DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE Idm-E NO._____ DMEA NO. 4-770

Application
- [x] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [ ] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [ ] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and attachments

Right Side

- [ ] Project summary (final)
- [ ] Work Completed analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No._____: Reports
- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with transmittal, narrative and maps.

Folders No._____: Maps (Use pocket folder or envelope)

Folders No._____: Settlement Sheets

Folders No._____: Drill Logs

Folders No._____: Royalty material

17963

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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
1605 Evans Avenue
Reno, Nevada

June 25, 1957

Memorandum

To: Operating Committee, DMEA, Interior Bldg., Washington 25, D.C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Loan Application (Mercury)
Edward H. Haczela
Black Oak Mine
Sonoma County, California

Enclosed are three sets of MF-103, Application for Aid forms, relative to subject property. The fourth set has been retained in our files.

S. Ricker

Encls.

Form MF–103
Revised Feb. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42–R1035.3
Approval expires June 30, 1958

APPLICATION FOR AID IN AN EXPLORATION PROJECT

PURSUANT TO DMEA ORDER I, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

NAME OF APPLICANT (Full legal name and mailing address as it should appear on contract if one is executed)

Edward H. Haczela
114 West Street
Cloverdale, California

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APPLICANT NOT TO USE THIS BLOCK

Docket Number: 4770
Date Received: 6/27/57
Government Participation %:
Region: II
Division Code: 400

BUSINESS ORGANIZATION (Check one)

- Individual [X]
- Corporation [ ]
- Partnership [ ]
- Other (Specify) [ ]

State in which firm is organized:

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title

Mineral(s) for which you wish to explore: Mercury

Estimated Cost of Project: $ 34,359.20

LOCATION OF PROPERTY

Name	County	State
Black Oak Mine	Sonoma	Califoornia

Cloverdale-Geyser Road

GENERAL INSTRUCTIONS

Before filling out this application, please read DMEA Order–I, Amended, "Government Aid in Defense Exploration Projects." To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit four copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 1, existing mine workings and geology in item 2, and the proposed exploration project in item 4. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 2(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals*, of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest DMEA Field Office.*

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.

June 18, 1957
Dated

Edward H. Haczela
BY *(Signature)*

Applicant.
Title

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense. U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

1. *Applicant's Property Rights:*

(a) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all land adjacent to the proposed project area which you own or control. Describe any part of the project land or workings which should not be subject to Government lien for royalty payments. If the land consists of unpatented claims, state the book and page number for each recorded location notice, including amended locations, and the place where recorded (courthouse, recorder's office, county, and state).

(b) State all the names by which you know the property.

(c) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise. If you are not the owner, submit with this application one exact copy of the lease, contract, or other document (with address of owner) under which you control the property.

(d) Describe all liens, mortgages, or other encumbrances on the property.

2. *Physical Description:*

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the lands, including existing mine workings. Describe all production facilities.

(b) State your interest, if any, in operations stated in 2*(a)*.

(c) State, as far as you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves on the property giving quantities and grades and sampling methods used, supporting your statement with copies of assay certificates and assay maps if available.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) State your reasons for expecting to find ore, and if you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you may have, indicating on each whether you require its return to you.

3. *Accessibility of Project:*

(a) To aid DMEA representatives who may be required to examine the property, state the name and address of the person who will meet the DMEA representative; give directions for reaching the property; and describe accessibility of the property including the mine workings.

(b) Name the shipping and supply points and places where employees reside and state the distances between them and the property.

4. *The Exploration Project:*

(a) Describe fully the proposed exploration project giving individual footages and sizes of openings *for each item of work.* Use narrative, maps, plans, and longitudinal and cross sections as necessary. Show the location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show also the relation of the proposed work to any existing mine workings and to *property boundaries* or to the closest identifiable corner.

(b) If an access road to the project must be built, show the location on the property map and state the length, type, and construction methods proposed.

(c) In the event that an exploration contract with DMEA is executed, how soon will the work start and how many months will be required to complete it? State your anticipated average daily or monthly rate of progress for each type of work.

5. *Experience:*

State your operating experience and background with relation to your ability to carry out this exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of Costs:*

Furnish detailed estimates of the costs *for each item of the work proposed in 4(a)* under the headings listed below with a total for each heading and the estimated total cost of the project. Costs for any work to be performed by an independent contractor should be shown separately under category *(a)* below. Costs for any work that is not to be performed by an independent contractor should be given in detail under categories *(b)* through *(g)*.

(a) Independent contracts. State the cost of any proposed independent contract for the performance of all or any part of the work, expressed in units of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. *(Note* — If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. For necessary supervision, engineering and geological services, and labor, include an itemized schedule of numbers, classes, rates of wages, salaries or fees, and periods of employment. State whether these technicians and employees are available.

(c) Operating materials and supplies. List items of material and supplies with their cost. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of operating equipment to be used, giving specifications and indicating how each item is to be acquired — i.e., rented, purchased, or provided by the applicant. If it is rented or purchased, state the estimated rental or purchase price. If it is to be furnished by the applicant, give its present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of necessary *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant, which will be used on the exploration project.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration project stating specifications and cost including labor, materials and supervision.

(g) Miscellaneous. For the operating equipment listed in 6*(d)*, describe the type and estimate the cost of repairs and maintenance expected during project operations. Do not repeat initial repairs listed in 6*(e)*. Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories.

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)* State whether you are prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation stated in Sec. 7 of DMEA Order–I, Amended.

(b) Explain to what extent you propose to furnish your share of the costs by providing money, by use of equipment owned by you, or otherwise.

* * * * *

INT.-DUP. SEC., WASH., D.C. 15#39

Edward H. Haczela
114 West Street
Cloverdale, California

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INFORMATION REQUIRED WITH THIS APPLICATION

1. Applicant's Property Rights:

(a) The legal description of the Black Oak properties as shown in the Field Notes of the Patent No. 1169278 granted February 18, 1957 is as follows:

Black Oak Mercury Claim No. 1,
Cloverdale Mining District, Sonoma County,
California, Section 2, T. 11 N., R. 9 W.,
M. D. M. - containing 18.409 Acres.

All of the above property can be subjected to Government lien for royalty payments.

(b) This property has been known as Black Oak Mercury Claim No. 1; Black Oak Quicksilver Prospect; Black Oak Mine.

(c) The Applicant's interest in the land is as Lessee. True copies of the lease are enclosed with this application and are labeled Exhibit I.

(d) There are no existing liens, mortgages or encumbrances on this property.

(True copy)

BOOK 1414 PAGE 308

I. (C)

Edward H. Haczela
114 West Street
Cloverdale, California

LEASE AND PURCHASE AGREEMENT

THIS INDENTURE OF LEASE made this 1st day of January, 1956 by and between Ralph E. Thompson and Ada J. Thompson, as first party, hereinafter referred to as lessors, and Edward H. Haczela as second party, hereinafter referred to as lessee,

WITNESSETH:

LESSORS HEREBY LEASE to lessee the following described property situated in the County of Sonoma, State of Calif., more particularly described as follows, to-wit:

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RECEIVED JUN 27 1957
DATE | NAME | CODE

Black Oak Mine - T 11 N - R 9 W

Section 2 - M.D.M.

TO HAVE AND TO HOLD unto the said lessee for the term of seven years beginning on the 1st day of Jan. 1956, and expiring the 31st of Dec. 1963, unless sooner forfeited or terminated.

In consideration of this lease said lessee covenants and agrees with said lessors as follows:

1. To work and mine said premises as afore said, steadily and continuously during the life of this lease. Working and employing labor in the operation of said property in the equivalent amount of five thousand dollars ($5000.00) for the first two years of said lease and to the amount of five thousand dollars ($5000.00) per year for the last five years. In the event of failure to work the equivalent of these amounts as afore said lessor may, at his own option, terminate this lease upon thirty (30) days notice to said lessee of such default and such termination. Said notice may be given by mail or by personal service upon any of said lessees.

2. To pay to the lessors, after Jan. 1, 1956, a royalty of Ten per cent (10%) of the gross proceeds received by the lessee from all ore mined or removed from said property, based on market price, f. o. b. San Francisco, Calif. This royalty shall be paid until a total of twenty thousand dollars ($20,000.00) has been paid at which time all royalty payments shall cease, and the title to the mine property shall pass to the Lessee in the form of a Grant Deed.

3. All royalty payments shall be made on or before the 20th day of eabh month for minerals produced and sold during the preceding calendar month.

4. The lessee shall keep complete records showing the amount of minerals or quicksilver sold and the price thereof. The lessors shall have the right to inspect such records at all times during business hours.

5. During the life of this agreement said lessee at his own expense shall carry adequate workmen's compensation insurance and shall at all times save said lessors free and harmless of any and all damages for accidents to or injuries incurred by any person or persons upon, in, or about said premises.

This lease shall include any rights or privileges of lessor whatsoever, in rights of way to the described property.

6. Said lessors and its agents may at all times during the life of this lease enter upon said premises and the whole thereof for the purpose of inspecting the same in order to ascertain if the mining work herein referred to is being properly performed in accordance with the terms of this lease.

7. The lessee shall promptly pay for all labor and materials used by him in and around said premises and appurtenances, and shall indemnify and save harmless the lessors from all liens of mechanics or materialmen for labor and materials furnished in connection with his operation hereunder. The lessors shall have the right

to post and maintain on said premises a notice or notices of non-responsibility for debts of laborers and materials, and lessee shall see that such notice or notices are sent to him by lessors are posted and protected from defacement or destruction.

