficult. If only 1,500 flasks of mercury may be inferred the programs involving shaft sinking and drifting are disproportionate.

I concur with the engineer's recommendation. If more and better ore is found than the data supplied portend, the shaft and drifting might be justified.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-12/8/55
cc: Director's reading, 4212
Branch reading, 4212
DMRA (3)
Bochat file
H. H. Meyer, 3623

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

Docket

RECEIVED
DEC - 1 1955

224 New Customhouse
Denver 2, Colorado

November 29, 1955

WBM

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, DMEA Docket 3937 (Mercury), International Ore Corporation, Pine Mountain mine, Maricopa County, Arizona

Enclosed are the original and three copies of the report pertaining to the above application.

The Reports of Examination are not in agreement as to the kind and amount of work, but they do agree that exploration is warranted.

We recommend that your consideration be given to the exploration program proposed in the Engineering Report. If you concur in the proposed drilling program, it is suggested that the applicant be advised and his concurrence obtained.

W. M. Traver

By J. W. Townsend
J. W. Townsend

E. N. Harshman
E. N. Harshman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
12-5-55
(date)

RECEIVED

DEC - 1 1955

November 15, 1955

Memorandum

To : W. M. Trower, Executive Officer, DMEA Field Team, Region III

From : Superintendent, Southwest Experiment Station

Subject : Examination Report, Docket DMEA-3837, International Ore Corp.'s Pine Mountain Mercury Mine, Sunflower Mining District, Maricopa County, Ariz.

TRANSMITTED

NOV 29 1955

Enclosed are original and 6 copies of the section on Summary, Conclusions and Recommendations, and the one on Engineering by T. M. Rensle of the Bureau of Mines for the above report. A separate section on Geology already has been submitted by the Geological Survey.

This applicant wanted Government aid to explore its Pine Mountain mercury deposits. J. H. Faick of the Geological Survey and T. M. Rensle of the Bureau of Mines examined the property and both thought that some supplementary work should be done, but they could not agree on the method. Rensle recommends diamond drilling and I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. M. Trower (2)
J. H. Faick
J. F. Shaw
DMEA-3837
RF

WRStorms:frj

Reviewed by
DMEA OPERATING COMMITTEE
12-5-55
(date)

RECEIVED
DEC - 1 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
NOV 29 1955

DMEA-3937, International Ore Corporation

Pine Mountain Mercury Mine

Maricopa County, Arizona

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

November 1955

Reviewed by
DMEA OPERATING COMMITTEE
12-5-55
(date)

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By T. M. Romslo[1]

The Pine Mountain mercury mine in Maricopa County, Ariz. was examined for the Defense Minerals Exploration Administration in connection with an application for Governmental aid by the International Ore Corp. The examination was carried out under the application's docket number, DMEA-3937. Aid was requested on a proposed project that involved sinking a 150-foot shaft and 400 feet of drifting at an estimated cost of $44,948.00.

The Pine Mountain mine has been worked intermittently since the early 1910's. Its principal workings have been inaccessible for several years. Total production from the mine has been estimated at 1,200 flasks of mercury from 32,000 tons of ore. This includes the applicant's recent production of 234 flasks of mercury from 7,061 tons of ore mined by open pitting (ore is treated in a 40-ton rotary furnace situated near the mine).

Cinnabar is the ore mineral of the Pine Mountain mine. It is localized in 3 nearly parallel zones of brownish schist that strike N. 50° to 60° E. and dip northwesterly at 45° to 50°. The cinnabar occurs principally as disseminations of fine particles.

All production before the present open-pit operation is believed to have come from 2 ore bodies (North and South) that were mined to the 3rd level at a vertical depth of about 225 feet. Records indicate

---

1/ Mining Engineer, U. S. Bureau of Mines

the South ore body has been mined out, but the zone of veins B and C of the North ore body may persist with depth. Other potential mineralized ground is confined to the relatively unexplored "A" vein of indicated low-grade ore that occurs in the footwall of the North ore body.

Exploration of the 2 possible ore zones indicates the presence of a significant amount of ore and could best be carried out by the proposed diamond drilling project.

The applicants proposed project is not acceptable. It is not designed to test the most favorable zone, the depth extension of veins B and C. Although it is designed to test vein A, its primary objective appears to be the reopening of the mine with the hope of finding ore in the old workings. Thus the major portion of the program involves development work rather than exploratory operations.

Approval is recommended for Governmental participation in the proposed diamond drilling project at the Pine Mountain mine. Estimates indicate that the project could be completed in 4 months at a cost of $13,750.00.

DMEA-3937, INTERNATIONAL ORE CORPORATION

PINE MOUNTAIN MERCURY MINE

MARICOPA COUNTY, ARIZONA

Engineering Report

By T. M. Romslo
Mining Engineer
U. S. Bureau of Mines

November 1955

Reviewed by
DMEA OPERATING COMMITTEE
12-5-55
(date)

DMEA-3937, INTERNATIONAL ORE CORPORATION
PINE MOUNTAIN MERCURY MINE
MARICOPA COUNTY, ARIZONA

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INTRODUCTION

The International Ore Corp. applied for Governmental aid in a proposed exploration project at the Pine Mountain mercury mine in Maricopa County, Ariz. The application was received by the Defense Minerals Exploration Administration, Washington, D. C., on August 4, 1955. It was docketed as DMEA-3937, reviewed by the Operating Committee, and referred to the Field Team of Region III for a field examination of the property.

Proposed explorations consisted of clearing a site for a shaft, construction of a headframe, purchase and installation of a hoist with a power unit, sinking of a 150-foot vertical shaft, and the driving of 400 feet of drifts on 2 levels. Estimates, based on an Independent Contract, indicated the program would be completed in 4 months at a total cost of $44,948.00.

Field examinations of the property were made September 15 and 16 by J. N. Faick, Geologist, U. S. Geological Survey, and by T. M. Romslo, Mining Engineer, U. S. Bureau of Mines on September 21, 1955. The principal representatives of the corporation at the property were: D. W. Simpson, president, and M. Contreras, mining engineer, during Mr. Faick's examination; and M. Contreras during Romslo's examination.

LOCATION AND ACCESSIBILITY

The Pine Mountain Mercury Mine probably is situated in Sec. 31 of unsurveyed T. 8 N., R. 9 E., Sunflower Mining District, Maricopa County, Ariz. (figure 1). It is about 55 miles northeast of Phoenix, Ariz. To reach the mine from Phoenix, take U. S. Highway 60 east for 16 miles to the town of Mesa. Proceed 8 miles easterly on the same highway to its junction with the Bush Highway, then follow the northeasterly trending Bush Highway, an improved graveled road, for 49 miles to an access road that branches to the left near the "signed" Maricopa County boundary line. Proceed 4.6 miles on the graded access road to the mine camp. The mine and mill are a little over $\frac{1}{2}$ mile from the camp via a southwesterly-trending graded road.

TOPOGRAPHY, PHYSICAL FEATURES AND CLIMATE

The Pine Mountain mercury mine is on the western slope of the slightly west-of-north-trending Mazatzal Mountains. It is at an altitude of about 4,000 feet in a rather rugged area that comprises high ridges separated by deep V-shaped canyons. Pine Mountain, a prominent peak near the head of a southwesterly-flowing branch of Sycamore Creek, is about three-fourths mile northeast of the mine.

There is a variety of vegetation in the vicinity of the mine. Pine Mountain has a good stand of yellow pine. At lower altitudes dense growths of brush cover the slopes of hills, and live oak, juniper, and cypress trees form small stands in sheltered ravines.

Summers are pleasant and winters are mild. Rainfalls occur chiefly as heavy downpours during the summer months. Snowfalls are common in the winter months and may occur as late as the first part of April. Annual precipitation probably is greater than 15 inches.

There are no permanent streams in the area. Water for domestic, mining, and milling purposes at the Pine Mountain property is obtained from a spring.

HISTORY AND PRODUCTION

Cinnabar first was discovered in the Mazatzal Mountains in 1911. The discovery was on the west slope of the range on Alder Creek at about 6 miles north of Sunflower. In 1913, newspapers reported the presence of cinnabar on Pine Mountain. Discovery of the Pine Mountain deposits probably was made by William Reynolds, who with W. D. Boardman and others controlled several unpatented claims in the area for many years.

By 1925 deposits on the present Mercury claims Nos. 11, 12, and 13 had been prospected by numerous shallow pits and trenches, and crosscut adits to explore the deposits at depth had been started. In August 1927, Carl Lausen[1/] sampled a long tunnel near the Boardman property which probably was the site of the present Pine Mountain mercury deposits. In August 1927, the late W. B. Gohring of Phoenix, Ariz. obtained the property under an option agreement. Shortly thereafter the property reverted to the partnership of Reynolds and

1/ Letter to R. E. Talley, Aug. 23, 1927.

Boardman. In 1931, 2 or 3 crosscut adits were driven into the principal ore zone and in 1932 good ore reportedly was discovered in one of the adits. In April 1932 P. C. Benedict[2/], geologist, estimated that there were a few thousand tons of 9-to 10-pound mercury ore in the vicinity of the adits. Little work was done from 1933 to 1940 when the price of mercury reached a relatively high level.

In 1940, H. G. Harrison and Henry Stromsen of San Pedro, Calif. acquired the PineMountain mercury property and formed the Nidco Reserves, Inc. The corporation built a road from the Bush Highway to the mine and in August 1940 completed construction of a reduction plant that was equipped with a 36-inch by 48-foot Gould rotary furnace having a capacity of 40 to 50 tons of ore per day. A shaft was sunk and ore was developed by underground workings. According to newspaper accounts, about 30 men were employed during 1940 and 1941, and approximately 20 men were employed from 1942 to June 1944 when the price of mercury dropped. In December 1944, the corporation abandoned the property. According to reports, it also was in June 1944 that the State Mine Inspector condemned the shaft.

The depth of the shaft when operations ceased in 1944 was 300 feet according to newspaper reports, 260 feet according to the applicant, and 225 feet according to available maps. A total of 2,000 feet of drifts reportedly were driven from 3 levels at 75-foot intervals, the

2/ Letter to W. O. Boardman, April 6, 1932.

75, 150 and 225. The property remained idle to July 1954 when the International Ore Corp. acquired it and started surface rehabilitations. Mining and milling of surface and near surface ores started in February 1955.

As there is no readily available record of production from the Pine Mountain mercury mine to 1954, J. N. Faick[3/] has arrived at what appears to be a reasonably accurate estimate by using data obtained from old newspapers, The Minerals Year Book of 1943, and engineering and geological reports. The estimated total production of 1,200 flasks of mercury from 32,000 tons of ore includes International Ore Corp.'s production through September 1955 of 234 flasks from 7,061 tons of ore.

EXTENT AND OWNERSHIP OF PROPERTY

The property comprises a group of 21 unpatented lode mining claims (figure 2). Sixteen of the claims are registered as the MercuryNos. 1 to 10, and 16 to 21. The remaining 5 are registered both as Mercury claims 11 to 15, and as Turn Bull Nos. 1 to 5, respectively.

The International Ore Corp. reportedly controls the Mercury claims 1 to 10, and 16 to 21 by virtue of location and occupancy, and holds the other 5 claims under an option agreement of June 16, 1954 with the owner, George Cline. The corporation's address is Box 1091, Wickenburg, Ariz. Its officers are D. W. Simpson, President, T. H. Donaldson, Vice President, and J. H. Lochausen, Secretary-Treasurer.

3/ Geologist, U. S. Geological Survey

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PRESENT STATUS

Camp

The camp comprises a well-equipped dining room and kitchen building, a store room for groceries, and 14 cabins, some of which contain kitchens.

Mine

At present, operations are confined to the open-cut mining of ore pillars and low-grade zones of the North ore body's "A" vein. The back of the lower adit is the floor level of the open cut that presently averages about 75 feet long (strike length), 30 feet wide, and 25 feet deep (figures 3 and 4). Drilling is done with jackhammers. Blasted ore falls or is scraped to chutes from which it is drawn into cars that are hand trammed about 300 feet to a 25-ton bin at the mill.

The mining crew of 8 men and a mine foreman work one shift a day and 6 days weekly. Ore production averaged about 40 tons a day.

The principal buildings and equipment at the mine consist of the following:

1	Sheet-metal 16- by 18-foot compressor building that houses a 315-cu. ft. compressor and its Caterpillar power unit;
1	Rented Worthington 210-cu. ft. portable compressor;
3	Rock drills - 1 jackhammer, 1 stoper, and 1 jackleg drill complete;
4	Storage tanks - 1 water and 3 fuel oil;
1	20- by 25-foot wooden hoist house;
1	12-by 53-foot wooden building that houses change room, office, and sample-grinding room;
1	10- by 31-foot repair shop, and tool parts storage building;
1	1955 Chevrolet pickup truck.

Mill

The mill is continuously operated by a crew of 5 men.

Run-of-mine ore is crushed to minus 1/2-inch size by a jaw crusher. Crushed ore then is transported by a belt conveyor to a 40-ton steel bin in a 25- by 70-foot mill building.

Equipment in the mill comprises an automatic stoker, a 50-foot by 3-foot diameter Gould kiln, dust collector, 14 steel condensor tubes, 2 redwood condensor tanks, and electrical switch boards for control of power units, oil heater, kiln and vapor temperatures and lights.

The 17- by 17-foot power building, situated near the mill, houses a 58-K.W. generator, a Caterpillar engine, and a compressor driven by an electric motor.

According to M. I. Root, Mill Manager, recent production has averaged slightly under 2 flasks of mercury per day.

DESCRIPTION OF THE DEPOSIT

The Pine Mountain mercury belt, one of the 4 mercury belts of the Mazatzal Mountains, consists of reddish slates intruded by dikes and irregular masses of rhyolite porphyry. At the Pine Mountain mercury mine cinnabar is localized in 3 nearly parallel zones. The mineralized zones are named in order from footwall to hanging wall as "A", "B" and "C" and are separated from each other by barren schistose or rhyolitic rock (figure 4). They strike No. 50° to 60° E. and dip 45° to 50° W. (figure 5).

Cinnabar, the ore mineral, occurs principally as disseminations of fine particles in bleached or brownish schist, and in fractured and altered rhyolite. It also occurs in small amounts as discontinuous veinlets, generally less than $\frac{1}{2}$ inch wide.

ORE RESERVES

A reasonably accurate estimate of the ore reserves of the Pine Mountain mercury mine cannot be made because the underground workings are inaccessible and available maps of the workings do not contain adequate data. The maps suggest that the South ore body is essentially mined out. At the other mineralized zone, the North ore body, it appears that essentially all ore of "C" and "B" zones from the surface to the 3rd level also has been mined out. Present mining probably will exhaust the near surface reserves of these zones within a few months. Thus potential reserves are confined to an extension of zones "B" and "C" below the 3rd level, and the relatively unexplored "A" zone.

Possible reserves in "B" and "C" zones below the 3rd level appear to be confined to a zone having a strike length of about 125 feet and a true thickness of approximately 15 feet. This zone could contain 250 to 300 tons of plus 0.2 percent mercury per foot of depth. Zone "A" could contain a similar tonnage of material containing less than 0.2 percent mercury.

PROPOSED EXPLORATION

Applicant's Proposal with Estimated Costs

The applicant proposed that a vertical shaft be sunk to a depth of 150 feet and that a total of 400 feet of drifts be driven across the ore zone from shaft stations on the 50- and 150-foot levels. The shaft would be collared in the open cut at 40 to 50 feet northeast of the portal of the lower adit and pass through the "C" zone at a depth of about 50 feet. Following are the applicant's estimated costs that are based on performance of the work by a reputable contractor.

Preparing shaft site - bulldozing		
32 hours @ $14.00 per hour	$448.00	
Headframe and shaft collar	3,200.00	
Hoist, 2-ton capacity, including power unit	3,000.00	$6,648.00
*Sinking 150-foot vertical shaft to include all necessary timbering, etc., @ $130.00 per foot	$19,500.00	
2 station levels @ $1,200.00 each	2,400.00	21,900.00
400 feet of drifts @ $33.00 per foot	$13,200.00	
Timbering drifts @ $8.00 per foot	3,200.00	16,400.00
Total cost		$44,948.00

*The applicant recently told Mr. Faick that the corporation was about to start the proposed shaft-sinking operations. Intentions are to sink to a depth of about 50 feet and then drive a crosscut to the south for exploration of the "A" vein zone.

Alternate Proposal

The examining engineer proposes that Governmental aid in exploration of the mine be confined to a diamond drilling project in which the applicant has indicated an interest as a supplement to his proposal. Reasons why a drilling program is believed to be preferable to the applicant's proposal are a part of the conclusions of this report.

The alternate proposal consists of drilling a maximum of 7 diamond drill holes. Three of the holes, to be drilled from the surface, are designed to test for an extension of zones "A", "B", and "C" below the 3rd level. The other holes, to be drilled from either the surface or underground, would be drilled to test zone "A" at a higher horizon.

Holes to Test Zones A, B, and C

These holes should be designed to intersect the mineralized zone of the hanging wall, veins "C" and "B" at about 130 feet (dip measurement) below the 3rd level and at intervals of about 40 feet along the strike. At least 2 of the holes should be continued to a depth sufficient to penetrate the footwall zone, vein "A". The holes should be drilled in the vertical planes shown on figure 6. Topographic conditions will determine whether the holes should be drilled vertically or whether they should be inclined southward to penetrate the vein zones at more favorable angles. The depth of the holes should not exceed 500 feet each or a total of 1,500 feet.

Holes to Test Zone A

These 4 holes should be drilled to penetrate the vein at a depth of about 100 feet (dip measurement) below the lower adit and at intervals of about 40 feet along the strike. Drill sites for these holes at approximate locations shown on figure 6 probably will be accessible upon completion of present open-pit operation. Drilling of these holes from underground would be advisable if more favorable sites are made available from shaft sinking operations that probably have been started. Depth of the holes probably will not exceed 100 feet each or a total of 400 feet.

ESTIMATED COST OF PROPOSED DRILLING PROJECT

The following factors have been considered in arriving at an estimated maximum drilling price of $6.50 a foot under an independent contract:

1. Relatively isolated location;
2. Anticipated small amount of drilling, about 1,900 feet in 7 holes;
3. First 100 to 200 feet of drilling deeper holes probably will be in ravelly ground that will require much cementing and casing;
4. Core in mineralized zones should be not less than AX in size;
5. Rate of advance probably will not exceed 10 feet per shift;
6. Work should be in progress 2 shifts daily for 6 days a week;
7. Sampling will be done by drilling contractor who will deliver all core sludges from mineralized zones to the corporation's engineer.