8. In the event the lessors shall fail in the performance of any of the conditions, covenants and agreements herein contained upon their part to be performed, or in the payments of the royalties here inbefore specified, said lessor may give the lessees thirty (30) days notice in writing or such defaults, and if such default is not wholly performed and corrected at the end of said thirty (30) days, the lessor may declare the lease terminated an said property and the whole thereof and all rights of the lessee cease and all payments theretofore made by said lessees, whether by way of royalty or otherwise, shall be the property of the lessor as compensation for the use and possession of the premises, and all obligations of all parties hereto shall cease, and in event of such termination of this lease, the lessees shall have the right to remove their tools and equipment and machinery and buildings provided they are so removed within ninety (90) days from the termination of the lease, provide further that all the royalties have been paid and any such tools, machinery or equipment and buildings not so removed within ninety (90) days shall become and be the property of the lessor.

9. At the expiration of the term of this lease, all of its terms and conditions having been satisfactorily performed by the lessee, this lease may be renewed for an additional period of seven (7) years.

10. Lessee shall have the privilege to construct necesssary roads, or trails in order to conduct his mining operations, and to remove trees or other obstacles to such operations.

11. Lessee shall have the right to use available water from springs or creeks necessary for the carrying on the mining operations. Lessee shall also have the right to use such building now on the property and owned by the lessor.

(True Copy)

12. Lessee shall have the right to sub-let a part or the whole of this demised property without notification to lessor.

13. This lease shall be binding upon and incure to the benefit of the successors and assigns of the lessors and the heirs, executors, administratore and assigns of the lessee.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands the day and year first above written.

_____

_____
LESSORS

_____
LESSEE

RECORDED AT REQUEST OF

(Sgd) E. Haczela
at 40 Min. past 11 A.M.
Book 1414 Official Records p. 308
SONOMA COUNTY, CALIFORNIA

FEB. 6 1956

Herbert O. Snyder, RECORDER

By H. B. Snyder, Jr., DEPUTY
FEE $4.40 Pd/
Serial No.
E 73006

Compared (Sgd.) Huffman

SUPPLEMENT TO LEASE AND PURCHASE AGREEMENT

This Supplement is to the Lease and Purchase Agreement dated January 1, 1956 between Ralph E. Thompson, Lessor, and Edward H. Hazela as Lessee, on the following described property situated in the County of Sonoma, State of California:

Black Oak Mine, T.11 N., R. 9 W., Sec. 2, M. D. M.

In the event the Lessee's Application for assistance under the DMEA Exploration Program is approved, Lessor agrees to accept the work done under this Program as the necessary work required under Paragraph 1 of the Lease referred to above.

Ralph E. Thompson
Lessor

Edward Hazela
Lessee

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Edward H. Haczela
114 West Street
Cloverdale, California

2. Physical Description:

(a) Enclosed please find Engineer's Report of the Black Oak Quicksilver Property, Sonoma County, California by Edward Wisser, Mining Geologist. Also find enclosed 4 copies of the General Plan Map of Black Oak Quicksilver property prepared by Edward Wisser dated 7/31/1943. There is also enclosed a geologic sketch Map entitled Vicinity No. 2 Tunnel prepared by Dobbel March 31, 1944. This Report and the maps enclosed describe in detail the principal mining operations which have been conducted on the property. The production facilities of this property consist of a 2-pipe Rossi type, oil-fired retort. Near by is the Cloverdale Mine and a 50-ton Rotary furnace available for custom work.

(b) The applicant has had no interest in the development of the property as shown by these maps and reports. However, Ralph Thompson who was the original discoverer and later the supervisor and developer of the Black Oak Quicksilver property, will supervise the new work planned for this property.

(c) The past production of this property is claimed by Ralph Thompson to be five (5) Flasks of Mercury.

(d) No ore reserves have ever been blocked out on the property. All exploration work has been done close to the surface. Wisser's Report of the Black Oak Quicksilver Prospect refers to some of the samples taken and records their grades in this Report and on the enclosed Maps prepared by him.

(e) For the geologic features of the property, mineral and geologic formation, please refer to the Black Oak Quicksilver Prospect and the Progress Report described above, copies of which are enclosed with this application.

(f) The reasons for expecting to find ore are also referred to in the Report described above.

(g) As requested in the Application, I am enclosing 4 copies of all Geologic and Engineers' Reports, Maps, and technical information.

Edward H. Haczela
114 West Street
Cloverdale, California

3. Accessibility of Project:

(a) The DMEA representative will be met by Edward H. Haczela at 114 West Street, or by Ralph Thompson at 307 North West Street, Cloverdale, California. To reach the property take Geyser Road out of Cloverdale a distance of 12 miles to Cloverdale Mine property, thence through Cloverdale Mine property, Buckeye Mine property by way of dirt and gravel road for a distance of 3 miles in a northeasterly direction, to the Black Oak Mine property; or, take Geyser Road out of Cloverdale a distance of approximately 14 miles to Dewey's Refrechment stop, thence by way of dirt road in a northeasterly direction crossing Sulphur Creek and going a distance of approximately 3 miles to the Black Oak property. (See enclosed Agreement III granting right-of-way for mining purposes). The property is accessible the year round by car over the different routes, however, some work will have to be done to maintain the road and its accessibility. The mine workings are for the most part closed, however one is partially open and a second is being re-opened at this time.

(b) Cloverdale, a distance of some 15 miles from the mine property, will be the shipping and supply points and the residence of some of the employees. (See page 1 of the General Report on the Black Oak Quicksilver Prospect prepared by Wisser).

Edward H. Haczela
114 West Street
Cloverdale, California

AGREEMENT

1. (C)

III (a)

THIS AGREEMENT made this 28 day of July, 1942, by and between ALBERT E. OTTOBONI, DAVID FERRARI, ANTONIO OTTOBONI, JR., ORINDO MATTEOLI, LLOYD GIANNECCHINI, LOUIS OTTOBONI, ELMER FERRARI. LOUIE GIAMPAOLI, ALADINO GIANNECCHINI, CEASER GIANNECCHINI, of the County of Sonoma, State of California, parties of the first part, and RALPH THOMPSON, party of the second part.

WHEREAS the parties of the first part are owners in fee of the hereinafter described real property, and

WHEREAS RALPH THOMPSON is operating a mine on government land adjoining property owned by the parties of the first part, and

WHEREAS a roadway has been constructed by the parties hereto by joint contribution of effort and finances upon the hereinafter described real property owned by the parties of the first part, and

WHEREAS it is the desire of the parties of the first part to allow the party of the second part, his assigns, successors in interest, agents and employees, the right to pass over said road for the purpose of ingress and egress to said mine operated by the party of the second part, so long as said mine is in operation.

NOW THEREFORE, in consideration of the sum of $1.00 in hand paid by the party of the second part to the parties of the first part, receipt of which is hereby acknowledged, and for other good and valuable consideration, the parties of the first part hereby consent and agree that the party of the second part, his assigns, successors in interest, agents and employees, shall have the right to pass over said road constructed during the summer of 1942 upon the hereinafter described real property for the purpose of ingress and egress to and from said mine now operated by the party of the second part on government land heretofore mentioned, so long as said mine is in operation by the party of the second part, his assigns, successors in interest, agents and employees.

al property upon which said road is situated is described as follows:

Edward H. Haczela
114 West Street
Cloverdale, Calif.

All that certain real property situate in the County of Sonoma, State of California, and described as follows, to wit:

Lot 13, of Section One; Lots 5, 12, 13, 14, 15 and 16, of Section Two; Lots 1, 2, and 3 of Section 11; and Lots 3, 4, 5, 6, 7, and 11 of Section 12, all in Township 11 North, Range 9 West, M. D. M., California, containing 628.68 acres, more or less.

IT IS AGREED by and between the parties hereto that the party of the second part does not have a right to use said road by adverse user, deed, or otherwise, and that the use of said road is allowed to said party of the second part by the parties of the first part only under the provisions contained in this agreement, and the party of the second part, for himself, his assigns, successors in interest, agents and employees, does hereby waive any right, either by executed parol license or other use, to pass over the lands of the parties of the first part, including said road, and that the right to use said road is based entirely upon this agreement, which right is revocable upon the cessation of the operation of said mine by the party of the second part, his assigns, successors in interest, agents and employees.

IT IS FURTHER AGREED by and between the parties hereto that the use of said road by the party of the second part shall be for mining purposes only and that the rights and privileges of the party of the second part, his assigns, successors in interest, agents, and employees is not exclusive and that the use of said road by the party of the second part shall not interfere with the use of the same by the parties of the first part, their assigns, successors in interest, agents or employees, and that if there is an interference with the use of the parties of the first part to and upon said road by the party of the second part, his assigns, successors in interest, agents and employees, then this agreement may be terminated at the option of the parties of the first part by written notice mailed to the last known address of the party of the second part, his assigns, successors in

Edward H. Haczela
114 West Street
Cloverdale, California

interest, agents and employees, or by personal service.

IT IS FURTHER AGREED by and between the parties hereto that this agreement shall not be recorded without the consent of the parties of the first part and if recorded without the consent of the parties of the first part, this agreement shall become null and void, and all the rights and privileges granted to the party of the second part, his assigns, successors in interest, agents and employees, shall thereupon cease and terminate.

In the event that it becomes necessary for the parties of the first part to institute action to enforce the provisions of this agreement the party of the second part for himself, his assigns, successors in interest, agents and employees, agrees to pay a reasonable attorney's fee or damages incurred by him, and all court costs incurred thereby.

IN WITNESS WHEREOF the parties hereto have hereunto set their hands in duplicate the day and year first above written.

WITNESS:

ALBERT E. OTTOBONI, DAVID FERRARI, ANTONIO OTTOBONI, JR., ORINDO MATTEOLI, LLOYD GIANNECCHINI, ALADINO GIANNECCHINI, and CEASER GIANNECCHINI

(Sgd) E. McPherson

By (Sgd) Albert E. Ottoboni
Agent for the parties of the first part.

(Sgd) J. A. Ratchford

(Sgd) Ralph E. Thompson

Edward H. Haczela
114 West Street
Cloverdale, California

4. Exploration Project:

(a) The proposed exploration project is shown on the General Plan Map of the Black Oak Mercury Mine prepared by Edward H. Wisser, Mining Geologist. This is shown in red lines on this map. Recommendations by Edward H. Wisser for this work are referred to in his report on the Black Oak Quicksilver Prospect and in his Progress Report on the Black Oak properties, copies of which are enclosed. The mining done on the Black Oak properties to date has been at a shallow depth. As a result, the work done has not proved if the ore zone extends to depth. It is proposed to start a new portal approximately 70 feet below the portal of No. 3 Tunnel and to drive a new tunnel 5' x 7' in size to explore the ore zone found at shallow levels by Tunnel No. 3. This new tunnel will approximately follow the westerly direction of Tunnel No. 3 for a distance of approximately 200 feet. At this point it is planned to turn southeast and continue the tunnel to explore the probable fault zone. This distance should be approximately 175 to 200 feet. This fault zone is shown on the General Plan Map referred to above. It is felt that this fault is the controlling factor for the ore found in Tunnel No. 3. After this fault is found and explored it is proposed to extend the tunnel in a southeasterly direction a distance of approximately 300 feet. This should intersect the first southwesterly fault as shown on the General Plan Map used in this report. As explained in Edward Wisser's Report on the Black Oak property this fault was found to control the ore that was found near the surface Tunnel No. 2. This work will explore the two ore zones that were found by earlier work as reported in the above Report. It had been felt earlier that this exploratory work could be done by means of a shaft, but after it was found that Tunnel No. 3 carried a good showing of cinnabar, it was felt that the higher cost of sinking would not justify the limited area

Edward H. Haczela
114 West Street
Cloverdale, California

4. Exploratory Project: -- 2.

a shaft would explore and that one shaft would not efficiently explore the two separate ore zones of Tunnels Nos. 2 and 3.

The General Plan Map together with the Report of the Black Oak Quicksilver Prospect describes the location of the proposed work as related to geologic features such as veins, ore-bearing beds, etc. The General Plan Map also shows the relation of the proposed work to the existing mine workings and to the property boundaries. The proposed work lies close to the center of the property.

(b) No access roads need be built to the project.

(c) In the event the exploration contract with the DMEA is executed the work will start within 10 days and should be completed within 16 months allowing for 3 months of slowdown due to winter weather. It is anticipated that the average daily rate of progress will be approximately 5 feet in the untimbered portions of the tunnel and approximately 3 feet in the timbered portions.

Edward H. Haczela
114 West Street
Cloverdale, California

5. Experience:

The applicant's background and experience is as follows: I have lived in Cloverdale, California, approximately 11 years. In 1951 I acquired the Dewey Quicksilver Mine located on the Geyser Road adjoining the Cloverdale Mine property and being in the vicinity of the Black Oak property. This property was operated and developed by myself over a 2-year period. The mining was conducted on the property both underground and open pit. The applicant also operated a 15-ton rotary quicksilver furnace and had a production of approximately 35 flasks. The property was later purchased by Stanley J. Buckman of Memphis, Tenn. It is known now as Big Red and Eagle Rock properties of the Buckman Laboratories of Memphis, Tenn. The applicant also acquired property in 1953 known as Amazon Mine located on Kissack Ranch on the Geyser Road in the vicinity of Black Oak property near Cloverdale, California and developed this property under a lease recorded in Sonoma County Record Book 1205, page 557. Development of this property consisted of 30 days of surface exploration work with a D8 tractor, sinking of an incline shaft, and approximately 200 feet of underground workings, reopening the mine workings that had been worked on in 1943. The applicant is no longer actively interested in the development of this property as it has been turned over to new lessees. The applicant is thoroughly familiar with the Black Oak property as he has held the lease on this property over a period of 8 years and has personally supervised the assessment work required during this period previous to the property being patented. The applicant has also developed property known as Pieta Creek Manganese Claim No. 1 located on Pine Mountain near Cloverdale, California, on the property of George and Hubert Smith. He has also assisted in the recent development and exploration work of the property known as the Sonoma Quicksilver Group located at Pine Flat near Healdsburg,

Edward H. Haczela
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5. Experience -- 2.

California. In addition to mining and development work the applicant maintains an office known as Cloverdale Realty and is a licensed Real Estate Broker in the State of California.

Mr. Ralph E. Thompson, owner of the Black Oak Property under a recent Patent No. 1169278 dated February 18, 1957, and the original discoverer of this property, is the man who supervised the work as shown on the Report of the Black Oak Quicksilver Prospect, prepared by Edward Wisser in 1943, copies of which are enclosed with this application. He will supervise the work under this DMEA Application. Mr. Thompson's mining experience is as follows: 10 years' mining experience at the Cloverdale Mine located on the Geyser Road 12 miles east of Cloverdale; Lessee of the Culvaer Bear property located on the Geyser-Healdsburg road for a period of approximately 2 years, supervising operating, mining and processing of quicksilver ore. Mr. Thompson also supervised and developed the Black Oak Quicksilver property as mentioned in the Black Oak Report by Wisser (Copies enclosed). This work was done over a period of approximately 5 years. Mr. Thompson has also acted as Consultant on various mining operations in this area and has acted as Consultant during the last 4 years in the development of the Buckman Laboratories properties located on the Cloverdale-Geyser Road and the Geyser-Healdsburg Road, known as the Big Red, Eagle Rock and Culvaer Bear properties.

Additional supervision, engineering and geological services will be handled by Edward Wisser of the firm of Wisser and Cox, Consulting Geologists, 55 New Montgomery Street, San Francisco, California. Mr. Wisser originally did the geological work connected with the Black Oak property as reviewed in the Black Oak Quicksilver Report dated June 25, 1943, copies of which are enclosed herein. Mr. Wisser is also employed by the University of California, Berkeley, California, as a Geologist.

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6. Estimate of Costs:

(a) Independent Contracts:

It is estimated that approximately 48 hours of bulldozing with a D8 tractor will be required:

48 Hrs.	@ $14.00 per hour	$572.00	
12 Hrs.	Transportation of tractor @ $12.00 per hour	144.00	
Total cost of independent contracts			$716.00

(b) Personal Services:

1 Supervisor	- Supervision 16 mos. work at $475 per month	$ 7600.00	
1 Engineer	- Engineering and Geological service. 12 mos. @ $150 per mo.	2000.00	
Labor - 2 Miners	@ $2.25 per hour, 5-day week 13 mos. work	12096.00	
Total cost personal services			$21,696.00

The above technicians and employees are available and should continue to be available over the next few months.

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6. (Continued)-- 2

(c) Operating materials and supplies:

Antifreeze - 2 gallons		$10.00
Gasoline - 2080 gallons	@ 29¢ gallon	603.20
Oil - 32 gallons	@ $1.00 gallon	32.00
Grease 35 lbs.		5.00
Diesel fuel 600 gals.	@ $17.00	102.00
Slick sheet 4'x6'		20.00
Signal bell		2.50
50 Ft. 1/2" rope		5.00
Gas can and nozzle		2.50
Water hose 50'		6.00
3 Miner's hats	@ $5.00	15.00
Axe		6.50
9 Shovels No. 2	@ $4.50	40.50
250 Ft. 3/4" pipe	@ 30¢	75.00
800 Ft. 1/2" pipe	@ 25¢	200.00
700 Ft. 2" pipe	@ 65¢	455.00
2 Padlocks	@ $2.00	4.00
30 Lbs. Nails		7.50
4 Water faucets	@ $1.65	6.60
1 Oil faucet		2.50
2 Shut-off valves	@ $2.50	5.00
480 Lbs. carbide	@ $5.40 Keg	86.40
1 Pipe vise 2"		12.50
2 Double jacks	@ $7.80	15.60
3 Small carbide lamps	@ $2.65	10.95
2 Large carbide lamps	@ $6.90	13.80
100 Timken bits	@ 55¢	55.00
1 Gallon air tool oil		3.00
Steel repair		20.00
2400 Lbs. 40% blasting powder	@ $25 per 100 lbs.	600.00
4000 Ft. fuse		56.00
600 No. 6 blasting caps		15.00
1 Cup crimper		1.75
1 Jim Crow		15.00
6 Mine picks	@ $6.50	39.00
2 Rail bars	@ $7.00	14.00
50 Lbs. track bolts		18.00
50 Lbs. track spikes		14.00
50 Pair fish plates		38.00
12 Lbs. Mine rail - 50 lgths. (750')		735.00
210 Posts (cores)	@ $1.50	315.00
6000 Ft. Timber	: $80.00 per M.	480.00
1000 Wedges		50.00
Total		$4,228.80

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6. (Continued) -- 3

(d) Operating Equipment:

(Furnished by Applicant)

LeRoi #65 Compressor	Market value	$1,000.00	
50 Drill bits (Timken)	@ 60¢	30.00	
2 - Gardner-Denver jack hammers and steel, water and air hose (100'), column, arm, saddle and water tank	Market value	500.00	
4-Wheel drive jeep station wagon with winch, 1951 Model	Market value	800.00	
Mine car		100.00	
Plumbing tools - One 2"-4" pipe threader, One chain pipe wrench, Two 14" pipe wrenches, One ½"-2" pipe cutter, etc. One ½"-1" pipe threader		150.00	
McCullogh Chain Saw		150.00	
All carpenter tools necessary - Brace and bits, hand saws (2), Crescent wrenches (3), Hammers (2), Prospector's pick (1), Hatchet, plane, crosscut saw, chisels (2), hack saw, level, plumb, tape measure, wrecking bar, etc. etc.		150.00	
500 Ft. electric wire		30.00	
50 Ft. Culvert 12" tubing		40.00	
One 1-ton 2-wheel trailer		75.00	
	Total Market Value		$3,025.00

To be purchased:

2000-Watt light plant	250.00

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6. (Continued) -- 4.