Total estimated costs of the project follow:

Independent contract		
1,900 feet of drilling @ $6.50 per foot		$12,350.00
Supervision		
Corporation's engineer to devote ½ of his time to project, 4 months at $250.00 per month		1,000.00
Materials and supplies		
50 core boxes @ $5.00 each		150.00
Miscellaneous		
Handling of 50 samples @ $1.00 ea.	$50.00	
Assay of 50 samples @ $4.00 each	200.00	250.00
Estimated total cost		$13,750.00

CONCLUSIONS

The Pine Mountain mine probably has produced an estimated total of 1,200 flasks of mercury from about 32,000 tons of ore. Included in this production are about 7,000 tons of low-grade ore that is presently being mined by an open-pit. The remainder was produced from 2 ore bodies that were mined from the presently inaccessible underground workings. The South ore body is believed to be mined out, and the North ore body probably has been mined out to the 3rd level at a vertical depth of about 225 feet.

Possible reserves are believed to be confined to an extension of the North ore body's veins "B" and "C" below the 3rd level, and to relatively unexplored "A" vein of low-grade material in the footwall of the North ore body.

Although vein "A" should be explored, the primary objective of an exploratory program should be testing for an extension of veins "B" and "C" that are believed to have contained ore of presently economic grade. Testing of both zones by diamond drilling is feasible and can be done at a reasonably low cost.

The applicant's proposed project will test vein "A", but it is not designed to test the more favorable zone of veins "B" and "C". Its primary objective appears to be the reopening of the mine with the hope of finding ore in the old workings. Consequently, the major portion of the proposed program involves development rather than exploratory operations.

RECOMMENDATIONS

I recommend that Governmental aid in exploration of the Pine Mountain mercury mine be confined to a diamond drilling project that can be completed in 4 months at an estimated cost of $13,750.00.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

RECEIVED
DEC - 1 1955

November 22, 1955

TRANSMITTED
NOV 29 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3937 (Mercury), International Ore Corporation, Pine Mountain Mercury mine, Maricopa County, Arizona

I have reviewed the engineering report on the subject property prepared by T. M. Romslo, U. S. Bureau of Mines. I fully concur with his conclusion that the program proposed by the applicant is preparation for mining and not exploration.

In my memorandum of October 27, 1955, transmitting the geologic report to you, I suggested that the application should be denied on the grounds that there is insufficient data to indicate the presence of legitimate exploration targets. However, I did outline an alternative drilling program very similar to that proposed by Romslo.

In view of the feeling of both the examining geologist and engineer that exploration is warranted at the Pine Mountain mine, I suggest we consider favorably the program of exploration proposed in the engineering report. There is no indication that the applicant will accept the proposed drilling program if approved by the Washington DMEA staff.

E. N. Harshman

E. N. Harshman
Member, Field Team

ENHarshman:arh

Reviewed by
DMEA OPERATING COMMITTEE
12-5-55
(date)

IN REPLY REFER TO:
DMEA
Date Rec'd.
OCT 28 1955
BUREAU OF MINES
Denver, Colorado

RECEIVED
DEC 1 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

October 27, 1955

Memorandum

TRANSMITTED
NOV 29 1955

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3937 (Mercury), International Ore Corporation, Pine Mountain Mercury Mine, Maricopa County, Arizona

Enclosed are the original and eight copies of a geologic report by J. N. Faick, U. S. Geological Survey, in which a program of exploration at the Pine Mountain mercury mine is recommended.

The examiners were severely handicapped by the inaccessible condition of the mine workings, and they were obliged to base their conclusions on old production records, incomplete and inadequate mine maps, and very limited surface observations. The resulting rather negative approach is indicated in Faick's transmittal letter which states in part: "I could find no reason to believe the ore bodies are exhausted..." DMEA should have evidence to indicate that the ore bodies are not exhausted and that a program of exploration will discover significant amounts of ore.

The examining team has done a creditable job with the material available to them, but much data pertinent to a decision to explore the property cannot be obtained. We know almost nothing regarding the relative grades of the two ore shoots mined above the third level, the control of ore deposition, variations of grade with increasing depth, or the character, grade and width of ore, if any, in the sub-level below the third level.

The program proposed by the applicant certainly impinges on preparation for mining any ore that may exist on the edges of old stopes or below the third level. The modifications proposed by Faick (drilling from the 2nd level and the surface) can be considered exploration if exploration targets can be established.

I believe that the application should be denied on the grounds that there is insufficient data to indicate the presence of legitimate exploration targets. Should approval of exploration at

Reviewed by
DMEA OPERATING COMMITTEE
12-5-55
(date)

the Pine Mountain mine be considered, I suggest that the "A" zone be explored about 50 feet below the lower adit level by drilling three angle holes from a point just east of the "C" zone intersection with the lower adit level. These three holes would replace the three proposed by Faick on the second level of the mine and make it unnecessary to reopen the mine workings for exploration purposes. The surface drilling proposed by Faick should adequately explore for northeasterly extensions of the "B" and "C" zone.

An unsuccessful effort was made to obtain R.F.C. reports on the Pine Mountain property prepared by C. A. Raser. They may be on file in Washington, D. C., and if they can be found, it is possible that they will contain data pertinent to a decision on the request for exploration assistance.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (9)

ENHarshman:arh

DMEA
Date Rec'd
OCT 28 1955
BUREAU OF
Denver, Colorado

Box 4126 University Station
Tucson, Arizona

RECEIVED
DEC - 1 1955

October 21, 1955

TRANSMITTED
NOV 29 1955

MEMORANDUM

To: Mr. E. N. Harshman

From: J. N. Faick

Subject: DMEA 3937, International Ore Corporation,
Pine Mountain Mercury Mine,
Maricopa County, Arizona

Enclosed are the original and 8 copies of my report of examination of the above subject property. The Pine Mountain mine has been one of the largest mercury producers in Arizona, and I tentatively estimate production at slightly over 1200 flasks of quicksilver from about 32,000 tons of ore. The mine has been a marginal producer and operates principally during times of high quicksilver prices.

I could find no reason to believe the ore bodies are exhausted; therefore, am recommending Government participation in exploration.

Brochure will be returned by Mr. Storms.

John N. Faick

JNF:ms

cc. Harshman (8)
Storms

Reviewed by
DMEA OPERATING COMMITTEE
12-5-55

MINERAL DEPOSITS
DMEA
RECEIVED
NOV 9 1955
U.S.
GEOLOGICAL SURVEY
DENVER, COLORADO

RECEIVED
DEC - 1 1955

Box 4126 University Station
Tucson, Arizona

November 7, 1955

TRANSMITTED
NOV 29 1955

To: Mr. E. N. Harshman

From: J. N. Faick

Subject: DMEA 3937, International Ore Corporation,
Pima Mountain Mine, Maricopa County, Arizona

On page 12, lines 12 and 13, in my report on the above subject property, "C" was inadvertently used instead of "A", and "30" was used instead of "75". This sentence, starting on line 10, should read as follows:

"The shaft would start near the outcrop of the 'B' and 'C' zones and, according to the applicants, would pass through the 'A' zone at a depth of about 75 feet; thus would provide another test of the 'A' vein."

Please correct this error in your copies of the report.

John N. Faick L B
John N. Faick

JNF:ms

cc: Harshman - 8

Reviewed by
DMEA OPERATING COMMITTEE
12-5-55
(Date)

U. S. DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REGION III

TRANSMITTED
NOV 29 1955

GEOLOGY

REPORT OF EXAMINATION

DMEA 3937

INTERNATIONAL ORE CORPORATION
PINE MOUNTAIN MINE

SUNFLOWER DISTRICT
MARICOPA COUNTY, ARIZONA

(Mercury)

By
John N. Faick
Geologist
U. S. Geological Survey

October 21, 1955

Reviewed by
DMEA OPERATING COMMITTEE
12-5-55
(date)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM III

REPORT OF EXAMINATION

DMEA 3937
INTERNATIONAL ORE CORPORATION
PINE MOUNTAIN MINE

SUNFLOWER DISTRICT
MARICOPA COUNTY, ARIZONA
(Mercury)

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ILLUSTRATIONS

Fig. 1	Location Map	See Engineering Report
Fig. 2	Claim Map	" " "
Fig. 3	Pine Mountain Mercury Mine	Following Page 3
Fig. 4	Geology of 30-foot sublevel	" " 9
Fig. 5	Geological Section through Adits	" " 10

INTRODUCTION

The Pine Mountain Mine, Maricopa County, Arizona (fig. 1) was examined by this writer on behalf of the Defense Minerals Exploration Administration, which received an application for Government aid in exploring the mine for additional reserves of mercury. The application was submitted by the International Ore Corporation, which company controls 21 unpatented claims (fig. 2); these are controlled by virtue of purchase and location. The applicant's request involved sinking a new shaft to a depth of 150 feet and driving 400 feet of drifts and crosscuts to reopen the mine. The applicants estimated cost is $44,948. The examination was handicapped by the fact that the important part of the mine, including the shaft and the subsurface workings from which most of the former production was obtained, is completely inaccessible. Appraisal of the property depended upon analysis of old maps, incomplete production records, examination of the surface or near surface workings. This examination revealed that the proposed new shaft is the best means of reclaiming the old part of the mine and for providing access to ore that may exist on the lower level. It is also shown that of 3 mineralized zones only the "B" and "C" zones have been mined, and that the "A" zone is essentially unexplored. I believe exploration is justified by drilling 3 holes underground to test the "A" zone, by drilling 3 surface holes to test the "B" and "C" zones for extensions of the ore believed to exist on the 3rd level, and by sinking the exploration shaft to regain entrance to the old workings for the purpose of underground mapping, sampling and exploration drilling.

HISTORY

Quicksilver was first discovered in the Mazatzal district in 1911 on Alder Creek, a branch of Sycamore Creek, in Maricopa County, and in 1913 its presence on Pine Mountain was reported in newspaper accounts. Ransome[1/] examined the district in 1914 but did not specifically mention the Pine Mountain deposits; however, he indicated that Pine Mountain was in the mercury-bearing area. The Pine Mountain deposits apparently were discovered by William Reynolds who, in partnership with W. D. Boardman and others, controlled several unpatented claims in the Pine Mountain area for many years. By 1925 considerable shallow prospecting had been done and crosscut adits had been started to explore the deposits at greater depths. The workings are near the west end of the original claim No. 1 and on Claim No. 2, which are now included in the unpatented claims Mercury 11, 12 and 13. In August 1927 Carl Lausen[2/] sampled a long tunnel west of camp on the Boardman property, and this apparently is the site of the Pine Mountain mine as known today. The property was optioned to W. B. Gohring, Phoenix, Arizona in August 1927 but it apparently reverted to the original partnership soon thereafter. About 1931, at which time the property was owned by Reynolds and Boardman, 2 or 3 crosscut adits had been driven into the principal ore zone, and good ore was reported to have been discovered in one of the tunnels on the Boardman (or Pine Mountain?) property in 1932. In April 1932 P. C. Benedict[3/], geologist, estimated that in the vicinity of the tunnels

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1/ Ransome, F. L., Quicksilver Deposits in the Mazatzal Range.
1a/ Refer to Fig. 17, p. 88, Ariz. Bur. Mines Bull. No. 122, 1927.
2/ Letter to R. E. Tally, Aug. 23, 1927.
3/ Letter to W. D. Boardman, April 6, 1932.

there was a few thousand tons of ore containing from 9 to 10 pounds of mercury per ton. Very little work was done at the property from 1933 until 1940 when relatively high prices of mercury greatly stimulated mercury mining throughout the Mazatzal Mountain district.

Control of the Pine Mountain mine passed from the original owners, Reynolds and Boardman, and a partner, H. G. Harrison, to Henry Stromsen, San Pedro, California, in 1940, and a comprehensive development program was undertaken by the new company operations. The new owners, operating under the name of Midco Reserves, Inc., with headquarters at 231 South LaSalle Street, Chicago 4, Illinois, built a road to the property from the Bush highway, and in August 1940 completed construction of a modern reduction plant equipped with a 36-inch by 48-feet Gould rotary furnace having a capacity of 40 to 50 tons per day. A shaft was sunk below the original tunnel level and the ore was developed by underground workings (Fig. 3). Newspaper accounts indicate that about 30 men were employed in 1940 and 1941, and that approximately 20 men were employed from 1942 to 1944, inclusive. Apparently mining operations stopped in June 1944, when the price of mercury was drastically reduced, and the Midco Reserves Corporation abandoned the property in December 1944, thus ending the only extended period of production from the Pine Mountain mine.

It is reported that the State Mine Inspector condemned the shaft in June 1944. When the mine closed the shaft was reported in newspaper accounts to be 300 feet deep (the applicants say 260 feet and available maps indicate 225 feet) and 2,000 feet of drifts had been driven on 3 levels at 75-foot intervals (see fig. 3). These are

the 75-foot, 150-foot and 225-foot levels. The mine remained idle from 1944 until July 1954, at which time the International Ore Corp. assumed control and put the plant into operation. The officers of this company are D. W. Simpson, President; T. H. Donaldson, Vice President and J. H. Lochausen, Secretary-Treasurer. The address of the Company is Box 1091, Wickenburg, Arizona. The new operators mined surface and near-surface ores by open pit and glory-hole methods and started regular production of mercury in February 1955.

PRODUCTION AND GRADE

The exact production for the Pine Mountain mine is not known to us but the property was one of the 4 principal contributors to Arizona mercury production from 1940 to 1944, inclusive, these being the years of greatest production of mercury in Arizona. It is reported [1] that 2 flasks of quicksilver were produced daily from July 16 to December 1, 1940, with a crew of 25 men. It was reported in newspaper accounts that in March 1941 54 tons of ore were treated daily, and in April 1941 that 40 tons of ore were treated in 24 hours. In June 1942 it was reported that the 25-ton furnace was treating mine run ore averaging 7 pounds of quicksilver per ton and that 2½ flasks of quicksilver were being produced daily. These reports may be typical of daily or monthly production, but are not applicable on an annual or long term basis, otherwise the amount of mercury produced in Arizona from 1940 to 1945 would be much greater than shown by available statistics. In January 1945, after operations ceased, it was reported that 400 flasks of quicksilver had been produced during 1943 and 1944. This appears

[1] Wilson, E.D., Arizona Bureau of Mines Circular No. 9, Mercury, p. 6, 1941.

to be a reasonable estimate and may represent the average production for the period of operations from 1940 to 1944, inclusive; i.e., an estimated production of 200 flasks annually from the Pine Mountain property. This estimate is partly confirmed by the 1943 production given in the Minerals Yearbook. In the first part of 1943 the Pine Mountain mine yielded 76 flasks from 2427 tons of ore and in the second part of the year yielded 137 flasks from 1863 tons, under 2 managements. Thus in 1943 a total of 213 flasks of quicksilver were produced. During the first part of the year the yield of quicksilver was 2.4 pounds per ton and the yield was 5.04 pounds per ton during the last part of 1943.

It is claimed by the applicant that the period from July 1, 1943 to June 30, 1944 was a typical period of operation. It is reported that production records of this interval show that the mine operated 8 hours daily, the mill operated 3 days out of 10, and that gross returns of mercury sold amounted to about $50,000. If we assume that the average price of quicksilver was $190, then it indicates that 263 flasks of quicksilver were produced during this 12-month period. This checks reasonably well with the data given in the paragraph above.

Engineers' estimates prepared for the applicants indicate that about 25,000 tons of calcine are stored in the waste dump and this probably is a good estimate of the amount of ore produced prior to 1954. In practice it is assumed that a given quantity of ore yields an equal amount of calcine.

The International Ore Corporation produced 69 flasks of quicksilver during the rehabilitation period from July 1954 to February 1955, and from February 14 through September 1955, had

produced 234 flasks of quicksilver from 7061 tons of ore, an average recovery of 2.5 pounds per ton, all of which was mined from the open cut. If the total production is 32,000 tons of ore, and the recovered quicksilver is 1,200 flasks of quicksilver, it indicates a recovery of only 2.9 pounds quicksilver per ton. I believe this estimated recovery is too low and is subject to revision.

In the lower adit Lausen took 22 samples in August 1927 and apparently took 2 more at a later date, each representing a 5-foot cut or a total sample length of 120 feet, and he obtained an average grade of 0.11 percent mercury for the entire adit. The sample from the first 5-foot interval near the portal of the adit yielded 0.124 percent mercury and 60 to 95 feet from the portal he obtained an average of 0.257 percent mercury. This 35-foot-wide zone is probably the "B" zone as named by Benedict in 1932.

Parts of the "B" and "C" zones can still be seen near the surface where the ore is now being mined, and the "A" zone can be seen in the upper adit. All the ore mined has been from the "B" and "C" zones; the "A" zone was thought to be too low grade to be minable. The "A" zone in the upper adit was recently sampled by Melquiades Contrearas, Engineer for the applicant Company, and the weighted average of 4 samples indicated a mercury content of 0.175 percent, for a sampled length of 18.9 feet horizontally. The applicants believe this is minable ore under present conditions. It is reported that near the surface the "A" zone is 15.5 ft. thick. The "B" zone is 12 feet thick and the "C" zone is 8 feet thick. The "B" and "C" zones are about 10 feet apart and the "A" and "B" are about 70 feet apart.

Consulting geologists for the applicant corporation, expect zones "B" and "C" to converge within 100 feet below the surface workings. In the miscellaneous old reports there is considerable difference in the reported thickness of the ore zone but this can be accounted for by slight irregularities in the ore zone and by the fact that the limits of the ore zone are actually assay limits.

In 1932 Benedict reported that in the lower adit the "B" zone was 6 ft. thick and contained about 9 pounds of mercury per ton and the "C" zone averaged 4.8 feet in width and contained about 0.5 percent mercury. At this same locality Contrearas sampled "C" zone and obtained 0.58 percent mercury for a thickness of 4.8 feet. In "B" zone, 8 samples taken by Contrearas on both sides of the drift to represent a thickness of 14.1 feet, contained a weighted average of 0.295 percent mercury. This writer took one sample each of the hanging wall part of zones "B" and "C", both representing zones 10 feet thick normal to the structure, and these samples contained 0.10 and 0.06 percent respectively. The footwall sides of both zones are reported to be considerably higher grade than the hanging wall sides but were not accessible for sampling in September 1955. When the property was examined by this writer the operators claimed the recovery was only slightly less than 4 pounds of quicksilver per ton, and this low grade they thought was due to the large amount of waste mined with the sample ores. Undoubtedly waste dilution at present is an extremely important factor in contributing to the low grade of ore fed to the furnace. The operators claim neither loss nor profit from the operations but believe that if cleaner ore could

be mined from underground, and if the size of the reduction plant coul d be increased, or if the present plant could be operated continuously at capacity, then a substantial profit would result. The ore supply presently available is not great enough to allow continuous operation at capacity.