(e) Initial Rehabilitation and Repairs:

Very little repair work is required to the existing buildings and installations. It is planned to repair the retort - that is, build a concrete retaining wall, repair roof structure, and overhaul oil burner. Total cost is estimated at approximately $125.00

Powder magazine installation and repairs 75.00

Total $200.00

(f) New building, fixtures, installations:

No new buildings are planned. In addition to the existing housing, it is planned to purchase one used trailer for use by the Supervisor.

Total cost including hauling to site $650.00

(g) Miscellaneous:

Overhaul LeRoi Compressor after approximately 8 months	$110.00	
Blacksmith work - welding, sharpening, cutting	100.00	
Overhaul one Jack hammer after 8 months use	85.00	
New tires for jeep after 8 months wear. 4 Tires @ $20.00	80.00	
General repairs of jeep	100.00	
Mine car - general repair	25.00	
Accounting $25.00 per month - 16 months	400.00	
Workmens Compensation Insurance - 3 men	2087.00	
Payroll taxes - 3 men	605.40	
Total		$3.593.40

Total Estimated Cost of the Project $34,359.20

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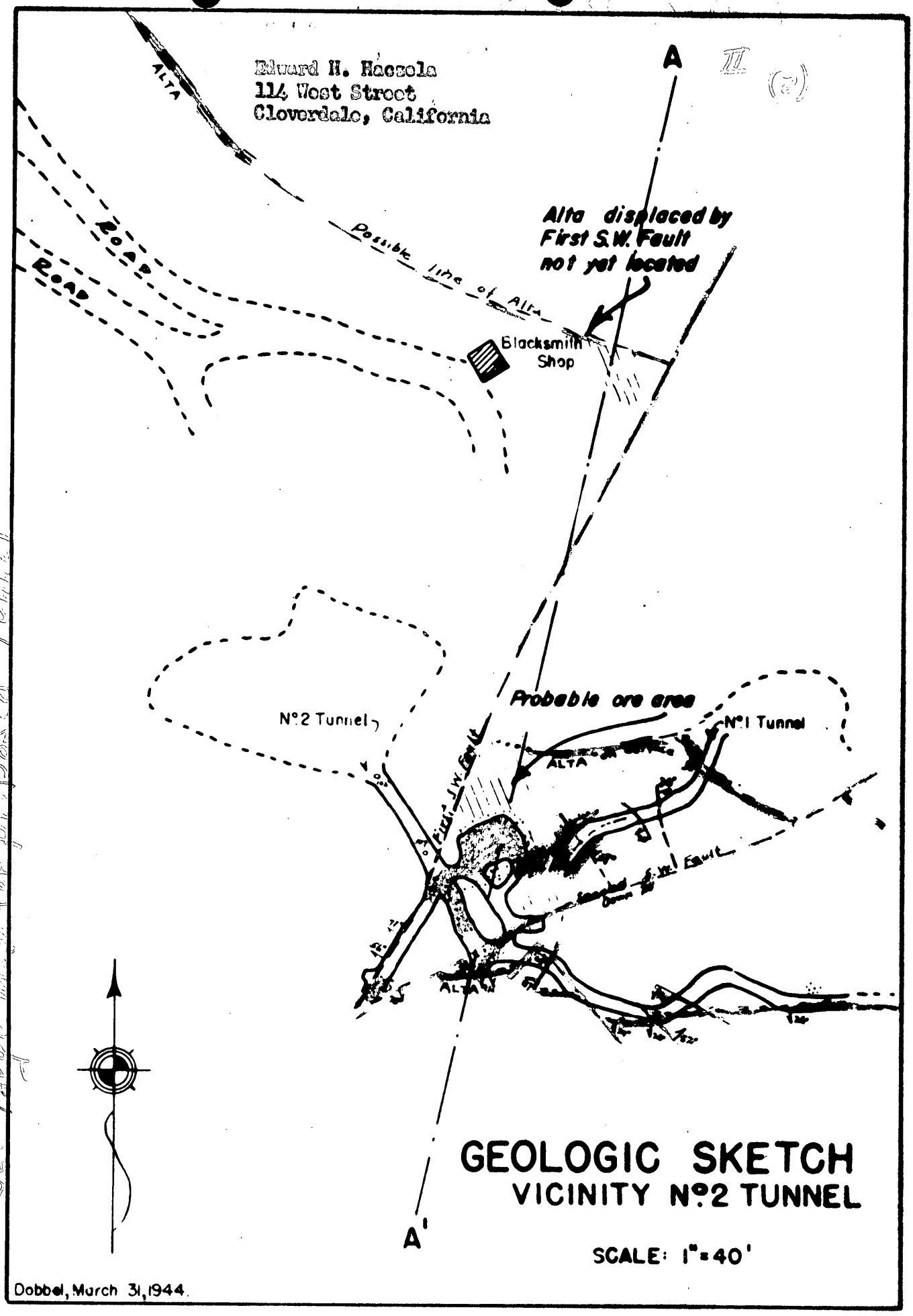
7.

(a) The applicant is fully prepared to furnish his share of the costs of the proposed Project in accordance with the regulations of Government participation stated in Section 7 of DMEA, Order 1, Amended.

(b) I, as applicant, propose to furnish my share of the costs by providing equipment as shown under Item 6(d), and by providing such money as will be required under the terms of the contract.


Edward H. Haesola
114 West Street
Cloverdale, California
ALTA
ROAD
ROAD
Possible line of Alta
Alta displaced by
First S.W. Fault
not yet located
Blacksmith
Shop
A
A'
Probable ore area
No.2 Tunnel
No.1 Tunnel
ALTA
ALTA
GEOLOGIC SKETCH
VICINITY No.2 TUNNEL
SCALE: 1"=40'
Dobbel, March 31, 1944

ward H. Hacsela
114 West Street
Cloverdale, Califor ia

REPORT ON THE BLACK OAK QUICKSILVER PROSPECT

SONOMA COUNTY, CALIFORNIA

INTRODUCTION.

The following report is based on a visit to the property June 12, 1943, in company with Ralph Thompson of Cloverdale, who discovered it, and C. H. Grant, 435 Bryant St., San Francisco. Messrs. Thompson and Grant each hold a third interest, the owner of the remaining third being Burdetta V. Baird, 189 Lunado Way, San Francisco.

LOCATION, TOPOGRAPHY, WORKING CONDITIONS.

The Black Oak quicksilver prospect lies about 10 miles air line nearly due east from Cloverdale. Cloverdale is about 80 miles north of San Francisco via U.S.Highway 101. The prospect is reached from that town, the nearest purchasing center, by unimproved county road to the Cloverdale mine, 12 miles, thence 3 miles to the prospect by a road built by Mr. Thompson. This road crosses the divide between Sulphur Creek, on which the Cloverdale mine lies, and Squaw Creek, on the south slope of which the Black Oak prospect is situated. The road contains several very steep pitches as at present constructed, but the grade could be reduced at very moderate expense.

The elevation at the prospect is about 2500 ft. While the relief is strong, slopes are relatively gentle. (Photo 4).

The Black Oak holdings consist so far of but one claim, the Black Oak, unpatented, and of standard size, 1500 ft. by 600 ft. Part of this claim, and its location with respect to Public Land Surveys, is shown on the accompanying plan.

Squaw Creek valley is like a park (see photos). A number of springs furnish water for domestic use, and doubtless, with a little development, would furnish enough for a quicksilver plant. Cloverdale is an excellent purchasing center for most items, and is not far away. This district, however, probably offers no exception to the present universal shortage of mine labor.

EQUIPMENT.

Mining.- One 16 cu. ft. ball-bearing mine car; 400 ft. of 12-lb. rail. 100 ft. 2" pipe; 400 ft. 1" pipe; 100 ft. 3/4" pipe, 150 ft. air hose; 50 ft. 1" hose.

One 105 cu. ft. Gardner-Denver air compressor, portable, driven by Buda engine.

One Gardner-Denver S-55 sinker drill, with shell and bar.

Blacksmith shop complete. Drill steel etc.

Transportation. - One five-speed Ford pickup. One International 1 1/2 ton panel truck; one Chevrolet 1 1/2 ton flat bed truck.

All of the above items are new or in good condition.