GEOLOGY

The mercury deposits of the Mazatzal Mountains occur in 4 east-northeasterly trending mineralized zones which are designated as the Slate Creek, Alder-Sycamore, Mercuria and Pine Mountain belts. The Pine Mountain mine is within the last mentioned belt and is situated about 3/4 of a mile southwesterly from the Summit of Pine Mountain, a conspicuous landmark in the area. In the Pine Mountain mine area mercury is said to have been traced intermittently for a distance of 7500 feet along the strike of this mercury-bearing belt. Prospecting and development has been done at two principal places, the first being on Brush Creek at a locality known as Reynolds cabin, and the other, which is known as the Pine Mountain mine, is on a branch of Sycamore Creek about 2000 feet west of Reynolds cabin. Only the Pine Mountain mine area was visited in September, this being the only place where exploration was proposed.

The Pine Mountain belt consists essentially of reddish slates, intruded by dikes and irregular masses of rhyolite porphyry, similar to that which forms the core of Pine Mountain. In the vicinity of the quicksilver deposits the slate has been metamorphosed to a bleached or brownish sericitic schist.

The principal valuable mineral is cinnabar; however, native mercury and traces of calomel have been reported, and black surface stain on some of the near surface ore is believed to be metacinnabar.

Considerable limonite, probably derived from pyrite and iron-bearing carbonates is present, and small amounts of oxides of copper are present in several places. The dominant gangue minerals are quartz and iron-bearing carbonates.

The ore consists principally of bleached or brownish schist, and fractured and altered rhyolite; in which fine particles of cinnabar are disseminated in sufficient quantity to cause a pink tint in the host rock. Small amounts of cinnabar occur in narrow discontinuous veinlets, usually less than 1/2 inch wide, and these are localized along partings in the schist or on narrow fractures that are transverse to the foliation. The cinnabar in the veins is invariably associated with a gangue of quartz and iron-bearing carbonate, but these are not noticeably abundant at the Pine Mountain mine. Pyrite and tetrahedrite have been reported but not seen by this writer.

Maps of the Pine Mountain mine (fig. 4) prepared by P. C. Benedict in 1932 showed that cinnabar is localized in 3 nearly parallel zones which were designated as "A", "B" and "C", named in order from footwall to hanging wall or from southeast to northwest, each zone is separated from the others by barren schistose or rhyolitic wall rock. These zones strike about N 50°-60° E and dip about 45°-50° west and tend to be more-or-less parallel to the foliation of the schist and fractures or shear zones in the rhyolite. The ore zones are nearly parallel to the east slope of Sycamore Creek Canyon, so the part of the zones extending above the floor of Sycamore Creek Canyon was very favorably situated for exploration and open cut mining.

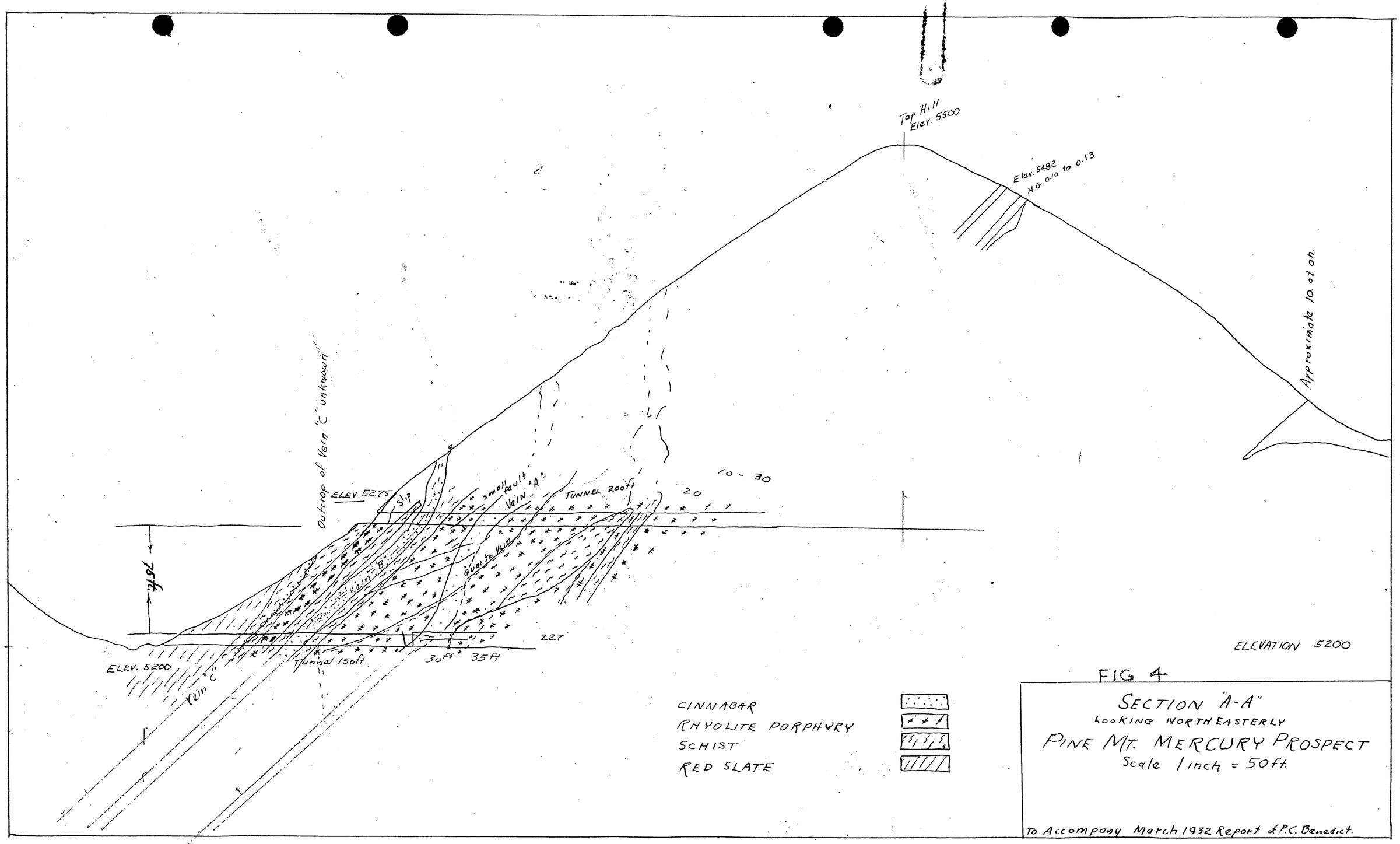


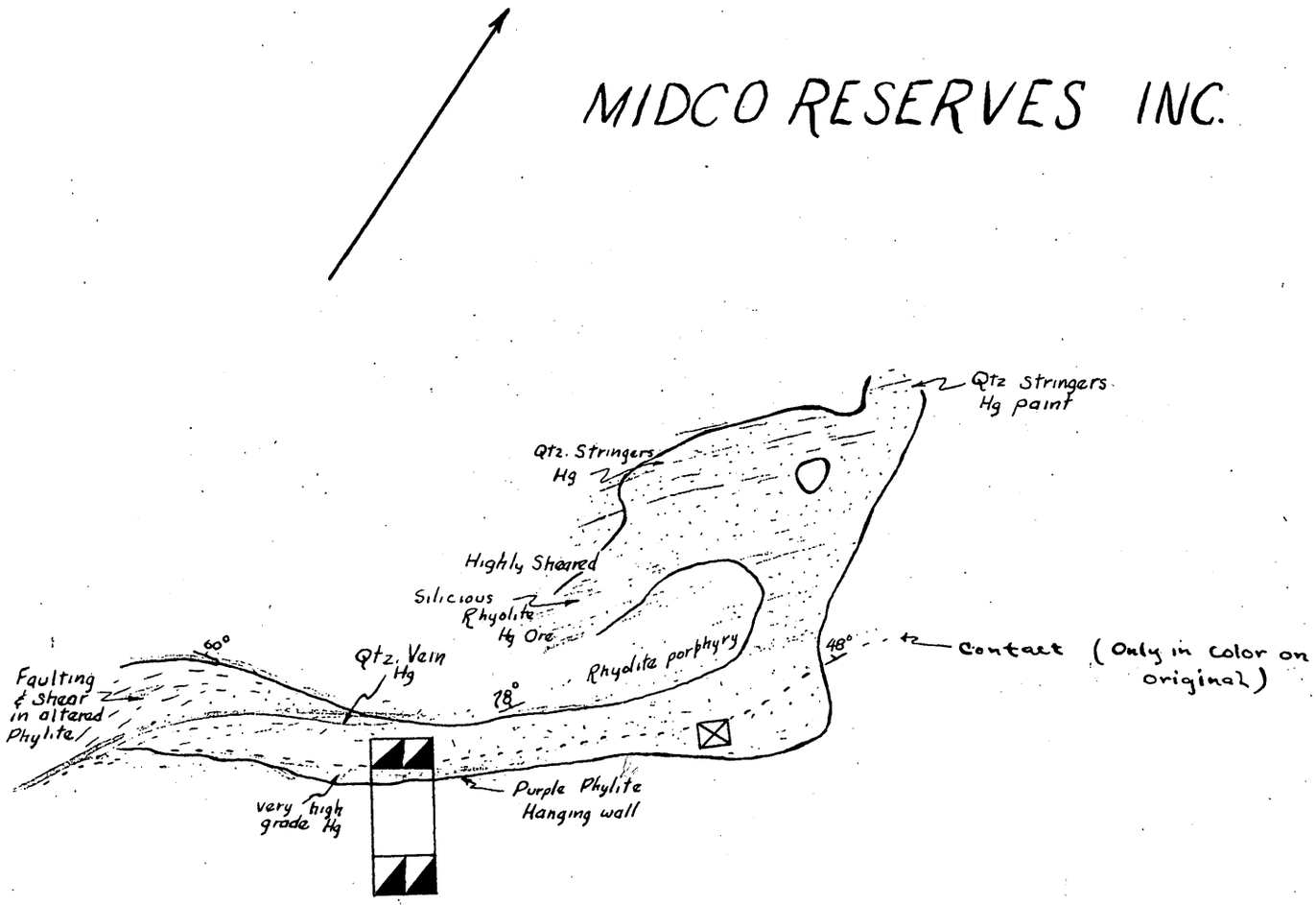
FIG 4.

SECTION "A-A"
LOOKING NORTHEASTERLY
PINE MT. MERCURY PROSPECT
Scale 1 inch = 50 ft.

To Accompany March 1932 Report of P.C. Benedict.

The mine is situated in an area that is obviously deformed by folding of the schist and by numerous faults, believed to have relatively small displacements, and which cut both the schist and rhyolite. Because of poor exposures evidence of faulting is not conspicuous at the surface, but it is a noteworthy feature on all maps of the mine workings. Undoubtedly structural deformation of the country rock has been an extremely important factor in the localization of the ore bodies.

Inspection of the map of the underground workings (fig. 3) reveals that 2 ore bodies have been mined from the surface or near the surface to the 3rd level. These ore bodies have a distinct northerly rake and may be arranged en echelon, along both strike and dip of the ore zone. The south ore body, which is the body closest to the shaft, appears to have been mined from above the 1st level to the 3rd level. The strike length of this ore body, as shown on fig. 3, was about 100 feet on the 1st level and about 45 feet on the 3rd level. The north, or main ore body, which appears to be the larger, has a strike length of about 100 feet near the surface and is about 125 feet long on the 3rd level as interpreted from fig. 3. On the 3rd level the south ore body appears to be about 5 feet thick and the north ore body about 15 feet thick as estimated from Fig. 3. A map (Fig. 5) of the 30-ft. sublevel (below 3rd level), indicates the mineralized zone was about 35 feet wide horizontally near the north end of the mine.



30 ft. Sub-level

Scale 1" = 20' Nov. 1944

FIG 5

Pine Mt Mine
Original probably by C.A. Resor
Traced 10/11/55

RECEIVED
DEC - 1 1955

ORE RESERVES

Consulting geologists for the applicant company estimated the total ore reserves of all classes to be 326,563 tons of ore having an average grade of nearly 0.2 percent mercury. I believe this tonnage estimate is fantastic and probably should be divided by about 10; however, a grade of 0.2 percent mercury or more is in the realm of possibility.

Conditions at the mine prevent making a reasonable estimate of ore reserves. The ore that formerly existed near the surface is almost mined out and will probably be exhausted before the end of 1955. Likewise the available maps suggest that the South ore body is essentially mined out, it having diminished in size downward to the point where only a small body, about 40 feet long and 5 feet wide remains on the 3rd level. The north ore body appears to be essentially mined out down to the 3rd level, but available maps indicate that mercury ore is present on the 3rd level, the 30-foot sublevel (fig. 4) and certainly must extend below it. An ore body having a strike length of about 125 feet and a horizontal width of about 20 feet (15 feet true thickness) appears from the map to be present on the 3rd level and also on the 30-foot sublevel. This indicates the reserves below the 3rd level might amount to 250 or 300 tons per foot of depth vertically. There is no geological reason to indicate that ore will not extend below the 3rd level and the 30-foot sublevel, but we do not know how long the extension might be. Undoubtedly additional ore remains in the old workings but the cost of recovery may exceed the value of the ore.

PROPOSED EXPLORATION

The workings below the level of the lower adit are completely inaccessible and the applicants propose to provide a new shaft 150 feet deep and 400 feet of drifts and crosscuts to regain entrance to the old workings. It is believed to be easier and cheaper to sink a new shaft than to reclaim the old shaft which is caved. The new shaft would be placed in the open cut, about 40 or 50 feet northeast of the old portal of the lower adit, in an area where the applicants believe reasonably good ground conditions exist. The shaft would be connected to the second level, from which it is believed the lower levels could be reached for sampling, etc. The shaft would start near the outcrop of the "B" and "C" zones and according to the applicants would pass through the "A" zone at a depth of about ~~50~~ 75 feet; this would provide another test of the "A" vein.

Review of the proposed project and examination of the property indicates that the program as originally proposed is hardly adequate, and that it should be supplemented by diamond drilling. It was decided that 3 holes, inclined 45° east and about 150 feet deep should be drilled to test the "A" zone at about 100 feet below the lower adit level. In order to avoid drilling into the old mine workings it will be best to drill these holes from underground after the shaft is completed either to the 45-foot or 150-foot levels, and it is herein suggested that the holes be drilled from 2nd level if possible. About 3 nearly vertical holes should be drilled from the surface to test for the northward extension of the ore zone believed to exist on the 3rd level. The surface holes should attempt to intercept

the ore zone about 100 feet north of the north end of the mine as shown in fig. 3. It is probable that the depth of the holes need not exceed 500 feet. The applicant has expressed interest in doing this drilling as a supplement to the original proposal. The purpose of the exploration program is to increase the available ore reserves to the point where the present plant can be operated at capacity, on a continuous basis, or to the point where increasing the capacity can be justified.

Exploration appears to be justified for these reasons:

1. Old maps indicate that ore is probably present on and below the 3rd level. This ore can be made available for sampling, exploration or mining most easily through a new shaft, as proposed by the applicants.

2. The "A" zone has been explored only in the upper adit, and is worthy of additional exploration because the applicant's samples indicate that it may contain sufficient mercury to be minable under present conditions.

3. A possible extension of the ore bodies north of the present workings has never been explored, and it is believed that such an extension of the ore zone may exist.

4. The Pine Mountain mine has been one of the larger producers of mercury in Arizona and it is possible that exploration will prolong the life of this mine.

If exploration results in a discovery of ore I would expect the future performance to be somewhat better than that represented by the 1940 to 1944 period, because of the competency of the applicant company.

It is likely that the applicants will start the new shaft soon and will attempt to connect with a 45-foot sublevel, and this phase of the work may be completed before a DMEA project can be approved.

CONCLUSIONS AND RECOMMENDATIONS

The Pine Mountain mine is believed to have produced not less than 1200 flasks of mercury, from about 32,000 tons of ore; therefore, it is one of the larger producers of mercury in Arizona. The north, or main orebody is probably the largest thus far discovered in the Mazatzal Mountains. The mine was successfully operated from 1940 to 1944 and during this period reportedly obtained and repaid a $30,000 R.F.C. loan. I believe that exploration might lead to the discovery and mining of about as much ore as previously produced. I therefore am recommending Government participation in exploration to include a shaft 150 feet deep, about 400 feet of drifts and crosscuts, and the drilling of 6 diamond drill holes not to exceed a total of 2000 feet of holes.

Docket

DMEA
Date Rec'd.

SEP 9 1955

BUREAU OF MINES
Denver, Colorado

Copy retained 400

September 8, 1955

Memorandum

To: W. R. Storms

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 3937, (Mercury), International Ore Corporation, Maricopa County, Arizona

The subject application in the amount of $44,948.00 is enclosed herewith. The brochure consists of:

1. Form MF-103 and information sheets
2. Geologic Map on the Pine Mountain Mercury Mine, Maricopa County by Geoprofessional Services, Inc.
3. Claim map
4. Sketch of mine workings
5. Photocopy of memo from James W. Pennington to W. S. Martin
6. Photocopy of memo from N. L. Nelson to W. S. Martin
7. Photocopy of transmittal letter from George Selfridge to Executive Officer
8. Copy of Executive Officer's memo of September 2, transmitting brochure to this office

A field examination and suitable report are required. The completed report should be sent directly to the Executive Officer with a copy of your memo of transmittal to this office.

W. H. KING

W. H. King

Copy to: W. M. Traver (3)
E. N. Harshman
J. N. Faick
Sec. Op. Comm (2)

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

Docket

RECEIVED
SEP 1955

September 2, 1955

224 New Customhouse
Denver 2, Colorado

WSG

Memorandum

To: W. H. King (With brochure)
J. N. Faick

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3937, (Mercury), International Ore Corporation, Maricopa County, Arizona

Enclosed is the subject application in the amount of $44,948.00. The brochure consists of:

1. Form MF-103 and accompanying answer sheets
2. Claim map of the property
3. Sketch of mine workings
4. Geological report by Geoprofessional Services, Inc.