Camp. - There are two excellent cabins (Photos 7 and 8) equipped with cooking ranges, running water, toilets with septic tank etc. There are 6 cots with mattresses, and a large tent, not set up.

GENERAL GEOLOGY.

Rock Formations. - The principal rocks of the area are Franciscan (Upper Jurassic) sediments - thin bedded chert with intercalated shale; sandstone. Associated with the sandstone is a large mass of greenstone (altered volcanic rock), probably a thick sill. In the No. 3 tunnel (see plan) what looks like a sill of altered dia-

base is exposed. The slopes of Squaw Creek valley near the prospect bear a heavy talus mantle (Photo 3) so there may be rocks present other than those mentioned.

Structure. - The sandstone and greenstone, on the one hand, and the chert, on the other, are separated by the principal structural feature of the region, a major thrust fault, the sandstone and greenstone lying wholly above the flat surface of the fault, and the chert wholly below it. In Photo 1 the chert beds lie nearly perpendicular to the fault surface. The fault may have acted along a soft shale bed in this locality, for squeezed shale appears in several places within the fault zone. I have called the thrust surface "The Alta", the traditional quicksilver miners' name for a shaly, gouge layer beneath which many California Coast Range quicksilver ore bodies occur.

The alta is an important fault, because it separates everywhere radically different rock formations, because of the crushing along it, and because of the intense distortion of the thin-bedded chert beneath it. It strikes northwest like similar Coast Range faults. The dip as now exposed has plainly been modified by erosional creep, which would flatten or even reverse an original dip southwest into the ridge. Further, as shown below, a similar thrust fault at the Cloverdale mine has probably been crumpled by post-fault folding. The Black Oak fault near present workings lies nearly flat; but it may steepen to the southwest and dip into the ridge.

At the Cloverdale mine, 2 miles west of Black Oak and on the other side of the ridge, the crumpled thrust just mentioned has sandstone above it, chert below, as at Black Oak. This fault also strikes

northwest, but it dips 35° northeast, into the ridge and toward the Black Oak.[1]

1. C.N.Schmitt: Occurrence of Quicksilver Orebodies. Trans.A. I.M.E., 1931, p. 427. C. P. Ross: Quicksilver deposits of the Mayacmas and Sulphur Bank Districts. U.S.G.S. Bull. 922-L, p.343, 1940.

At the Socrates Mine, about 8 miles air line southeast of Black Oak, a thrust fault strikes northwest and dips 45° southwest; it separates serpentine in the hanging from sandstone and shale in the foot. At the Geysers, only a mile or so southeast of Black Oak, a strong thrust fault strikes northwest and dips northeast. We are evidently dealing with a strong northwest zone of thrust faults, some of which dip southwest, others northeast.

Little can be said regarding the structure of the sediments at Black Oak. All exposures are close to the thrust fault and the beds have been twisted and distorted by movement on that fault. Geologists of the U. S. Geological Survey told Mr. Thompson that the ridge between Squaw and Sulphur Creeks was a syncline, i. e. the general dip of the beds on the northeast side of the ridge was southwest, that of the beds on the southwest side was northeast. This statement seems probable.

<u>Mineralization</u>. <u>Ore Deposits</u>.- The Cloverdale, Buckeye and Black Oak properties lie at the northwest extremity of the Mayacmas quicksilver belt, 26 miles long and with a total production exceeding 400,000 flasks. Ore is directly associated with thrust faults at the Great Western, Socrates, Cloverdale, and by present indications at the Black Oak property. Mines near the Black Oak have had substantial production: Cloverdale, 16000 flasks; Culver-Baer (3 miles southeast), 11,000; Socrates, 4000 plus.

The mode of ore occurrence at the Cloverdale, the nearest producer, is of direct interest and is given briefly from the references cited on page 4.

The ore bodies lie under the gouge of the thrust fault. The fault surface, according to Schuette, is so crumpled that "locally almost any dip and strike may be measured." There are many dikes and bodies of diorite (diabase); ore is found near but not in contact with these. Most of the ore occurs in shattered chert and grades off from the fault hanging wall to an "assay footwall". The better ore is localized along steep fractures perpendicular to the strike of the thrust fault.

Schuette believes the marked irregularities in the fault surface resulted from post-fault folding.

BLACK OAK PROSPECT.

Workings and surface exposures are shown on the accompanying plan. Because of talus, brush and forest there were literally no exposures before Thompson started tunnelling and bulldozing. It is clear now that the course of the thrust fault is marked by a line of seeps extending far northwest of the mapped area.

Just north of No. 3 Tunnel a thick lens of ledge rock passing cinnabar lies directly beneath the alta. (The ledge rock at Black Oak is mainly pure silica, white, black, or iron-stained). Toward the north end of this lens, at Point 2472 is a well-defined cinnabar seam along a fracture roughly perpendicular to the plane of the alta above it. Near the south end of the ledge rock lens the brecciated zone marked "Probable Fault" is also perpendicular to the

alta surface; it pans better than the rock on either side.

Tunnel No. 3 was driven before this fault was found by bulldozing; the tunnel parallels the fault without exploring it. About 50 ft. east of the tunnel face a band of black siliceous ledge rock seems to have made off from the alta above the tunnel down chert beds. This ledge rock pans. Near the face of the tunnel what looks like a diabase sill is exposed in the roof.

The lake northwest of Tunnel No. 3 has no leakage and has its bottom sealed, presumably, by the alta. Since the lake bottom lies some 13 ft. lower than the alta exposed 100 ft, east of it, the alta probably dips gently southeast here, possibly at about 15°.

There are no exposures other than (that) of greenstone above the alta between Tunnel No. 3 and the area of No. 1 Tunnel. The latter was driven directly beneath the alta, which must lie nearly flat here because the tunnel runs 65 ft. southwest without cutting alta. The tunnel shows spotty ore (see Thompson samples on plan) throughout its inner 30 ft. The chert here is intensely disterted, thrust-faulted by faults sympathetic to the alta above them, and fractured by steep southwest breaks perpendicular to the alta, some of which carry ledge rock lenses. The ore is associated with the southwest fractures, and in altered chert more than in ledge rock. The cinnabar is crystalline, heavy, but seldom penetrates chert fragments, forming rather in interstices between fragments, so that in general the grade depends on the degree to which the chert is shattered.

The original tunnel at the southeast end of the map is caved. The chert near its portal pans.

No. 2 Tunnel at the time of my visit was being run in talus (Photo 3) but shortly after cut a southwest steep silicified brec-

cited some with gouge and slickensides, on the southeast side of which ore in chert was encountered. The tunnel has been turned to follow the ore along the fracture southwest, in the hopes of finding high-grade ore at the intersection of the fracture zone with the alta.

Comparison with Cloverdale.- Notwithstanding the meagerness of Black Oak exposures, similarities to Cloverdale are striking. At both properties ore lies in shattered chert beneath a thrust fault and is controlled in part by steep fractures roughly perpendicular to the fault surface. At both properties the fault surface appears to have been deformed by later folding; if the deformation was great enough the Cloverdale and Black Oak thrusts may even be one and the same.

CONCLUSIONS.

The ore already encountered with a minimum of effective work, together with the striking similarities to Cloverdale stamp the Black Oak as an exceptionally worthy quicksilver prospect. Heavy talus and overgrowth prevented its discovery by old-timers; Thompson found it more or less by chance, in panning the stream near the original tunnel. Here is surely a prospect worth developing.

RECOMMENDATIONS.

Development therefore is recommended; the flat thrust, however, presents a difficulty. Plainly the object of exploration is to examine the ground immediately beneath it, and especially where steep fractures abut against it from below. Were the thrust steep, and with a consistent dip in one direction, it could be explored by drifting in its footwall, thereby cutting all steep fractures

approaching it. Drifting could be done on various levels, say 50 ft. vertically apart. But with a flat thrust, or one that rolls in various directions, no drifts are possible beneath the thrust plane; exploration would become a maze of crosscuts, like a coal mine; every cross-fracture, instead of being cut on various levels near a steep fault, would have to be followed its entire length, and if the thrust should roll upwards, raises and sub-levels would be needed along the steep fracture to reach its intersection with the thrust. Such exploration is justified with a consistent coal seam, but not with erratic quicksilver ore.

There are two main hopes for the Black Oak prospect: (1) that the alta assumes a consistently steep attitude; (2) that a cross-fracture be found strong enough to make important ore well away from the alta, in case the latter stays flat or rolling. Such a fracture would be worth drifting on even where the rolling alta is well above the drift. The following exploration is based on these two notions.

Recommendation 1. - (See plan, blue crayon lines). Continue southwest drift, No. 2 Tunnel, in ore along the cross-fracture. If the alta dips southwest it should be encountered by this drift. If so, drive just in footwall of alta northwest across the cross-fracture to see if it carries ore on that side; and drive southeast at least 200 ft., keeping the bottom of the alta in the southwest upper corner of the drift, to cut any further cross-fractures, such as those in No. 1 Tunnel.

If this work established a persistent southwest dip of the alta, it should indicate also the most favorable place to sink. Quicksilver mineralization took place at a date so recent that the

present topography was essentially then in existence. The best ore did not deposit as close to the surface as the ore now exposed at Black Oak, therefore the hope of the prospect lies in our finding some structure we can follow to depth, whether into the ridge or down. Since the alta was the major ore-control, it is that structure we must try to follow in depth. If the crosscutting and drifting of this recommendation show we can follow the alta down, we can then lay out an incline shaft from the most favorable place in the drift.