Also attached is a copy of a letter from the Chairman of the Operating Committee with relevant memoranda from James W. Pennington and N. E. Nelson.

A field examination and suitable report are requested.

W. M. Traver
W. M. Traver

Enclosures

HMC:ab
cc: Sec. Op. Comm. (2)
Docket 3937
Harshman
Chron.

400

DOCKET
Surname:
Chapman
Selfridge

AUG 31 1955

Mr. W. M. Traver, Executive Officer
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA 3937, Mercury
International Ore Corporation
Pine Mountain Mine
Maricopa County, Arizona

Dear Mr. Traver:

The above docketed application for exploration assistance is being referred to your office for a field examination of the property.

Two copies each of relevant memoranda, one dated August 8, 1955, by N. E. Nelson, Geological Survey, and the other dated August 15, 1955, by James W. Pennington, Bureau of Mines, are enclosed for your information.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (GCS)

Enclosures

APPROVED:

P. F. Yopes (PFY)
Member, Bureau of Mines

Thor H. Kiilsgaard (THK)
Member, Geological Survey

cc: Docket
FT, Region 3
Code 400
Adm. Read. File
Oper. Committee
Thor Kiilsgaard, USGS
H. M. Meyer, USBM

TLChapman/ls
8/29/55

R.C.S.

DOCKET
Surname:
Chapman
Kulsgaard
Selfridge
Yopes

400

AUG 31 1955

International Ore Corporation
Box 1091
Wickenburg, Arizona

Re: Docket No. DMEA 3937 - Mercury
Pine Mountain Mine
Maricopa County, Arizona

Gentlemen:

The above-docketed application for exploration assistance for mercury ores has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration and referred to Mr. W. M. Traver, Executive Officer, DMEA Field Team, Region III, 224 New Custom House, Denver 2, Colorado, for a field examination of the property.

Any assistance that you can give the members of the Field Team will be appreciated.

Sincerely yours,

Administrator

TLChapman/ls
8/29/55

cc: Docket
Adm. Read. File
Code 400
Oper. Committee
Thor Kiilsgaard, USGS
H. M. Meyer, USBM
Field Team, Region 3

Docket

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
AUG - 9 1955

August 8, 1955

Re: DMEA 3937
International Ore Corp.
Pine Mountain Mine
Maricopa Co., Arizona
$44,948 - Mercury

Copy retained 400

WSM

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Application.

No information, other than that in the application, is at hand.

The rehabilitation and exploratory work proposed for this old mine would equip it with a new 150-foot shaft to the same depth as the old shaft and drive 400 feet of drifts.

Mercury has been produced from three zones, A, B, and C, all low grade but wide enough to permit low mining costs. "B" zone appears, from poor maps, to have been the most productive. It has been mined for a slope distance of 270 feet and a length of 160 feet. In recent operations ore running 3.17 pounds to the ton has been handled largely from the B zone.

Ore reserves. The reserves as calculated by the consultants are probably very much on the optimistic side, inasmuch as the zones are projected far beyond their known bottom points and the lengths taken appear unproven. The grades assumed, 0.19% for A and 0.2% for B and C zones are not well established, but may be realized. Three samples averaging 0.16% mercury are taken as representative of a 25,000-ton calcine dump, and from retreating a net profit of $295,258.60 is predicted.

An inspection for the purpose of checking some of the assumptions is indicated. If the suppositions are reasonably in line the project has considerable merit.

Referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

August 15, 1955

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: J. W. Pennington, Branch of Base Metals

Subject: Review of DMEA application, Docket No. 3937 (Mercury) International Ore Corporation, Sunflower Mining District, Maricopa County, Arizona

This appears to be more of a development than an exploration project.

The proposed exploration drift shown on page 19 of the Geologic report does not appear justified. No evidence is given that a favorable formation will be encountered.

All estimated costs are acceptable except those of mining and processing the ore which appear low. In addition, the value of mercury is high, as the present value is about $255 a flask.

It is recommended that a Field Team examination be made of the property to determine if the proposed exploration is the best and necessary method.

James W. Pennington

James W. Pennington

Copy to: Division of Minerals
Branch of Base Metals
H. M. Meyer
F i l e s
Thor H. Kiilsgaard, Room 5222

August 5, 1955
Subject: DMEA-3937
Re: Exploration Assistance
Pine Mountain Mercury Mine

International Ore Corp.
Box 1091
Wickenburg, Arizona

Gentlemen:

The receipt of your application dated July 25, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3937. and referred to the Iron and Ferro-Alloys Division.

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

60932

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

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APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 3937
Metal or Mineral Mercury
Date Received 8-4-55
Estimated Cost $44,948
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: International Ore Corporation, Box 1091, Wickenburg, Arizona.

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized. (Page 1)

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. (Page 1)

(*d*) If a partnership, add to the above statement the names and addresses of all partners. (Page 1)

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract The property desired to be explored by International Ore Corporation consists of 21 mining lode claims situated in the Sunflower Mining District, Maricopa County, Arizona. Said claims are all unpatented claims and are in the Tonto Forest Reserve. (Continued on Page 1)

(*b*) State any mine name by which the property is known. (Page 1)

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Five mining lode claims registered as Turnbull #1, through Turnbull #5 (Continued on Page 1)

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it There are no liens or encumbrances against the 21 mining lode claims previously described (Continued on page 1)

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. (Page 1) (Page 2)

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. (Page 2)

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. (Page 3)

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. (Page 3)

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. (Page 4)

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power. (Page 4)

5. *The exploration project.*—(a) State the mineral or minerals for which you wish to explore Mercury - found in three states on this property, in cinnabar, metacinnabar (Continued on page 4)

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. (Pages 4 & 5)

(*c*) The work will start within five days and be completed within four months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. (Page 5)

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

[X] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated July 1, 1955

International Ore Corp
(Applicant)

By Odell Simpson Pres

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.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

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1. (b) International Ore Corporation, a Delaware corporation, authorized to do business in the State of Arizona.

(c) David W. Simpson, President, Box 1091, Wickenburg, Arizona.
Tom H. Donaldson, Vice-President, 1011 E. Kirby Street, El Paso, Texas.
Jesse H. Lochausen, Jr., Secretary-Treasurer, 2427 Arizona Street, El Paso, Texas.

(d) A corporation, not applicable.

3. (a) (Continued from Form MF-103) The 21 claims are contiguous and lie Southwesterly from Pine Mountain on Sycamore Creek.

(b) The property is most commonly known as the Pine Mountain Mercury Mine.

(c) (Continued from Form MF-103) and also registered as Mercury #11 through Mercury #15, were purchased by D. W. Simpson from George Cline. Copy of this contract is attached. Sixteen (16) claims are owned and controlled by International Ore Corporation by virtue of location and occupancy for nine (9) months. These claims are legally described as Mercury claims one (1) through ten (10) and sixteen (16) through twenty-one (21). The five (5) other mining lode claims were acquired by purchase contract between D. W. Simpson, purchaser and George Cline, seller. A copy of said contract is attached and captioned exhibit "a". Said contract calls for the delivering of eight (8) mining lode claims, however, upon proper survey said contract delivered only five (5) claims known as Turnbull #1 through Turnbull #5. There is no dispute between seller and purchaser and said claims are known by virtue of an agreed upon relocation Mercury #11 through #15. D. W. Simpson as purchaser was acting as an individual, however, he represented himself and Tom H. Donaldson and Jesse H. Lochausen, Jr. in a joint venture. The contract executed between Mr. Simpson and George Cline has been assigned in its proper proportions to Tom H. Donaldson and Jesse H. Lochausen and transferred into International Ore Corporation in exchange for the proper portion of common stock of said company. All discovery work and assessment work on all twenty-one (21) mining lode claims have been accomplished for the mine year 1955.

(e) (Continued from Form MF-103) other than the royalty payable to George Cline, as per the attached contract.

(f)

NAMES OF CLAIMS	BOOK-DOCKET	PAGE
Turnbull	1161	3
Turnbull #1	1161	1
Turnbull #2	1160	599
Turnbull #3	1160	600
Turnbull #4	1161	2
Turnbull #5	1186	3
Turnbull #6	1186	551
Turnbull #7	1186	552
Turnbull #8	1186	553

NAMES OF CLAIMS	BOOK-DOCKET	PAGE
Mercury 1	1405	435
Mercury 2	1405	436
Mercury 3	1405	437
Mercury 4	1405	438
Mercury 5	1405	439
Mercury 6	1405	440
Mercury 7	1479	330
Mercury 8	1405	441
Mercury 9	1479	331
Mercury 10	1405	442
Mercury 11	1404	265
Mercury 12	1404	266
Mercury 13	1404	267
Mercury 14	1404	268
Mercury 15	1404	269
Mercury 16	1479	332
Mercury 17	1479	333
Mercury 18	1479	334
Mercury 19	1479	335
Mercury 20	1479	336
Mercury 21	1479	337

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4. (a) Mercury has been mined at Pine Mountain periodically for over fifty years. In 1942 Midco Reserve, Inc., who then owned the property, installed a 50-ton Gould Rotary Kiln with all necessary accessories. Midco operated this property until June, 1944, at which time operations ceased for the following reasons:

(1) Mercury had dropped to $125.00 per flask, which made this operation economically unsound.

(2) Qualified labor was not available because of World War II.

(3) The Mine Inspector of Arizona condemned the shaft at the time of closing.

There was no activity of any nature at Pine Mountain from 1945 until July, 1954, at which time International Ore Corporation started rehabilitating this property.

Mining is presently being conducted on a two shift per day basis and work is in progress in two adits. Removal of hazardous loose debris in a large area above the South portal is now under way. In the South adit the present work face is so close to old surface workings that considerable timbering is necessary. By going underground with the projected new shaft, the present hazardous condition will be avoided and ore mined will be of higher quality and can be mined more economically.

International Ore Corporation, from the study of old maps, from the operational history, and from people who worked on this property during the early 1940's, has every reason to believe that the ore grades will become better with depth. At present ore grades are running .20 % and higher. Known ore grades at depth exceed 1%, but the quantity cannot be determined except by such an exploration program as hereinafter outlined.

All phases of the above are covered in the Geologic Report attached, prepared by Geoprofessional Services, Inc., Salt Lake City, Utah.

The mill operates 24 hours per day. At present the mill feed is approximately 50 tons of ore per day and recovery is approximatly 90%.

International Ore Corporation owns all twenty-one (21) mining lode claims either by virtue of the attached contract listed in 3a above or by virtue of relocation and said company is the operating company.

Mine workings are situated within 50 feet of an existing road and may readily be examined. See exhibit "b" attached to substantiate the existing mining equipment and production facilities. Same does include an inventory of the camp site which is seven tenths of a mile Northeasterly from the mine.

(b) Records for the period from 1942 through 1944, when the property was operated by Midco Reserve, Inc., are not available, however, it is known that an R.F.C. loan in the amount of $30,000.00 was paid off and that the owners received an adequate profit on their investment. Reference is again made to the production record which is a part of attached report prepared by Geoprofessional Services, Inc. on page 10, 11, 13, 14, 15 and 16. Ore reserves are on page 17 of this report.To further supplement this report the records of International Ore Corporation are listed below:

INTERNATIONAL ORE CORPORATION
P. O. Box 1091
Wickenburg, Arizona

Monthly Report

Date	Tons	Hg total	Mill Hours Operated	Flasks shipped
January	Snow until February 12			
February	445	1236 lbs. 8 oz.	220.5 hours	16
March	978	2155 lbs. 13 oz.	508	29
April	960	1920 lbs. 14 oz.	472	21
May	1078	2521 lbs.	524	33

(c) The geological features of the property, including mineralization type of deposit (vein), are all included in the attached Geological Report prepared by Geoprofessional Services, Inc.

A map of the layout of the 21 claims is on page 5 of this report. Page 12 of this report is a detail map of the mineralization at Pine Mountain and page 19 is a three dimensional map of proposed exploration, which will include a two-compartment vertical shaft and drifts.

Presently it is the wish of International Ore Corporation that a DMEA loan be granted for the sinking of this vertical shaft to a depth of 150 feet. 400 feet of properly engineered drifts will be necessary in this exploration program.

Figure 2 page 13 of Geologic Report shows a graph of the average grades of ore mined by International Ore Corporation through March 1955.

Assays since April 15, 1955

Date	Mercury
April 15	.02
April 22	.18
April 27	.15
April 30	.16
May 3	.17
May 4	.14
May 11	.17
May 15	.23
May 19	.36
May 16	.45
May 23	.34
May 25	.35
May 31	.41
June 2	.31
June 4	.32
June 9	.30
June 14	.29

(d) The property is accessible by road over an Arizona State Highway known as the "Bush Highway", which starts approximately seven miles East of Mesa, Arizona. The turnoff to Pine Mountain is seven miles Northeast of the Sunflower Store, which is a total of approximately forty-nine miles on the said Bush Highway.

A private road to the Mine is 5.3 miles to the camp area. It is .7 of a mile from the camp area to the mine and mill site.

Pine Mountain Mercury Mine is 86 miles from Phoenix by road, Phoenix being the shipping and supply center for this operation. All flasks of Mercury are shipped from Phoenix.

(e) There is ample available manpower in this area for the present operation and for an expanded operation. Materials and supplies are available in sufficiency in Phoenix. Water is furnished from three natural springs situated on Sycamore Creek above the mine, mill and camp sites and all are gravity flow.

The equipment at Pine Mountain is in good condition, with most of the motors and powered units being either new or factory overhauled. Ample equipment is presently at Pine Mountain for the 50-ton operation. See exhibit "b".

5. (a) (Continued from Form MF-103) and native quick silver.

(b) The proposed work will consist of a two compartment vertical shaft of 150 feet, fully equipped and approximately 400 feet of drifts at levels as per attached map and as per three dimensional map on page 19 of the geological report. It is conservatively estimated that this work will develop in excess of 250,000 tons of ore, which will have a gross value of approximately $4,000,000, with a net profit of approximately $1,500,000 after it has

been mined and processed. See page 17 of report prepared by Geoprofessional Services, Inc. and note that the estimates given therein are based on 300 linear feet along the vein. At this point it should be mentioned that outcroppings exist on the property of International Ore along the same veins covering a linear distance of approximately 5,000 feet. With proper exploration, an almost inexhaustible supply of ore should be developed and a large tonnage lode mining operation installed.

(c) The work will start within five (5) days and will be completed within four (4) months from the date of an exploration contract.

(d) The operation will be supervised by David W. Simpson, President of International Ore Corporation, and by Melquiades Contrearas, Mining Engineer for International Ore Corporation.

Mr. Simpson has had continuous mining experience for twenty years, most of which has been in Mexico. He operated as D. W. Simpson, Inc. at Brownsville, Texas, from 1940 to 1949, shipping approximately 25,000 tons of iron ore and 3,000 tons of manganese ore monthly to the United States. Mr. Simpson owned and operated Minas Consolidados, Inc., a large manganese mine in the Barregos Mountains of Mexico, from 1950 to 1954, which shipped from 1,500 to 3,000 tons of manganese ore monthly.

M. Contreras has been a graduate mining engineer for twenty-five years, during which time he has actively worked many properties in Mexico and the United States.

It is the desire of International Ore to place this exploration project on an independent contract basis. After scrutinizing independent contractors in this area, it is the belief of International Ore Corporation that Ike KeCisco of Wickenburg, Arizona, is the most qualified and has given us the lowest bid. Mr. KeCisco has had considerable experience with shafts and drifts, having done many projects under DMEA supervision. He has done considerable work for the large mining companies in the State of Arizona.

6. (a) Estimate of costs are all based on an independent contract.

I Site preparation.		
(1) Bull dozing 32 hours @ $14.00	$ 448.00	
(2) Head frame & shaft collar	3200.00	
(3) Hoist 1-2 tons) including power unit	3000.00	
	$6648.00	$6648.00
II Vertical shaft to 150 ft.		
(1) 150 ft. shaft (vertical) to include all necessary timbering, etc. @ $130.00 per foot	$19500.00	
(2) 2 Station levels @ $1200.00 per	2400.00	
	$21900.00	$21900.00
III Drifts 400 ft.		
(1) Drifts @ $33.00 per ft.	$13200.00	
(2)		

(2) Timbering @ $8.00 per ft.	$ 3200.00	
	$16400.00	$16400.00
TOTAL COST		$44948.00

All other items included under No. 6 Estimate of Cost are not applicable.

7. Money will be furnished by International Ore Corporation as per your existing regulations.

M I N I N G C O N T R A C T.

KNOW ALL MEN BY THESE PRESENTS:

That George Cline, herein designated as the SELLER, and D. W. Simpson, herein designated as the BUYER, have this day entered into the following mining contract and agreement.

W I T N E S S E T H:

That the Seller hereby agrees to sell and deliver to the Buyer the hereinafter described mines and mining property for the purchase price hereinafter mentioned and upon the terms and conditions hereinafter set forth.

The said mining property is described as follows, to-wit:

All those certain unpatented lode mining claims situate in Sunflower Mining District, Maricopa County, Arizona, the respective names of which together with the Book and Page in the Office of the County Recorder of Maricopa County, Arizona, where the several notices of location are of record are as follows:

NAMES OF CLAIMS	BOOK-DOCKET	PAGE
Turnbull	1161	3
Turnbull #1	1161	1
Turnbull #2	1160	599
Turnbull #3	1160	600
Turnbull #4	1161	2
Turnbull #5	1186	3
Turnbull #6	1186	551
Turnbull #7	1186	552
Turnbull #8	1186	553

Together with all of the improvements and equipment thereon and all of the mining rights allowed by law, and has and used therewith.

The purchase price agreed upon is TWO HUNDRED THOUSAND DOLLARS, which purchase price the buyer shall have the option of paying in installments, within five years from date hereof, by paying to the seller a royalty of ten per cent of the net sale price for and from all ores or products thereof produced and sold from the said property until the full purchase price shall have been paid, settlement for royalty shall be made on or before the

tenth day of each and every month for all ores or products thereof for which the buyer shall have received settlements, and the buyer shall accompany each settlement with a copy of the settlement sheet covering the ore or products thereof sold and settled for.

If the total purchase price be not paid within five years and the buyer shall be diligently working the said property the term of this contract may be continued for an additional term provided the buyer shall diligently operate the said property.

The buyer shall have the immediate possession of the said property with the right to work, develop and operate the same in such manner as he may see fit and mine and dispose of the ores therefrom, subject only to the payment of the royalty above provided for, and in strict accordance with the mining laws and the rules and regulations of the State Mine Inspector.