The work may show something else, however. Ore and fracture may continue a good way into the hill, but no alta be found: the drift will stay in short. In this case, we must raise to the alta from the southwest end of the ore, i. e., that under the most cover. Or the ore may soon give out but the fracture continue. In this case continue drift on fracture several hundred ft.- it seems to be strong enough, according to Thompson, to warrant this. At the end of the drift raise to find the alta, if it is not found on the level. If the raise discloses the alta dipping northeast, that is all to the good, because the mine, if any, lies then in the hill above the horizon of the present tunnels; no shaft will be needed to develop it.

Recommendation 2.- No. 3 Tunnel, as has been mentioned, never cut the cross-fracture or breccia zone labelled Probable Fault on the plan. It has been shown (p. 6) that the alta probably dips gently southwest here. The fault should be examined where it meets the alta. Hence crosscut northwest as shown on plan, through the diabase sill (probably thin) to the fault, and drive west on the fault.

Recommendation 1 has priority over 2, for it starts in ore.

These recommendations will be modified as work proceeds and new facts develop. But they are something to start on.

Cost of the Work.- This is impossible to predict now. If present ore showings fizzle out, not over $3000 might be spent; if a big mine exists, not easily found, $150,000 might be spent before bringing it into production. Whatever results of work prove to be, a sum large enough to cover reasonable contingencies of exploration should be made definitely available, in the treasury. Assume that 400 ft. of drifting and crosscutting from present tunnels discloses a situation favoring a 200 ft. shaft, and that 200 ft. of drifting and crosscutting from the shaft opens up sufficient ore to justify a plant, thus completing the exploration stage.

400 ft. drifting and crosscutting @ $10/ft.....	$4000
200 ft. sinking @ $30/ft.....	6000
200 ft. drifting and crosscutting @ $15/ft.....	3000
Additional equipment and supplies	10000
Contingencies	7000
	$30000

(1943 estimate)

As I have said, this may not be nearly enough; but as a rough guess for an initial appropriation it may suffice. If the work done justifies a furnace, an additional, possibly equal appropriation will be needed to make the mine a producer.

Additional Claims.- The Black Oak claim affords clear extralateral rights only if the alta dips southwest. If it lies flat or passes up a northeast dip into the ridge southwest of the claim, some claim to such rights might exist provided it has no other outcrop, but the seed of a lawsuit would exist. I recommend therefore staking additional claims as shown on the sketch on page 11.

(Sgd.) Edward Wisser
Edward Wisser
Mining Geologist

San Francisco, Calif.
June 25, 1943

EDWARD WISSER
MINING GEOLOGIST
533 CALL BUILDING
SAN FRANCISCO
TELEPHONE GARFIELD 4676

Edward H. Haczela
114 West Street
Cloverdale, California

July 19, 1943.

PROGRESS REPORT ON THE BLACK OAK PROPERTY,
SONOMA COUNTY, CALIF.

The writer first examined the Black Oak quicksilver prospect on June 12,1943,and described his findings in his report of June 25th. On July 18th he revisited the property in company with Mr. B.V. Baird to inspect results of further exploration in No.2 Tunnel. These results, with some new general ideas on the property, are described below.

No.2 Tunnel.- See accompanying plan. The tunnel passes through talus carrying abundant greenstone float, from the portal to a point 32 ft. inside, where a strong southwest fault was encountered. The fault dips northwest and carries 4 or 5 ft.of greenish gouge or clay on its hanging wall. Ore in shattered and twisted chert was encountered just south of the fault;it was at first supposed that the ore followed the foot wall of the fault,and so the footwall was followed for 40 ft. southwest, practically to the alta,as shown on the plan. The fault proved barren, however,so that Thompson returned to the point where ore was first found and followed this south as shown. The ore seems to follow a sharp local anticline in the chert beds; it dies out gradually toward the south. At 30 ft. south of the fault mentioned,a second southwest fault was encountered, dipping steeply southeast. About 6 ft.south of this fault,the flat-dipping alta was exposed. A round had been taken out to the east in the footwall of the alta,following Recommendation 1 of my Report of June 25. Such

was the situation on July 18.

The petering out of the ore found just south of the first southwest fault in No.2 Tunnel is disappointing; but from a more general standpoint the results of the recent exploration in that tunnel are decidedly encouraging, because the alta has been found dipping regularly, and fairly steeply, into the mountain (southwest or south). The hope that this would prove the case, and the reasons for desiring it, are expressed on pages 7 to 9 in my report of June 25.

The alta is exposed near the south face of the east fork of No. 2 Tunnel. Drive east in its footwall, as suggested in the first paragraph of Recommendation 1, page 8, Report of June 25, and as indicated on the accompanying plan.

General.- Beside finding the alta where we hoped to find it, and dipping into the hill as we had hoped, the recent work in No.2 Tunnel has advanced our knowledge of local geologic structure in a way that should help the planning of future exploration.

The first southwest fault met in No.2 tunnel is strong, and has apparently dropped the block in its hanging wall down a considerable vertical distance with respect to the block in its footwall, so that on the No.2 Tunnel level, the greenstone above the alta lies in the hanging wall of the southwest fault, while the chert below the alta lies in the footwall. The extent of this vertical displacement is suggested on the plan, where the seep at Point 2436, about 230 ft. NNE of the No.2 Tunnel portal, probably marks the position of the alta and lies some 64 ft. lower in elevation than the alta as exposed near the portal of No.1 Tunnel. The block probably dropped about 64 ft.

The second southwest fault cut in No.2 Tunnel is far less important, having dropped the alta down on the southeast side some 20 ft. as indicated on the plan.

The salient feature brought out in No.2 Tunnel is the fact that all the best showings on the property so far occur in the wedge between the first southwest fault and the alta.(See plan). This wedge enlarges with depth; I have shown on the plan where the first and second southwest faults and the alta would lie on a level 50 ft. vertically below the No.2 Tunnel. Both the alta and the first southwest fault carry heavy gouge; the inverted trough, pitching down to the southwest, made by their intersection would form an ideal trap for cinnabar solutions; this is the "line of intersection" on the plan. While present showings would suggests sinking an incline not far below, and parallel to,this line of intersection, we should go ahead with the tunnel exploration first and complete Recommendation 2 as urged above.

The additional data secured by the recent advance in No.2 tunnel, together with further general study,has indicated that the alta, and to some extent the chert below it, tends to form anticlines and synclines plunging southwest. A syncline is shown in plan by a bulge of the strike-line or outcrop outward to the northeast, an anticline, by a similar bulge southwest. Thus north of No.3 Tunnel alta and beds seem to form a syncline, south of it, an anticline. Near Tunnels 1 and 2,the beds are more intensely folded than the alta,and folded differently. At Tunnel 2,the alta seems to form a rather sharp anticline plunging southwest, while the chert beds in the footwall are folded into a sharp minor anticline plunging north;this localized the ore. The same condition prevails at the original Tunnel 1 the alta probably swings into another anticline,with a syncline between this anticline and the

one at Tunnel 2.

Study of the Cloverdale maps, and of other California quicksilver deposits shows that the anticlines, either formed by altas, beds, or both in combination, favor ore. The sharp anticline in Tunnel 2 obviously localized the ore there. It was pointed out in the previous report how northeast fractures favor ore; obviously the places to explore are anticlines and northeast fractures, close to or at the alta.

Tunnel No.3.- There is probably an anticline, both in the alta and in the chert beds, just south of the ~~alta~~ Tunnel, and the alta lies at the elevation of No.3 Tunnel probably about as shown. The two most likely locations for an incline shaft in the footwall of the alta are, (1) near Tunnel 2, and (2) near Tunnel 3. The two localities are nearly 500 ft. apart, so that it would be an expensive policy, at least at the start, to explore both by a single shaft. We shall have to decide at which place to sink, and therefore should explore both at shallow levels before deciding. Hence Recommendation 2-A (modified from 2 of previous report): Crosscut as shown on plan to alta.

Surface.- There is probably another southwest fault about 150 ft. south of No.3 Tunnel, as suggested on the plan. The block between this fault and the first southwest fault of Tunnel 2 has been dropped about 65 ft. A seep shows the position of the alta at one point in this block; we should try to have a look at the alta within this block, if solid ground instead of slide can be found (the block is mainly slumped, slid ground). Recommendation 3: If a rib of fairly solid ground exists at the point shown on the plan, trench with bulldozer in search of the alta.

Conclusion.- On completion of above recommendations we should be able to spot the location of the proposed shaft.

Edward Wisser
Edward Wisser
Mining Geologist

Edward F. Haczela
114 West Street
Cloverdale, California

Photo 1- Thrust fault or alta at No. 1 Tunnel

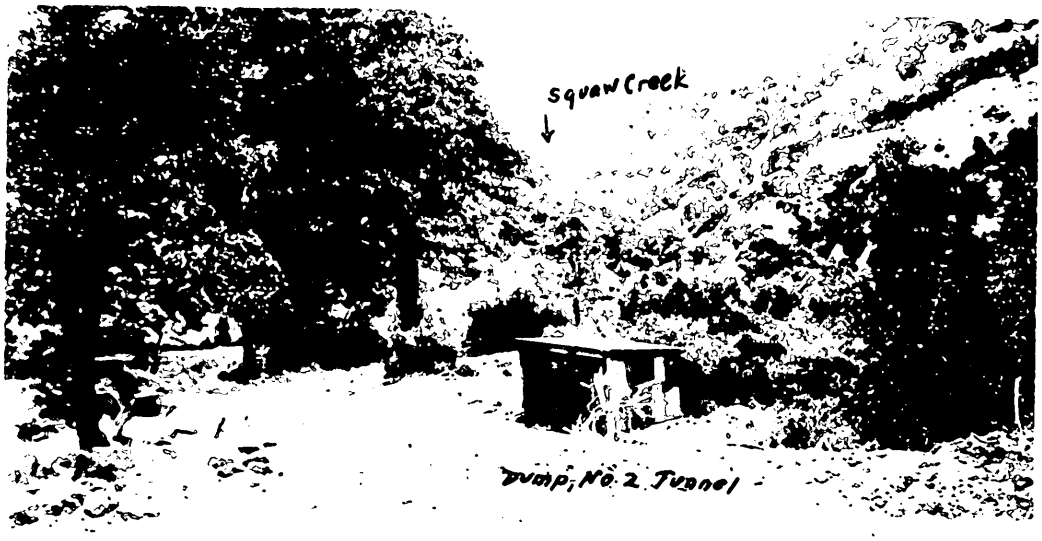


Photo 4- Looking north from No 2. Tunnel toward Squaw Creek.

Edward H. Raczela
114 West Street
Cloverdale, California

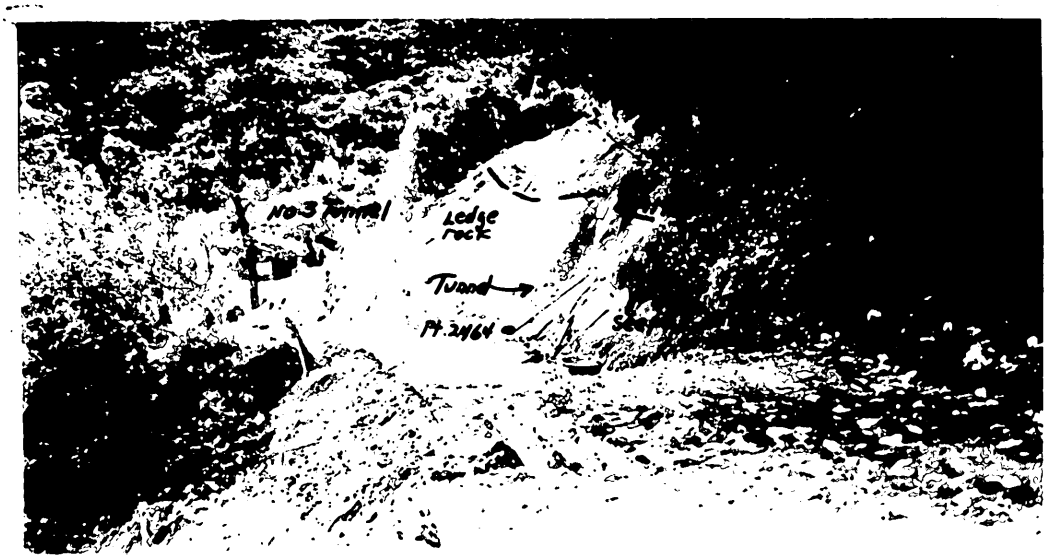
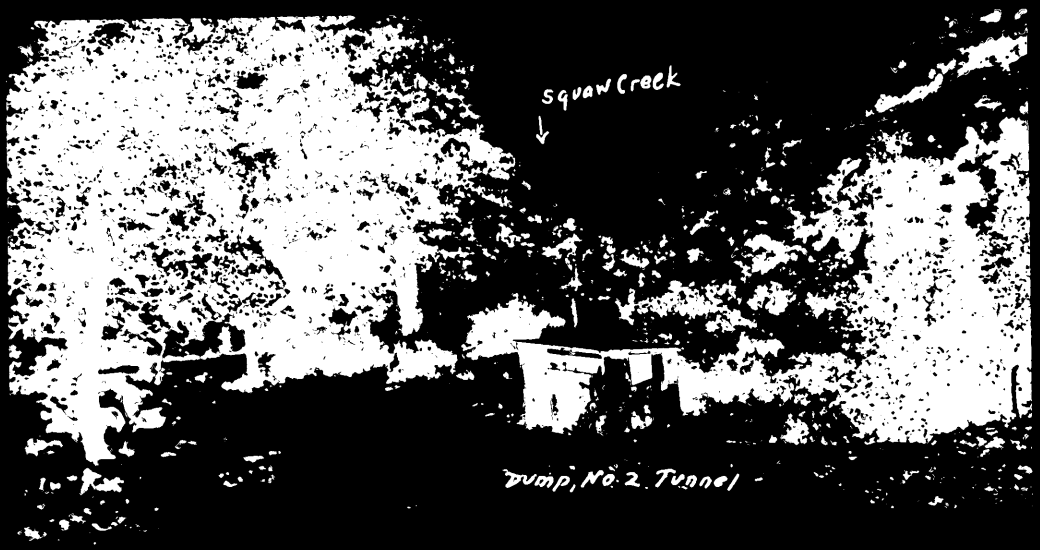


Photo 6- Looking south along cat-road north of No. 3 Tunnel, showing alta, seep and ledge rock.

Entrance to
No. 1 Tunnel


Squaw Creek
Dump, No. 2 Tunnel

Edward H. Raczeic
114 Cole Street
Clovendale, California

Photo 6- Looking south along cut-road north of No. 3 Tunnel, showing adit, seep and ledge rock.

DMEA Form 7
(12-56)

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Date	Surname	Code
10-17	Chapman	400
10-17	Martin	400
10/18	Selfridge	130
10/18	Johnson	110
"	Mittendorf	100
10/18	G B O	220
		225

OCT 18 1957

Mr. Edward Haczela
114 West Street
Cloverdale, California

Re: Docket No. DMEA 4770 - Mercury
Black Oak Mercury Claim No. 1
Sonoma County, California

Dear Mr. Haczela:

Your application for exploration assistance and other data available to us in Washington concerning the referenced property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgement, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position of the National Defense Program.

Careful study of all our information, although noting the occurrence of mercury mineralization on your property, indicates to us that the probability of disclosing significant ore reserves by your proposed work is not sufficiently promising to justify Government participation. Under these conditions we regret to advise you that your application is denied.

Enclosed is Report on Black Oak Quicksilver Prospect by Edward Wisser, which is being returned at your request. We wish to thank you for your interest in the Defense Minerals Exploration Administration program and for bringing this property to our attention.

Sincerely yours,

C. O. Mittendorf

Administrator

TLChapman/dlm 10-17-57
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. II
Messrs. J. W.Pennington, USBM
T. H.Kiilsgaard, USGS

Enclosure

8623

MEA Form 7
12-56)

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Date	Surname	Code
10-15	Chapman	400
10-15	Martin	400
		130
10/17	Kilgaard	130
10/16	Lahut	130
		110
		100
		220

Mr. Edward H. Haczela
114 West Street
Cloverdale, California

Re: Docket No. DMEA 4770 - Mercury
Black Oak Mercury Claim No. 1
Sonoma County, California

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Sincerely yours,

TLChapman/dlm 10-15-57

cc to: Code 400 FT. REG. II
Admr. R. File Messrs. J. W. Pennington, USBM
Oper. Comm. T. H. Kiilsgaard, USGS

Enclosure

Administrator

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(12-56)

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Date	Surname	Code
10-15	Chapman	400
10-15	Martin	400
		100

October 15, 1957

MEMORANDUM

To: Administrator, DMEA

From: Division of Iron and Ferro-Alloys, DMEA

Subject: Denial of the subject application for exploration assistance in the amount of $34,359.20
Docket No. DMEA -4770, Mercury
Edward H. Haczela
Black Oak Mercury Claim, No. 1
Sonoma County, California

Denial of the subject application is recommended by this Division based on the following information.

The Applicant, Mr. Edward H. Haczela, on June 18, 1957, applied for exploration assistance on the above-noted property at an estimated cost of $34,359.20 for site preparation with a bulldozer and 700 feet of drifting. The property was examined on July 30 and 31, 1957, by R. H. Campbell and R. M. Smith, Geological Survey, and J. D. Warne, Bureau of Mines, accompanied by E. H. Haczela and R. E. Thompson.

Applicant: Edward H. Haczela
114 West Street
Cloverdale, California

Property Ownership: The property consists of one patented lode mining, Claim Survey No. 6542, located in section 2, T. 11 N., R. 9 W., M.D.B. and M. The Applicant has a lease on the property for a period of seven years beginning January 1, 1956. The owners are Ralph E. Thompson, and Ada J. Thompson, of Cloverdale, California.

Geology: The rocks of the area are Franciscian shale, greenstone, and sandstone. The chert is in beds from one to six inches thick, interbedded with shale. Underground the bedded chert is in fault contact with overlying greenstone. All known ore is restricted to the fractured chert fault zones. It is indicated that the maximum depth of the chert beds is about one hundred feet and this would be the maximum depth of mineralization. The cinnabar occurs in the fractured cherts along fault zones in small lenses.

Past History and Production:

The discovery of cinnabar was made in 1940. Most of the exploration and mining work was performed during the period 1940-1945. About five flasks of mercury were produced from ore zones in the Nos. 2 and 3 adits, from selectivly mined and sorted ore.