It is agreed that all work shall be done in a miner-like manner and with due regard to the future operation of the mines, and no working or development places shall be closed up or filled with waste so long as same may be of use in mining and operating the said property.

The buyer agrees that he will keep true records of all development work and will provide the seller with copies thereof upon reasonable request.

The Seller reserves the right of inspection at all reasonable times, either in person or by agent or attorney.

Should the buyer decide to abandon the property he shall leave the same in a safe condition and shall not remove any permanent improvements therefrom, or remove anything that will leave the mine in an unsafe or dangerous condition, and will pay or cause to be paid all royalties that may be due at time of the abandonment of the property.

In case of abandonment by the Buyer he shall be under no obligations than above mentioned, however, all moneys paid to the seller, on account of royalty or otherwise shall be and remain the property of the seller as reasonable rental value and liquidated damages for breach of the purchase contract.

In case of invasions, revolution, strikes, storms, acts of God, or other causes beyond the control of the buyer he may be excused from operation until such cause be removed, otherwise he agrees to reasonably continue operation of the said property as a producing mine.

The Buyer agrees to post and keep posted such non-liability notices as the Seller may furnish, and to advise all persons furnishing labor, materials and supplies that the property is being operated under contract and that neither the owner nor the said property shall be liable for anything furnished the buyer as operator of the mines.

This contract may be assigned to responsible parties, however, due notices in writing must be given the other party hereto.

The contract shall extend to the heirs, administrators, executors and assigns of the parties hereto.

WITNESS the Seller and Buyer this 16th day of June, 1954.

George Cline - signed
Seller

D. W. Simpson - signed
Buyer

State of Arizona)
: ss.
County of Maricopa)

This instrument was acknowledged before me this 16th day of June, 1954, by George Cline and D. W. Simpson.

My commission expires 6/23/54.

J. E. Russell - signed
Notary Public

(NOTARIAL SEAL)

EXHIBIT "B"

INVENTORY

CAMP

1 Combination Dining Room & Kitchen Building 14' x 36'
Containing - 1 - 5' x 7' 500# Cap. Ice Box
1 - 11 cu. ft. Servel kerosene Refrigerator
1 - Cook stove
1 - Dining Tabel
2 - " " benches

1 Store Room for groceries - 11' x 12'

1 Cabin for cook 12' x 15' - 1 room
1 " " employees 22' x 23' - 2 B & Kitchen
1 " " " 12' x 15' - 1 room
1 " " " 12' x 15' - " "
1 " " " " " " "
1 " " " " " " "
1 " " " 12' x 23'- 1 B & Kitchen
1 " " " 12' x 15'-1 room
1 " " " 14' x 14'-1 room
1 " " " 12' x 23'-1 b & Kitchen
1 " " " 10' x 27'-1 b & kitchen
1 " " " 12' x 23'-1 b & kitchen
1 " " " 11' x 12'-1 room
1 " " " 12' x 23'-1 b & kitchen

Adequately furnished and in use.

MINE

1 Mine run storage bin (wood) 25' long x 5' wide x 4' high

1 Mine compressor building 16' x 18' - sheet metal
Containing 1-D11000 - 6 cyl. caterpillar power unit operating by belts
1-Sullivan 315 cu. ft. compressor

1 Water storage tank 8' dia x 12' high

1 Fuel Oil Storage Tank - 9' dia x 8' high

1 Hoist Building - 20' x 25'

1 Building 12' x 53' - Housing - Miners Change Room 12' x 28'
Office 12' x 19'; Grinding Room 12' x 16'

1 Steel Head Frame 30' high

1 Building 10' x 31' - Housing Repair Shop 10' x 19' and tool & parts storage 10' x 12'

1 Circular Saw & Bench for Mine Timber Belt driven by U. S, Elect Motor - 3 H.P.
Serial 137188

2 Fuel Oil Storage Tanks for Mill 5000 Gal. Cap. each.

1955 Chevrolet Pickup.

MILL

1 25 ton (wood) Coarse Ore Bin

1 Cedar Rapids Jaw Crusher 10"x12" Belt driven by Sterling Motor 20 H.P. Serial 42772 with Magnetic Starter Box.

1 Conveyor 91' long - 15" 4 ply belt on 12 troughing rolls and head & tail pulleys powered by 3 H.P. Sterling Motor.

1 Mill Building 25' x 70' Housing 1 - 40 ton crushed ore steel bin.

1 50' x 3' dia. Gould Kiln driven by 3 H. P. Sterling Motor with speed variable control. Serial K19175 operating A #22W Foote Bros. Speed Reducer.

1 Automatic Stoker operated by Sterling Speed Control Motor - 2 H.P. Ser. 42238.

1 Dust collector unit from Kiln to Condensers operated by 24" fan belt driven by Sterling Speed Control Motor - 5 H.P. Ser. 37640.

14 Condenser Tubes - steel - with 8 dual collectors.

2 Condenser Tanks - redwood- 12' x 20' each.

1 Elect.Switchboard 3' x 6' with controls for all power units & lights - 440V & 110V.

1 Gould Recirculating Pump Ser. 177A118 Belt Driven by 2 H.P. 440V. Motor.

1 Unit Fuel Oil Heater & Controls Chromalok #K3150H.

1 Fuel Oil Pump direct connected to Sterling Gear Reducer Motor ½ H.P. Ser. 43092.

1 Power House Building 17' x 17' Housing D13000 58K.W. Alternator driven by Caterpillar Engine - also 1 - Ingersol - Rand Compressor Type 30 - Ser. 29234 Belt Driven by 10 H.P. G. E. Motor.

1 Spare Motor for Kiln 3 H.P. Serial 43193.

GEOLOGIC REPORT ON THE
PINE MOUNTAIN MERCURY MINE
MARICOPA COUNTY, ARIZONA

Prepared by

GEOPROFESSIONAL SERVICES, INC.

Salt Lake City, Utah

GEOPROFESSIONAL SERVICES, INC.

April 14, 1955

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GEOLOGIC REPORT ON THE

PINE MOUNTAIN MERCURY MINE,

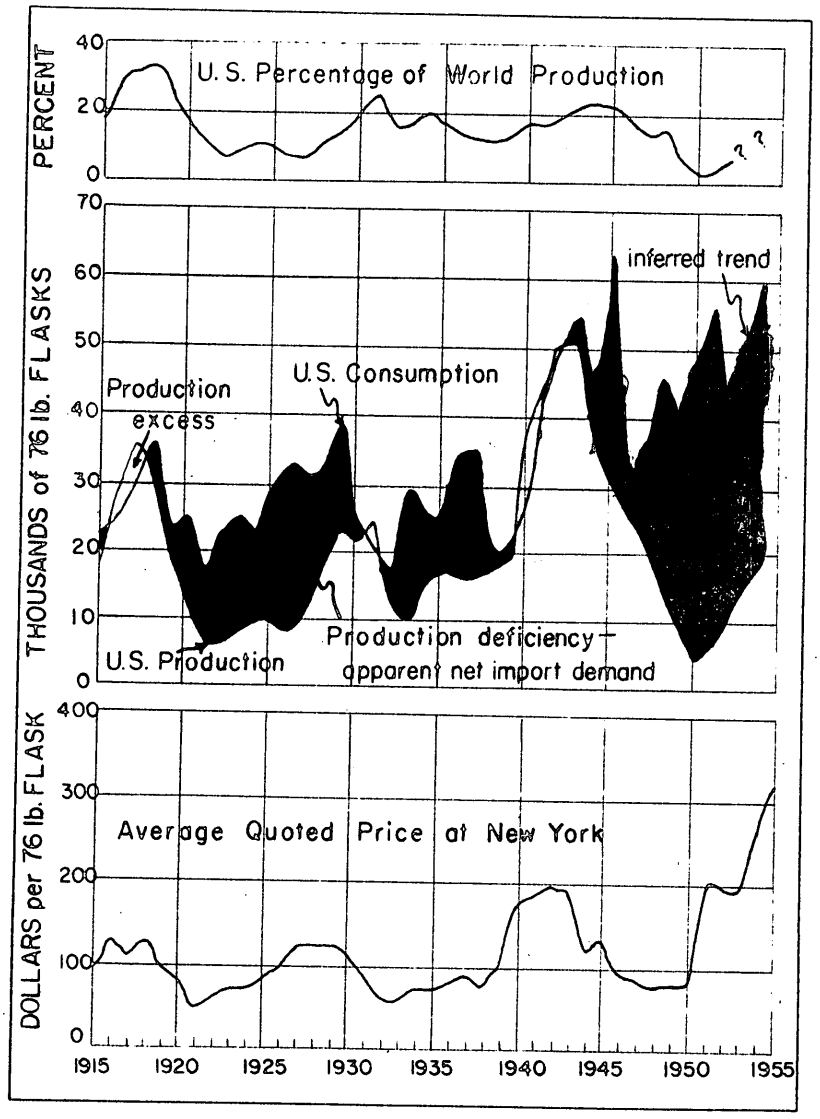
MARICOPA COUNTY, ARIZONA

FORWARD

Mercury is a silvery metallic element that remains liguid at ordinary temperatures. This property, together with the chemical nature, gives mercury a high military and industrial value, and it is a substance that cannot generally be substituted for by other metals. The uses of mercury are many, and they include applications in electrical apparatus and minute dry cell batteries for powering minature strategic devices such as the variable-time radio-proximity fuse. Other important uses are in agriculture, industrial and control instruments, electrolytic preparation of chlorine and caustic soda, pharmaceuticals, antifouling paint, catalysts, dental preparation, fulminate for munitions, and amalgamation. Many special uses are believed to be classified and apply to guided missiles, jet aircraft and the atomic energy program.

In recent years, more and more uses have been found for mercury, with a resultant increase in demand for the metal and a consequent increase in price (see Fig. 1). United States consumption of mercury far exceeds production. From 1948 to 1952, for example, the U. S. produced only 20.73% of the amount it consumed.

Note: The attached report is specifically not authorized for promotional or fund-raising purposes, in any form or for use in public offering circulars without our express authorization.



Trends in Production, Consumption, and Price of Mercury, 1915-1955

(From U.S. Bureau of Mines Minerals Yearbook)

Fig. 1

In July 1954, the General Services Administration announced a three year guaranteed-price program for mercury. According to the announcement, the program was designed to "broaden the mobilization base of the metal and increase its supply for defense and industrial purposes". A price of $225.00 per 76 lb. flask is guaranteed by the Federal Government under a specified buying program extending to Dec. 30, 1957. The present price of mercury, however, is about $320.00 per 76 lb. flask, and thus the price exceeds the guarantee. In view of the high present value of mercury and the government guaranteed price, mining and processing of relatively low-grade deposits is now possible.

GENERAL PROPERTY INFORMATION

A geologic investigation of the Pine Mountain Mercury Mine and surrounding claims was undertaken on the authorization of International Mercury Inc., owner of the subject property. The property is in Maricopa County, Arizona, in an unsurveyed area in the Sunflower Mining District, approximately 55 miles northeast of Phoenix. The area is accessible from Phoenix by proceeding east on U. S. Highway 60-70 or 80-89 a distance of 27 miles to the Payson-Bush Highway; thence northeasterly 52.5 miles (7.3 miles past Sunflower) on good gravel roads; thence 5.3 miles westward on a dirt road. Excessive snow and rain during January render the dirt road hazardous to vehicle travel.

The Pine Mountain property consists of 21 contiguous lode mining claims, known as the Mercury claims 1 to 21. All claims were surveyed in 1954, and assessment work for 1955 has been completed.

The mine camp facilities include 14 cabins, 1 kitchen and mess hall combined, and a shower room. Springs in the area supply ample water for the camp and for the mill and mining operation.

Elevations on the property average about 5500 feet. The terrain is mountainous and is transected by steep, youthful canyons. Stream flow is intermittant. Thick growths of pine, scrub oak, and various thorny bushes abound in the area.

GEOLOGY

The area is composed dominantly of a series of complex rock types, generally considered to be Precambrian. These were buried by extensive lava flows during Tertiary and Quaternary time, but subsequent erosion has, over most of the area, re-exposed the Precambrian rocks. On the property concerned, the regional strike of the rock units is N. 40° E., and the dip averages about 45° NW. However, the dip steepens locally, and some beds are almost vertical.

Precambrian Rocks

Slate. A marroon to purple slate crops out extensively on the property. It is highly contorted in some localities as the result of the intrusive action of rhyolite dikes and locally because of minor faulting and the gravitational creep effect of overlying rocks and debris. In some localities the slate is somewhat sericitized near its contact with sericite schist beds.

Sericite schist. In a few localities on the property, a brown to gray sericite schist crops out. It is in this schist that the mercury mineralization occurs. In most cases the sericite schist is found on the contact between slate and intrusive rhyolite. Subsurface observations show the schist to grade into the rhyolite, locally causing the rhyolite to be schistose. Thin beds of schist also occur in the rhyolite.

Rhyolite. Intrusive rhyolite, of a buff to gray color, covers a large area on and around the subject property. The rhyolite is porphyritic to felsitic in texture; in some localities it is somewhat schistose. Rhyolite flow structures are present in several places, and some dips ranging from about 15° to 75° were noted. High points, such as Pine Mountain, which are formed by rhyolite, contain a more massive, blocky rhyolite. In some localities the rhyolite is altered to a hematite-red color and to dark shades of yellow.

Meta-conglomerate. Relatively small beds of meta-conglomerate crop out on the property. The meta-conglomerate is well cemented and highly resistant to erosion. Fragments and pebbles within the unit range from pea size to about six inches in diameter. Because of their high iron content, they lend the meta-conglomerate a dark red to gray-black color. One outcrop was found to be sericitized. In some localities the meta-conglomerate approaches the appearance of a meta-breccia.

Tertiary-Quaternary Rocks

Volcanics. Erosion has mostly removed the Tertiary-Quaternary volcanic rocks from the property. The few remaining outcrops of these igneous rocks contain basic flow-type rocks, mainly basalt.

Faulting

Surface evidence and information obtained from an old map of subsurface workings indicate that a normal fault is probably present. The fault strikes northerly and is located in the mineralized area.

MINERALIZATION AND ORE OCCURRENCE

Mercury is an epithermal type deposit. Such deposits are formed near the surface by ascending thermal waters that are genetically associated with igneous rocks. The epithermal zone normally extends down to about 3,000 feet below the surface which existed at the time of ore deposition.

The Pine Mountain ore deposit was probably formed at the time of the Tertiary volcanic flows in the area. Remaining outcrops of volcanic rocks on the property indicate that only two or three hundred feet of the mineralized zone has been eroded.

Mercury mineralization on the subject property occurs in the sericite schist (not all the schist is mineralized). Sericitization of the schist and deposition of the mercury mineralization are probably closely related. Cinnabar (HgS), which contains 86.2 per cent mercury, is the main mercury ore mineral present, and it is easily identified by its vermilion-red color. At places it is inclined to have a brownish-red and lead-gray colors. A black modification of cinnabar called Metacinnabarite (HgS) is present, and other unidentified mercury ore minerals are probably present in portions of the mineralized rock that do not appear to be of ore grade. One such sample, taken at the surface, was assayed[1] and found to contain 0.14% mercury. There are some iron impurities and quartz veinlets in the mineralized zone.

1. All assays in this report were made by Crismon and Nichols, Salt Lake City, Utah.

In the surface deposits the cinnabar is disseminated through the schist. Two samples showing good cinnabar color were assayed and found to contain 0.44 and 2.46% mercury. However, the average grade of ore at the surface is estimated to be about 0.20% mercury.

The ore bearing zone is composed of three mineralized fissures, referred to as "A", "B", and "C" for convenience. On the surface level, "A" is 15.5 feet thick, "B" is 12 feet thick, and "C" is eight feet thick. Fissures "B" and "C" are about 10 feet apart; "A" and "B" are about 70 feet apart. From observable data, it appears that fissures "B" and "C" will converge within 100 feet of the surface and can be called fissure "B-C" below that level.

Where observed at the surface, fissures "B" and "C" are in sericite schist in which the mercury mineralization is widely disseminated. Fissure "A" is in a more compact quartz-bearing sericite schist, which grades into a schistose rhyolite on either side. The more compact nature of fissure "A" is probably due to its location well inside the rhyolite intrusive; whereas, fissures "B" and "C" are closer to the slate contact.

Old reports indicate that in the subsurface workings ore occurs in seams, and native mercury is present in association with quartz. One miner, who mined in the old workings 15 years ago, described breaking quartz rocks and watching the free mercury dribble off. A specimen containing free mercury was noted.

There is little doubt that the grade of mercury ore increases with depth insofar as observable. Such a condition is geologically feasible. At the time of deposition, the mineralizing solutions followed the easiest path of ascension, which was through the schist zone. In the upper portions, where the schist is less compact and more porous, the mineralized

solutions were widely disseminated. At depth, where the rock is more compact, the ore was concentrated in a somewhat narrower zone, with the result that the ore was deposited in seams.

Old milling records show that ore processed in 1943-44 (mined at depth) assayed from 0.30% to 0.60% mercury. There is one old mill record of 90 tons of ore containing an average of 1.25% mercury.

TREND OF MINERALIZATION

Slight mineralization has been encountered in a northeasterly direction from the ore zone. An early report states that an ore-bearing fissure has been traced for a distance of 7500 feet, but has not proved to contain continuous mineralization. This, however, was not verified at the time of property examination.

SURROUNDING PROPERTIES

In the general area, sporadic production has come from four other mercury mines. They are the Ord Mind, $2\frac{1}{2}$ miles southeast; the Rattlesnake Mine, $2\frac{1}{4}$ miles southeast; the Mercurio Mine, 1 mile southeast; and the Arizona Cinnabar, 4 miles northwest. The location of these mines in a northwest-southeast line suggests a mineralized trend in that direction. Further study of the area will be necessary to establish extensions of presently known mineralization.

OPERATION HISTORY

Since 1890 mercury has been periodically mined and processed from the Pine Mountain Mine. Until 1940, processing was solely by retort. The ore zone was "high-graded," and recovery was poor. Consequently, much good mercury-bearing rock was put in the calcine dump.

In 1940, plans were made for a 50 ton daily capacity mill, and by 1942 a complete installation, including a rotary furnace, was in operation. A vertical shaft was started, and by 1944 there were three working levels, and the shaft had reached a depth of about 230 feet. Because of the labor shortage caused by World War II, the operation was greatly handicapped from 1942 to 1944. Nevertheless, the operation retired a $30,000.00 R.F.C. loan during that period. In 1944, the mine shaft became inaccessible and work ceased at Pine Mountain.

The old operation closed down because of:

1. Labor shartage due to World War II.
2. Drop in the price of mercury.
3. Poor management - absentee management from Chicago.
4. Lack of professional help as proved by poor maps and charts, etc.
5. Poor supervision and unskilled help, resulting in crude mining methods.

In July, 1954, the present operators commenced rehabilitation of the camp, mine, and mill. The old shaft was found to be caved in. It was decided that because of extensive caving and lack of timbering, the cost of rehabilitating the old shaft and other workings was not warranted.

Engineers from the manufacturers of the reduction plant visited the operation and advised as to necessary adjustments. In October, 1954, the furnace was fired, and during the following two months, through trial and error, the owners learned to economically operate the mill (see Fig.2). Replacement and overhaul of parts and power units became necessary. An important step toward an economical operation was the installation of variable speed motors on the power units. Gauges were installed to assure a correct air-fuel ratio for the furnace. Key employees became familiar with the milling procedure, overcame various difficulties and established

a smooth, efficient operation.

Two adits were started, but much low-grade rock had to be removed in the operation. Some of it was milled. The ore grade that could profitably be utilized became lower, and it was ultimately determined that certain rock types containing no visible cinnabar color could be processed at a profit.

PRESENT OPERATION

Mining

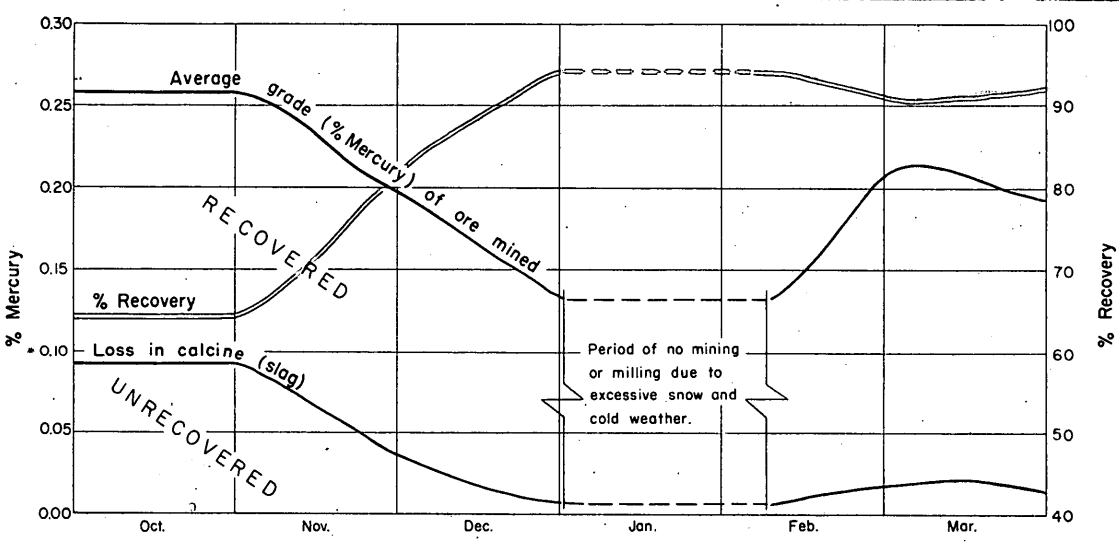
Mining is presently being conducted on a two shifts per day basis, and work is in progress in the two adits. Removal of hazardous loose debris in a large area above the south portal is now underway. Much of the debris is from fissure B (see detail map and block diagram), and this material contains sufficient mercury to warrant milling. In the south adit, the present working face is so close to old surface workings that considerable timbering is necessary.

Milling

The mill operates 24 hours per day. At present the mill feed is about 50 tons of ore per day. It is estimated that the present mill facilities are capable of a 50 per cent increase in capacity.

The graph in Fig. 2 shows that the recovery in the milling process is about 92% at the present time, compared to about 64% in late October, 1954. This increase in efficiency and operation indicates that ore containing 0.10% or more mercury can be profitably mined and processed at this installation.

Mud from condensation chambers is put in the retort for final extraction of mercury. A mud sample taken before retort processing was assayed and found to contain 39.20% mercury. After retort processing, a sample from the same tray contained 0.10% mercury, indicating a 99.74% recovery in the retort process.



* Results to date indicate that ore containing 0.10 %, or more, Mercury can be profitably mined and processed at this installation.

COMPARATIVE GRAPH SHOWING
(1) Grade of ore mined
(2) Increase in recovery efficiency
(3) Percentage of recovery

Fig. 2

At present, all machinery is in excellent condition. The mill personnel are thoroughly acquainted with the operation, and shut-downs should be at a minimum.

The present operation is a demonstrated sucess, due to: (1) The price of mercury is high and is government supported. (2) Ample help is available. (3) A mining engineer is on the job. (4) Mining and milling operations are closely supervised. (5) Efficiency in the milling operation is at a maximum.

PRODUCTION

Production has been somewhat sporadic because of temporary shutdowns and because of excessive snow and cold weather from December 15 to February 12. Figures from two recent periods of operation are available.

	Operating time	Tonnage handled	lbs. Hg recovered	value @ $320.00 per 76 lb. flask
Feb. 13-28	209 hrs.	445	1236	$5216.00
March 1-11	225 hrs.	440	1566	$6592.00

The average ore value during the recent operating period has, accordingly, been $13.35 per ton. At an operating cost estimated to be $8.50 per ton, this gives a profit of $4.85 per ton.

ORE RESERVES

The following reserves are calculated on an average dip of the mineralized fissures of 45 degrees, and an average length of 300 feet. Fissure B-C is assumed to have an average thickness of 12 feet over the projected depth of proven and probable ore. The thickness of fissure A is presumed to average 15.5 feet, which is its known surface dimension. It is also assumed that the 3rd level in the old workings at 225 feet below the surface is the bottom of the old workings. Though it is known that grade is improving at depth, it is best to maintain a conservative position and base ore values at depth upon values that have previously been proven. An average grade of 0.20% mercury for fissure B-C is thought to be quite conservative. Recent assays of fissure A have not been made because of the hazards involved in reaching the fissure through the old workings. Old assays of fissure A, however, show a 15.5 foot ore thickness containing an average grade of 0.19%

mercury, and this is presently accepted to be the grade of fissure A.

Proven Ore

From the top of the mineralized outcrop to the base of the old subsurface workings, there is an estimated 53,500 tons of proven ore, of which 23,500 tons is immediately recoverable, and an additional 30,000 tons recoverable with some mining difficulty.

The old calcine dump was measured, and contains 25,000 tons of mercury bearing material. The dump includes waste products from initial efforts in the history of the mine, when recovery methods were extremely primitive and recovery was correspondingly low. Three samples taken at different points on the dump were assayed and found to contain 0.16%, 0.28%, and 0.16% mercury. Therefore, an estimated average grade of 0.16% is very conservative, and this grade presently justifies reprocessing of probably the entire dump.

Probable Ore

It is geologically justifiable to project fissure B-C to a depth of 950 feet, which is merely doubling the depth which has already been demonstrated as containing commercial ore, and assume that the tenor of the ore will remain essentially indentical. There is, however, a possibility that the fissures will extend well beyond 300 feet in length.

Fissure A extends 50 feet higher than B and C. Accordingly, in calculating probable ore, fissure A is given a 1000 foot depth along dip, and would, therefore, contain a total of 387,500 tons. Fissure B-C is given a 475 foot depth (to take it down to 950 feet along dip) to give a total of 142,500 tons. The total of A and B-C is 530,000 tons, 50% of which, or 265,000 tons, may reasonably be classified as probable ore.

Possible Ore

It is very difficult to establish possible ore reserves on this property, but the structural control in the area observable is so pronounced that it can reasonably be inferred that the fissures will persist to a considerable depth. For the purposes of computation, an additional 950 feet along dip may be listed as possible ore. In fissure A there is 368,125 tons, 50% of which, or 184,063 tons, represents possible ore. In fissure B-C there is 285,000 tons, 50% of which, or 142,500 tons, may be classified as possible ore.

TOTAL ORE RESERVES

	Tonnage	Grade % Hg	Present in the ground value @ $320.00 per 76 lb. flask	Estimated operating cost per ton to mine and process	Total operating cost to mine and process	Net Profit **
PROVEN ORE						
Calcine Dump	25,000	0.16	$336,960.00	$ .50	$ 12,500.00	$295,258.60
Mine	53,500	0.20	901,120.00	$ 8.50	454,750.00	406,196.70
Total	78,500		$1,238,080.00		$467,250.00	$701,455.30
PROBABLE ORE						
Fissure A	193,750	0.19*	$3,095,680.00	$10.00	$1,937,500.00	$1,053,943.80
Fissure B-C	71,250	0.20	1,200,000.00	$10.00	712,500.00	443,625.00
Total	265,000		$4,295,680.00		$2,650,000.00	$1,497,568.80
POSSIBLE ORE						
Fissure A	184,063	0.19*	$2,945,008.00	$10.00	$1,840,630.00	$1,004,983.98
Fissure B-C	142,500	0.20	2,400,000.00	$10.00	1,425,000.00	887,250.00
Total	326,563		$5,345,008.00		$3,265,630.00	$1,892,233.98

** Based on a recovery figure of 91%

* Based on assays made during early 1940's.

GEOPROFESSIONAL SERVICES, INC.

REHABILITATION PROGRAM AND RECOMMENDATIONS

In view of the good ore at depth, indicated by subsurface data, it is recommended that work begin immediately on a new shaft. A two-compartment shaft seems sufficient to handle future production from the ore zone at depth.

The steel head-frame, which is presently above the old shaft, is in good condition. With a few minor repairs, it can be adapted for use on the new shaft.

New shaft construction should be undertaken while the 25,000 ton calcine dump is being re-processed. Since the dump is below the mill, installation of a simple conveyer system will be necessary to get the old calcine up to the crusher, where a re-run through the crusher is recommended. From there it will be a normal milling procedure. The initial runs of the calcine should be thoroughly checked to ascertain if there is any difference between processing of ore and re-processing the calcine.

In addition to re-processing the calcine, mining can be continued on the surface level. Also, as the block diagram indicates, the new shaft will pass through fissures B and C a few feet below the surface, and ore can be removed as shaft construction proceeds through these fissures.

It is recommended that work begin on the upper surface level (see block diagram). Complete removal of hazardous debris (most of which is ore grade) will be necessary in order to commence safely an adit into the old workings. This adit will connect with the old adit which transects fissure A. Considerable stoping has been done in the old workings in fissure B on that level, but some good ore remains and can be removed

if timbering is done. When a safe passage to fissure A is completed, mining of the fissure can commence. The fissure should be re-sampled and assayed to check those assays upon which the probable ore reserve figure for fissure A is based.

When shaft construction reaches a depth of approximately 45 feet, a drift should be driven to encounter fissure A, where it can be checked to see if it contains mineable ore at that depth. Judging by the cable calibrations on the old hoist, old levels are present at depths of 80, 150, and 225 feet. At about 130 feet, fissure A will be encountered in the shaft construction, and mining of the fissure at that level can commence if the grade of ore warrants it. At 225 feet, a drift should be driven to encounter and to take advantage of the workings of the old 3rd level, where good ore was encountered in the old operation. Also, a drift should be driven in the opposite direction to explore the possibilities of another ore-bearing fissure to the southeast.

When the mining procedure permits, work can be done to stope all the ore from the 3rd level up to the surface. In this operation, old workings will be encountered and the possibility of cave-ins will present a hazard. However, with correct supervision, such an undertaking can be successful. At all periods, the continuance of the operation should be contingent upon the assurance of profitable operation.

Below the 3rd level, mining will be in virgin territory. Levels should be every 100 feet, and stoping of fissures A and B-C can be conducted from these levels. Mining should continue at depth until the ore grade becomes unprofitable.

As the shaft operation continues, and probable ore achieves the status of proven ore, plans should be formulated to construct another mill installation in order to handle up to three times the present

tonnage and thereby take advantage of the present price.

Effort should be made to widen and to gravel the 5.3 miles of road from the camp and to the Payson road. This would assure a year around operation with no shut-downs due to winter weather conditions.

Further prospecting, exploration work, and sampling of schistose outcrops on the property is recommended to determine the possibilities of encountering more mineralization of ore grade.

Submitted by,

GEOPROFESSIONAL SERVICES, Inc.

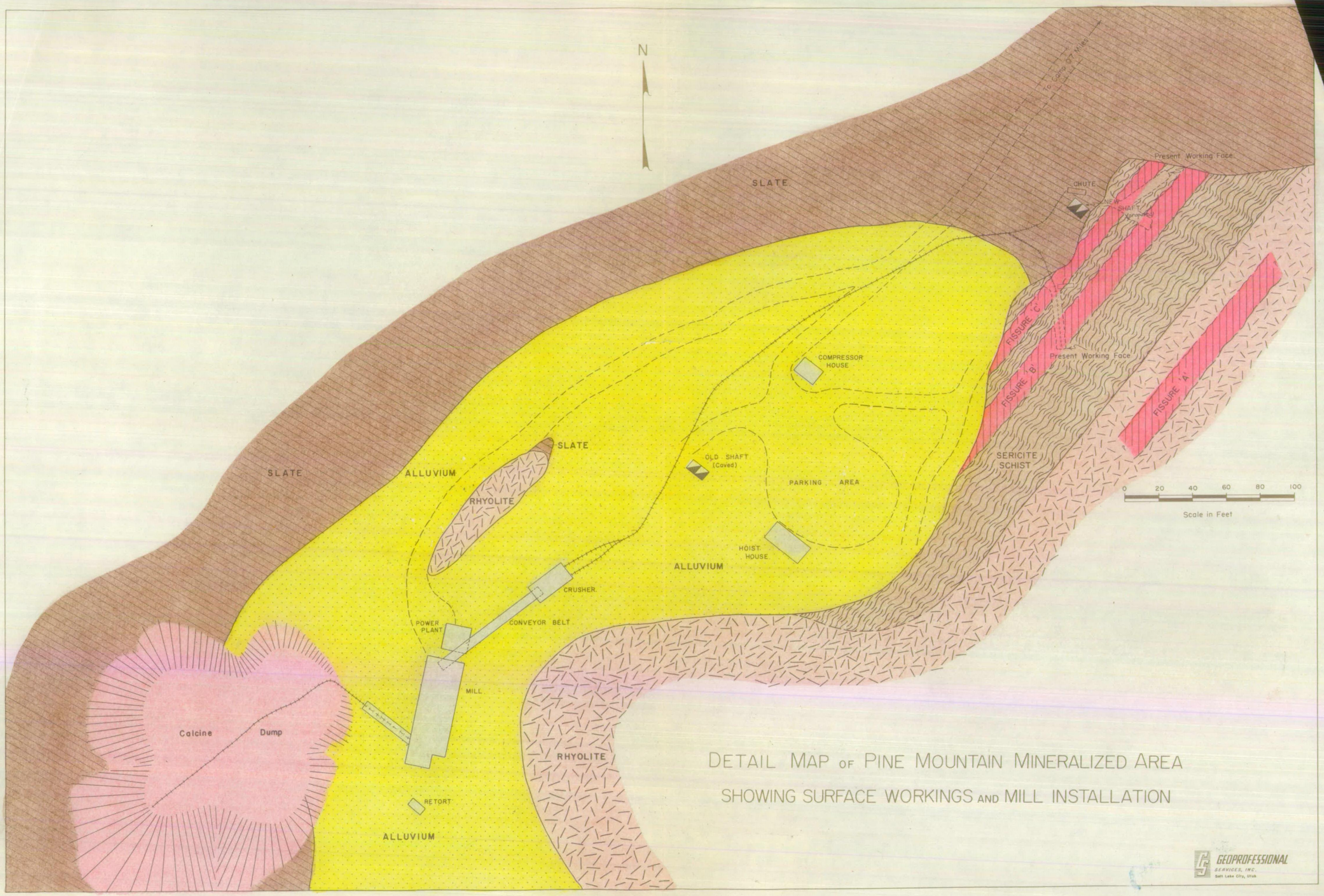
Norman C. Williams

Norman C. Williams

Warren L. Anderson

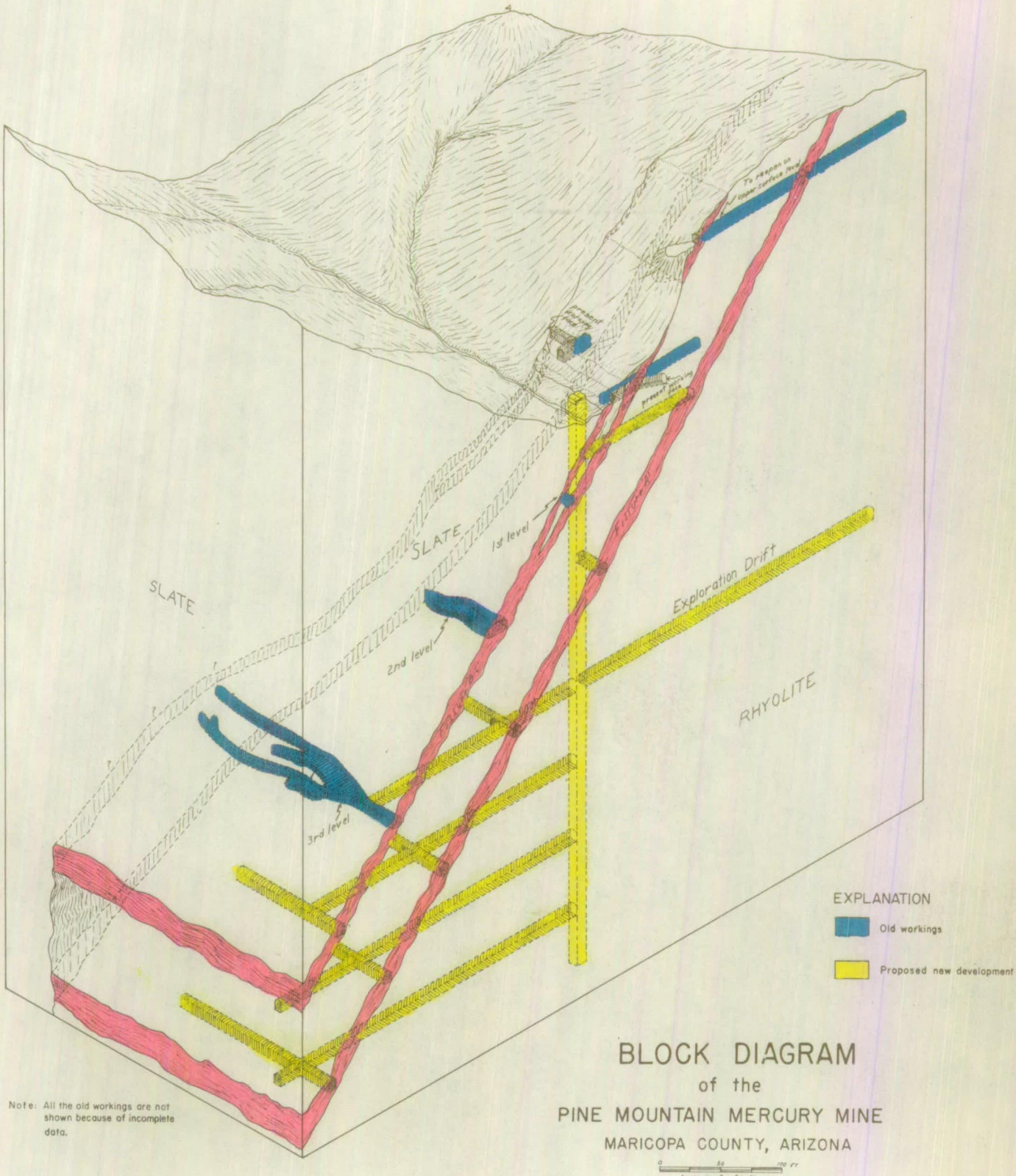
Warren L. Anderson

cj



DETAIL MAP OF PINE MOUNTAIN MINERALIZED AREA

SHOWING SURFACE WORKINGS AND MILL INSTALLATION

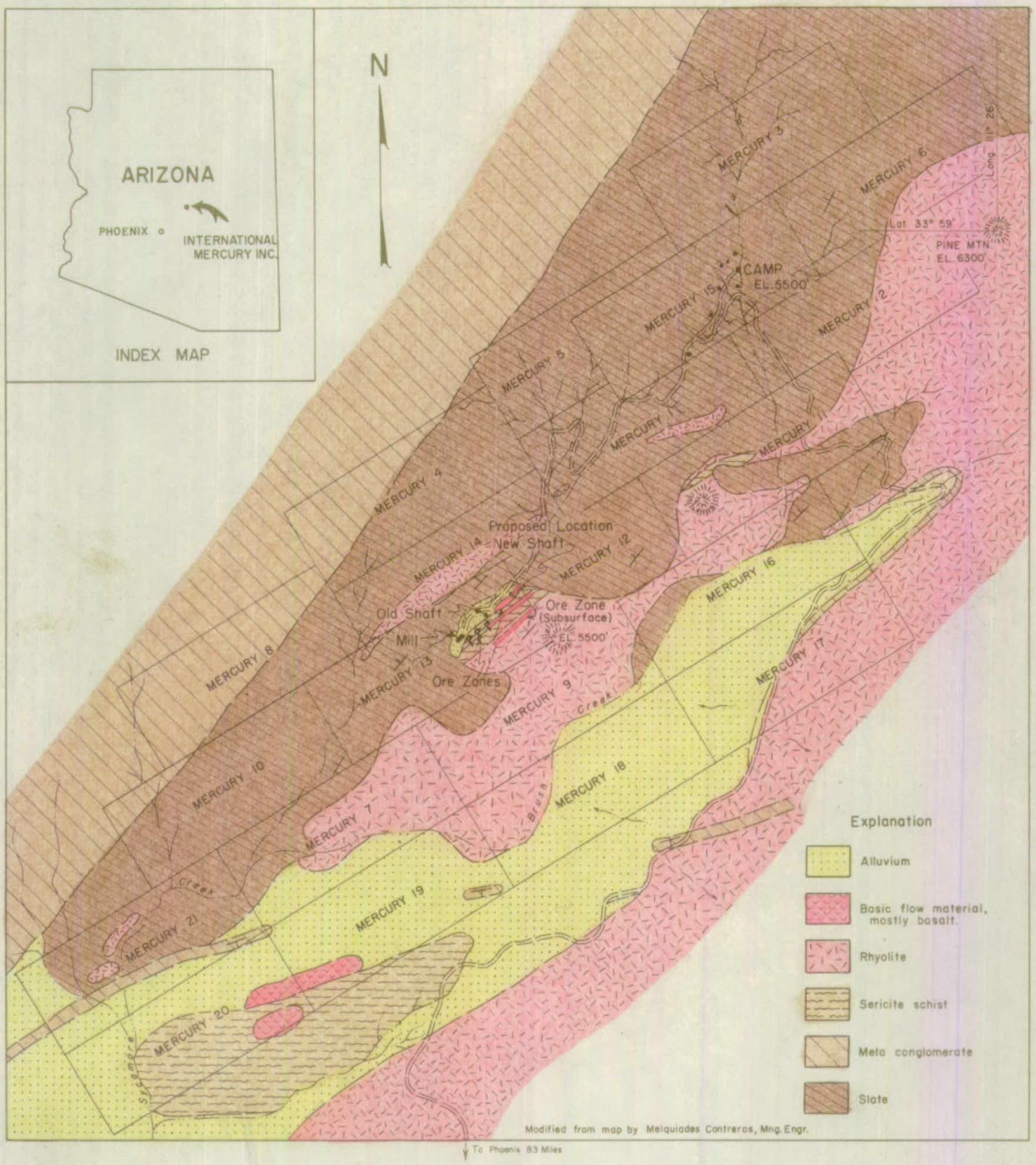


Note: All the old workings are not shown because of incomplete data.

BLOCK DIAGRAM
of the
PINE MOUNTAIN MERCURY MINE
MARICOPA COUNTY, ARIZONA

0 50 100 ft
Approximate Scale

GEOPROFESSIONAL SERVICES, INC.
Salt Lake City, Utah



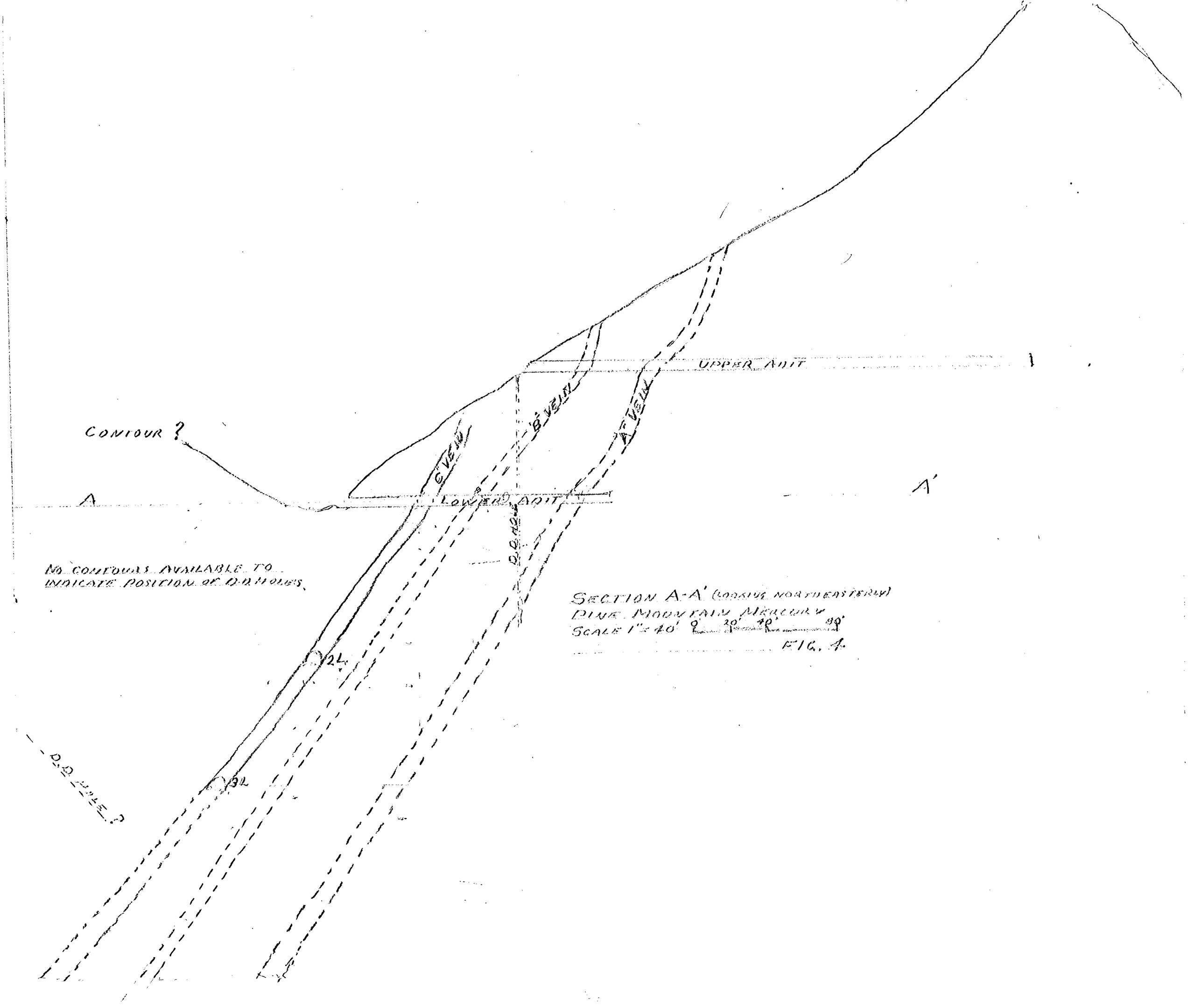
GEOLOGIC SKETCH MAP OF THE INTERNATIONAL MERCURY INC. PROPERTY

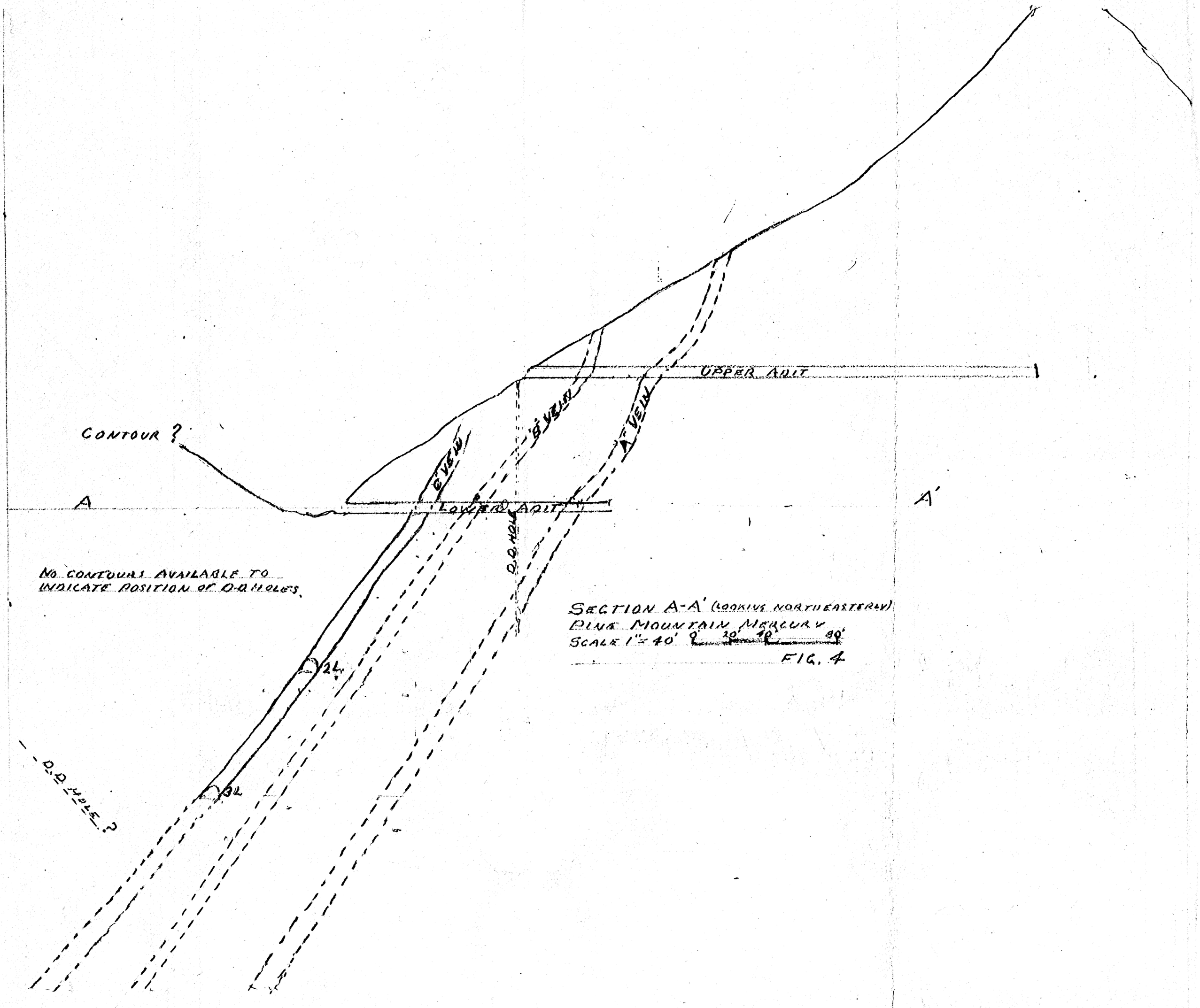
PINE MOUNTAIN AREA, MARICOPA COUNTY, ARIZONA

SCALE IN FEET

0 400 800 1200

GEOPROFESSIONAL SERVICES, INC.
Salt Lake City, Utah


UPPER ADIT
B VEIN
A VEIN
C VEIN
CONTOUR ?
LOWER ADIT
A
A'
NO CONTOURS AVAILABLE TO INDICATE POSITION OF D.D. HOLES.
D.D. HOLE
2L
3L
SECTION A-A' (LOOKING NORTHEASTERLY)
PINE MOUNTAIN MERCURY
SCALE 1" = 40'
0' 20' 40' 80'
FIG. 4



SECTION A-A' (LOOKING NORTHEASTERLY)
PINE MOUNTAIN MERCURY
SCALE 1" = 40' 0 20' 40' 80'

FIG. 4

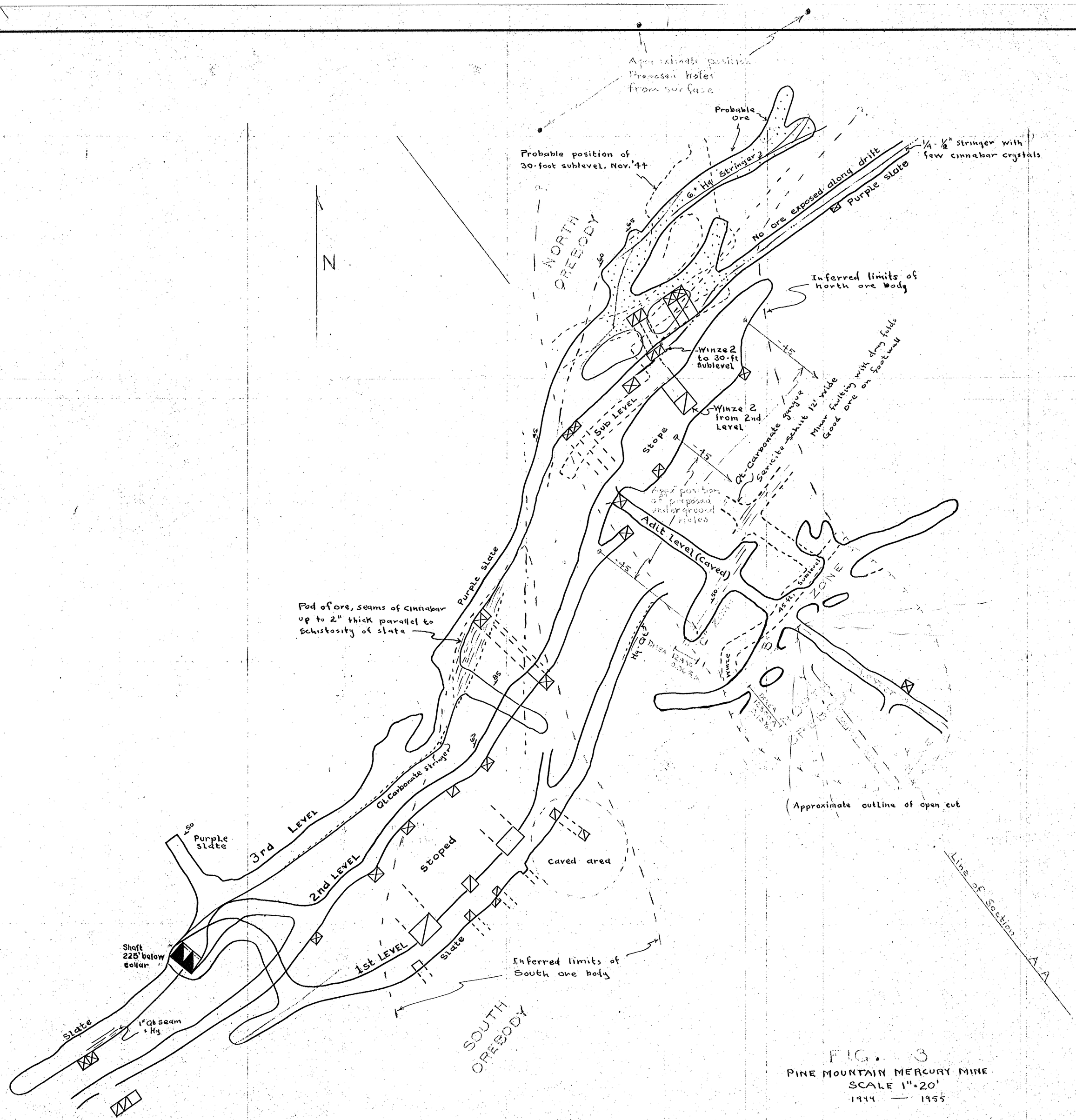


FIG. 3

PINE MOUNTAIN MERCURY MINE
SCALE 1" = 20'
1944 — 1955

Note: Traced from photostatic copy subject to additions and corrections. Original by C.A. Rasor, Aug. 19, 1999

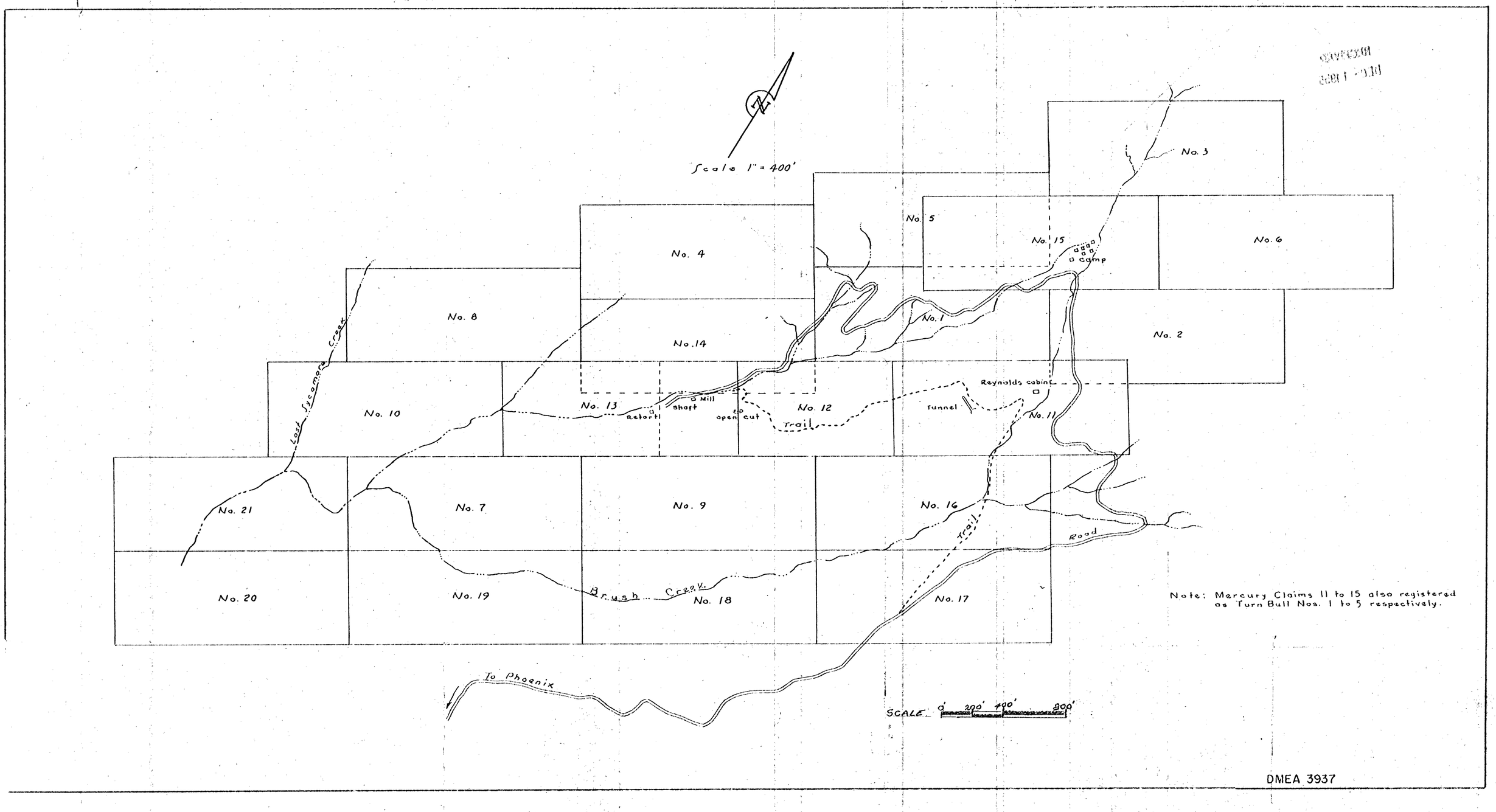


FIG.-2-CLAIM MAP, MERCURY CLAIMS 1-21, INTERNATIONAL ORE CORP, MARICOPA COUNTY, ARIZ.

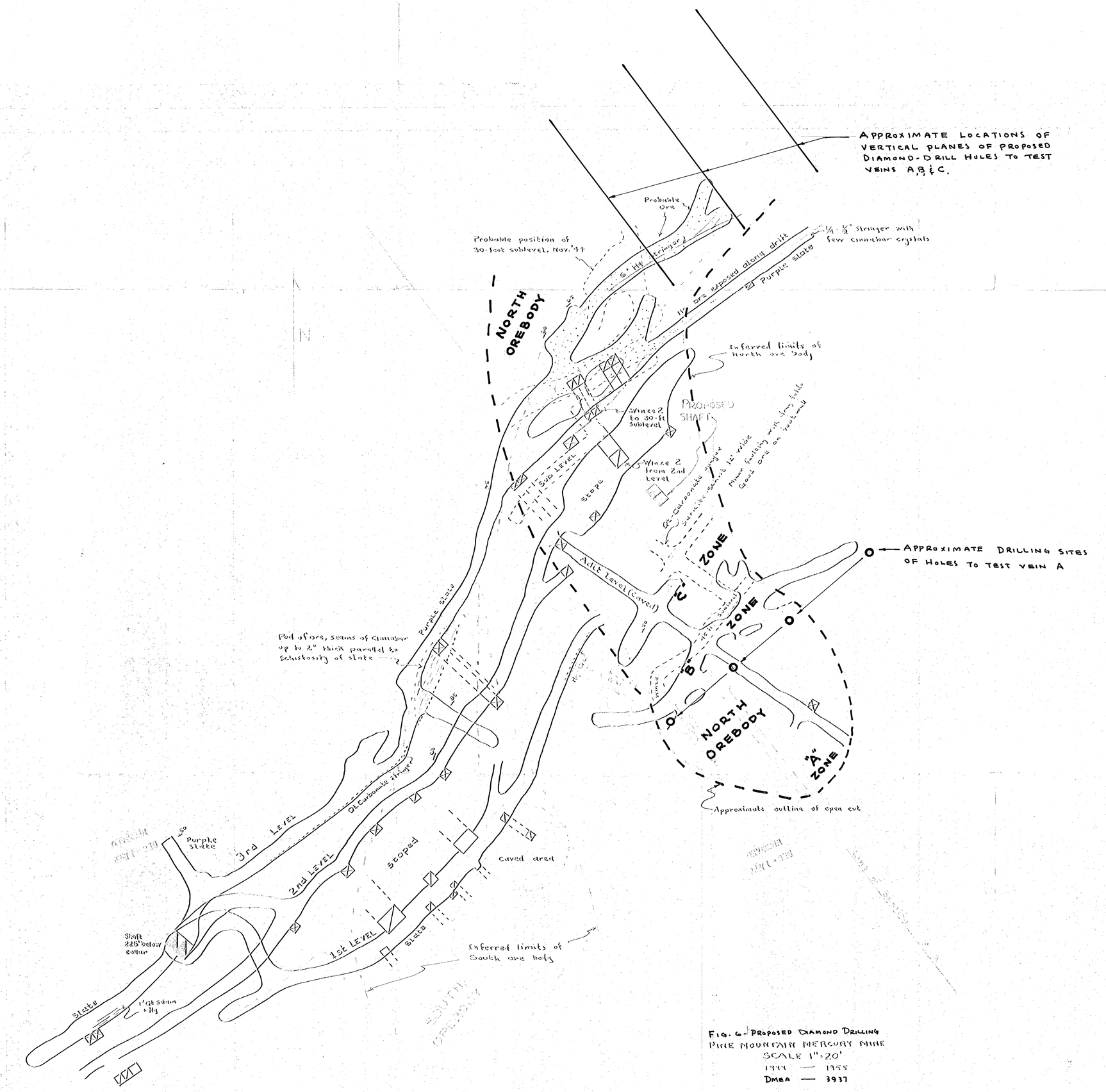


FIG. 6 - PROPOSED DIAMOND DRILLING
PINE MOUNTAIN MERCURY MINE
SCALE 1" = 20'
1944 — 1955
DMEA — 3937

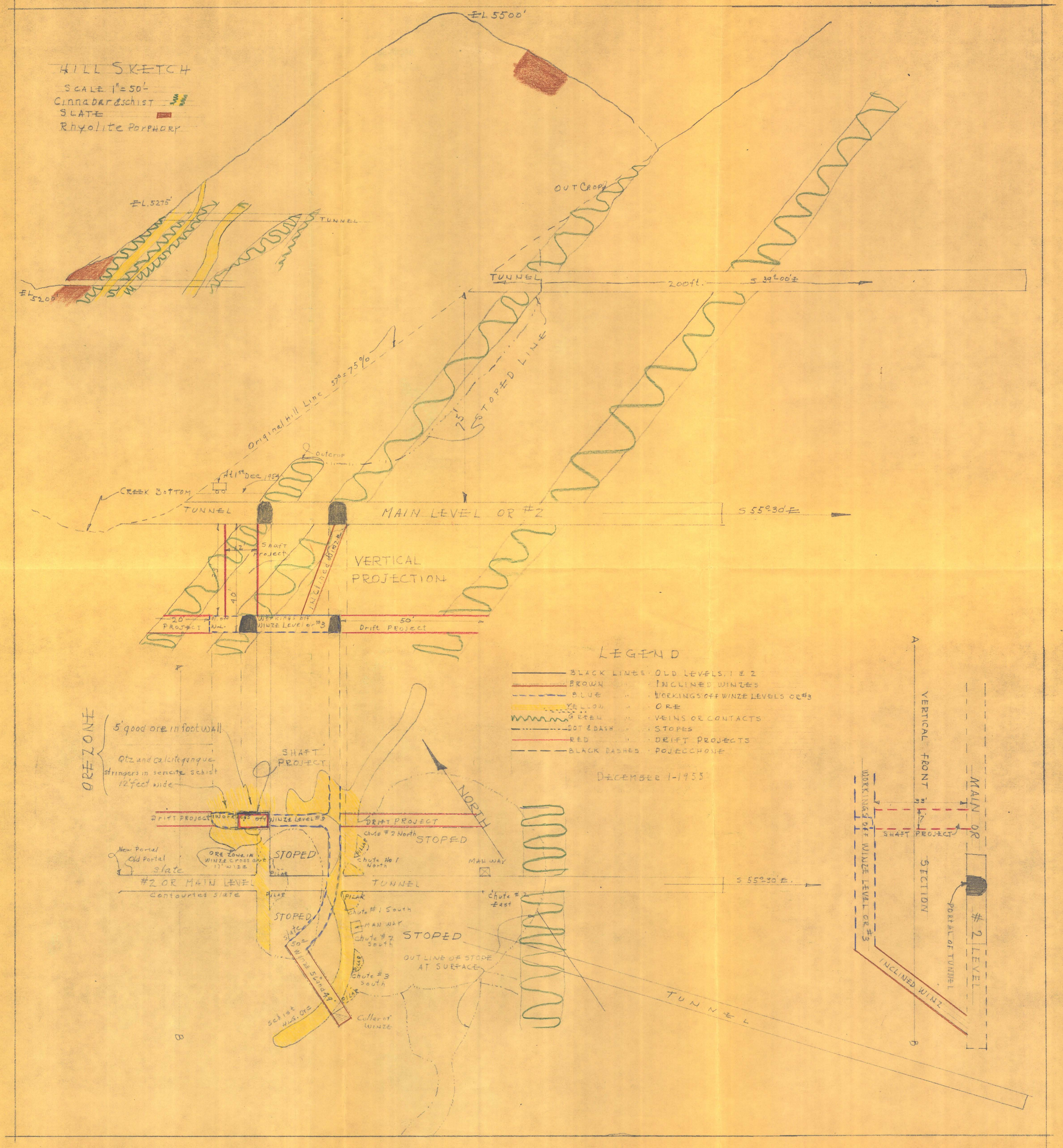
Notes traced from photostatic copy
Subject to additions and corrections.
Original by G.A. Bacon, Aug. 19, 1944

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

SCALE

DRAWN BY	ENGINEER	
CHECKED BY	DATE	
APPROVED BY	REVISED	MAP NO.

W. O. NO.


HILL SKETCH
SCALE 1" = 50'
Cinnabar & schist
SLATE
Rhyolite Porphory
EL. 5500'
EL. 5275'
EL. 5200
TUNNEL
OUTCROP
TUNNEL
200 ft.
S 39° 00' E
Original Hill Line 37° = 75%
STOPED
75'
Outcrop
At 1st Dec 1954
CREEK BOTTOM
TUNNEL
MAIN LEVEL OR #2
S 55° 30' E
Shaft Project
VERTICAL PROJECTION
Inclined Winze
35'
40'
20'
PROJECT
Winze
Workings off Winze Level or #3
50'
Drift Project
LEGEND
BLACK LINES · OLD LEVELS, 1 & 2
BROWN " · INCLINED WINZES
BLUE " · WORKINGS OFF WINZE LEVELS OR #3
YELLOW " · ORE
GREEN " · VEINS OR CONTACTS
DOT & DASH " · STOPES
RED " · DRIFT PROJECTS
BLACK DASHES · POJECCHONE
DECEMBER 1-1955
ORE ZONE
5' good ore in foot wall
Qtz and calcite gangue stringers in sericite schist 12' feet wide
SHAFT PROJECT
NORTH
Drift Project
Inclined Winze off Winze Level #3
DRIFT PROJECT
Chute #2 North
STOPED
New Portal
Old Portal
slate
ORE ZONE IN WINZE CROSS CUT 11' WIDE
STOPED
Chute No 1 North
MAN WAY
#2 OR MAIN LEVEL
TUNNEL
S 55° 30' E.
Contourted slate
Chute #2 East
STOPED
Chute #1 South
MAN WAY
Chute #2 South
STOPED
OUTLINE OF STOPE AT SURFACE
Chute #3 South
Collar of WINZE
TUNNEL
A
B
VERTICAL FRONT
MAIN OR #2 LEVEL
SHAFT PROJECT
WORKINGS OFF WINZE LEVEL OR #3
SECTION
PORTAL OF TUNNEL
INCLINED WINZ

INTERNATIONAL ORE CORPORATION'S

MINING CLAIMS

Situated to southwesterly from Pine Mountain, Maricopa County

STATE of ARIZONA, U.S.A.

LEGEND

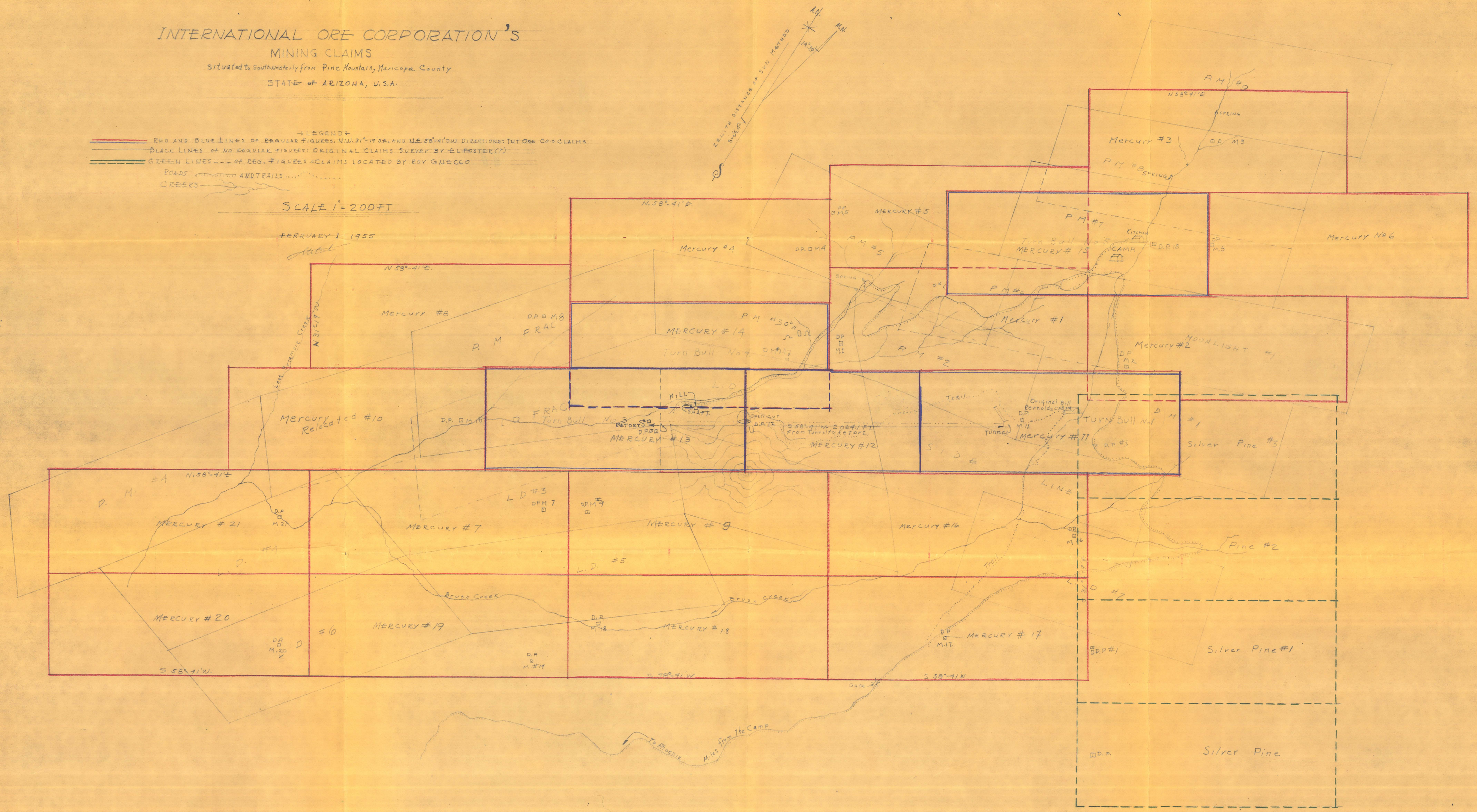
RED AND BLUE LINES OF REGULAR FIGURES, N.U. 31°-19' S.A. AND N.E. 58°-41' D.W. DIRECTIONS: INT. ORE CO.'S CLAIMS

BLACK LINES OF NO REGULAR FIGURES: ORIGINAL CLAIMS SURVEY BY E.L. FOSTER (?)

GREEN LINES - - - OF REG. FIGURES = CLAIMS LOCATED BY ROY GNECCO

ROADS AND TRAILS

CREEKS

SCALE 1" = 200 FT

FEBRUARY 1 1955