Development:

Mine development consists of three separate adits (Nos. 1,2 and 3). All reported production is from a small stope in Tunnel No. 2 and two small ore bodies in Tunnel No. 3. All mine workings are caved except Tunnel No. 1, which is open for 80 feet. The only recent work done on the property is a bulldozer cut at the mouth of Tunnel No. 2 and an open cut at the proposed site of a new tunnel, 76 feet lower in elevation.

Proposed Work:

The Applicant proposes a new adit to explore the ground about 70 feet below the ore bodies reported in Tunnel No. 3. The total work requested is 700 feet of drifting and crosscutting at an estimated cost of $34,359.20.

Ore Values and tonnage:

There are no measured or indicated ore reserves. Two samples were taken as follows:

Sample No.	Lbs. Hg/ton	Description
1	1.6	1 foot chip sample from zone showing veinlets at face of Tunnel No. 1.
2	1.0	Specimen sample across mineralized zone at face of new cut at Tunnel No. 2.

The Applicant estimates that inferred ore in two bodies in Tunnel No. 3 amounts to 1650 tons averaging 5 to 8 pounds of mercury per ton, and in Tunnel No. 2 the ore body is inferred to contain 4,000 tons averaging 5 pounds of mercury per ton.

Comments and Conclusions:

The Field Team recommends denial of the project. The field examiners conclude that any inferred reserves are small and low grade. There does not appear to be any exploration target that indicates a probability of finding any ore bodies of significant size and grade.

Memoranda of the Commodity Divisions of the Geological Survey and the Bureau of Mines, concur in the conclusions and recommendations of the Field Team.

W S Martin

W. S. Martin, Director
Division of Iron and Ferro-Alloys

Mr. Selfridge -

Division possibly believes a significant discovery would not be made by any alternate program.

Frank E. Johnson

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

September 27, 1957

Memorandum

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

From: Assistant Chief, Branch of Base Metals

Subject: Review of Field Team examination report, Docket No. DMEA 4770 (mercury), Edward H. Haczela, Black Oak Mercury Claim No. 1, Sonoma County, California. $34,359

The applicant proposed to explore for mercury mineralization by 700 feet of drifting and crosscutting at an estimated total cost of $34,359.

Examination of the property indicated that inferred reserves are of marginal grade and relatively small. The examiners conclude that the proposed exploration targets are vague and poorly defined, and offer only a remote possibility of a significant discovery.

I concur with the recommendation of the Field Team that the application for DMEA assistance be denied.

J. W. Pennington

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U. S. G. S.
F. D. Lamb
F i l e s

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IN REPLY REFER TO:

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

September 26, 1957
Re: DMEA 4770
Edward H. Haczela
Black Oak Claim
Sonoma County, California
$34,359.00 - Mercury

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 assistance in exploring by cross-cutting and drifting a complex mercury-bearing structure from which 5 flasks of mercury are said to have been won.

The sturcture has been developed by 3 adits. Only a small tonnage of ore has been recovered and the controls governing the deposition of the cinnabar are not defined except that the mineralization is confined to a band of thin layers of chert and alternating interbedded laminae of shale, beneath a thrust fault, the alta of Wisser.

The good grade mineralization appears to be related to cross faults and the small quantity of ore recovered has come from pockets in or near such faults.

The examiners and Field Team regard unfavorably the somewhat venturesome deep work proposal of the applicant. Instead they offered a modest work program in a center of mineralization. The applicant refused to participate in such 'go easy' work. Therefore the examiners and Field Team recommend that the application be denied.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

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9/30	WSM	400

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
1605 Evans Avenue
Reno, Nevada

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RECEIVED SEP 25 1957

DATE	INITIALS	CODE
9/25	B	220
	esf	130
9/30	[illegible]	220
	WSM	400

September 23, 1957

Memorandum

To: Operating Committee, DMEA, Interior Building
Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-4770 (Mercury)
Edward H. Haczela
Black Oak Mercury Claim No. 1
Sonoma County, California
(Your letter, July 11, 1957)

Enclosed are three copies of a report on subject property by J. D. Warne, Bureau of Mines, and R. H. Campbell, Geological Survey.

Roscoe Smith and I concur in the recommendation that the application for DMEA exploration aid be denied.

S. Ricker

Attachments

Reviewed by
DMEA OPERATING COMMITTEE
9/27/57
(date)

ON SITE EXAM

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DMEA
RECEIVED SEP 25 1957

DATE	INITIALS	CODE
9/30	WSM	400

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION II

APPLICATION REPORT

DMEA-4770 (Mercury)
Mr. Edward H. Haczela
Black Oak mine
Sonoma County, California

Reviewed by
DMEA OPERATING COMMITTEE
9/27/57
(date)

by

J. D. Warne
U. S. Bureau of Mines

R. H. Campbell
U. S. Geological Survey

September 18, 1957

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Introduction	1
Conclusions and Recommendations	1
Location, Property, and Ownership	2
History and Production	2
Development	3
General Geology	4
Ore Deposits	6
Sampling	10
Ore Reserves	10
Exploration	11

ILLUSTRATIONS

Figure 1 . . . . . Index map

2 . . . . . Surface geologic map

3 . . . . . Underground geologic map

4 . . . . . Mineral Survey Plat

INTRODUCTION

Mr. Edward H. Haczela, 114 West Street, Cloverdale, California, applied for Government assistance in a $34,359 program under the Defense Minerals Exploration Administration, docket DMEA-4770, to explore for mercury on the Black Oak Mercury Claim No. 1, Sonoma County, California.

The mine was examined by R. H. Campbell and R. M. Smith, U. S. Geological Survey, and J. D. Warne, U. S. Bureau of Mines, on July 30 and 31, 1957, accompanied by E. H. Haczela and R. E. Thompson.

CONCLUSIONS AND RECOMMENDATIONS

The inferred reserves are of marginal grade and relatively small size. Moreover, the total reserves are divided among three separate ore bodies, two of which are close together but separated from the third by about 400 feet of unexplored ground. The unexplored ground is in a graben block and is probably barren at the elevation of the known ore bodies. It may contain mineralized chert at depth, but because it has not been adequately prospected no exploration target within it can be inferred. The proposed exploration targets are vague and poorly defined, and offer only a remote possibility of a significant discovery. We recommend the application be denied.

LOCATION, PROPERTY, AND OWNERSHIP

The Black Oak Mercury Claim No. 1 is in sec. 2, T. 11 N., R. 9 W., M.D.B.&M., in the extreme northwestern part of the Mayacmas quicksilver district, Sonoma County, California (fig. 1). From Cloverdale, California, the mine is reached by way of the paved and graveled Geyser Road a distance of approximately 14 miles to Dewey's store, thence by a steep unimproved access road which crosses Sulphur Creek and continues northerly a distance of about 3 miles. The property is accessible by means of a four-wheel-drive vehicle during dry periods throughout the year.

Property (fig. 2) included in the application consists of the single patented claim, Black Oak Mercury Claim No. 1 Lode, Survey No. 6542; owned by Ralph E. Thompson and Ada J. Thompson of Cloverdale. Edward H. Haczela, the applicant, has a lease on the property for a period of seven years beginning January 1, 1956.

HISTORY AND PRODUCTION

The discovery of cinnabar and original location of the Black Oak mine property was made by Mr. Ralph E. Thompson in 1940. A patent survey of the claim was made during 1953. Most of the exploration and mining work was performed during the period 1940-1945.

Mr. Thompson claims that a production of five flasks of mercury was derived from ore produced from the No. 2 and 3 adits.

DEVELOPMENT

Mine development consisted of three separate adits (Tunnels No. 1, 2, and 3). Some stoping has been done in Tunnel No. 2 on a small, low-grade ore body. All reported production is from the stope in Tunnel No. 2 and two parts of Tunnel No. 3. ~~All reported production is from the stope in Tunnel No. 2 and two parts of Tunnel No. 3.~~ All of the mine workings are now caved except Tunnel No. 1 which is open for about 80 feet.

The only recent work done on the claim consists of a bulldozer cut at the portal of the No. 2 Tunnel, and an open-cut at the site of a proposed (by applicant) new adit portal northeastward of Tunnel No. 3 and 76 feet lower in elevation.

No surface facilities or mining equipment remain on the property, with the exception of a small, partly wrecked, 2-pipe Rossi-type retort.

GENERAL GEOLOGY

The mine area is on a steep north-facing hillside, most of which is covered with thick colluvium, including abundant talus and landslide debris, in which is developed generally thick soil with abundant vegetation. With the exception of a small landslide scar and scattered exposures in the bottom of a steep-walled gully, bedrock is exposed only at the adit portals, in the workings, in one bulldozer trench, and for a short distance along one road cut. Because of the cover and the inaccessibility of Tunnels No. 2 and No. 3, the examiners relied heavily on information furnished by the applicant. The information consists of maps and reports by Edward Wisser, mining geologist, San Francisco, California, June and July 1943, and oral communication of R. E. Thompson, owner, July 31, 1957. In addition, E. H. Bailey of the U. S. Geological Survey supplied information from his files, including maps and memorandum reports by E. B. Eckel, C. M. Swinney, and P. F. Fix of the U. S. Geological Survey from examinations in 1943 and 1944. So far as could be determined by comparison with accessible workings and outcrops, the information supplied from these sources is reliable. The geologic map of the mine area (fig. 2) was compiled chiefly from Wisser's maps.

The rocks of the area are Franciscan shale, chert, greenstone, and sandstone (Wisser, 1943; and Swinney, 1944). Blocks of shaly mudstone were observed in subsoil exposed in bulldozer cuts and stream beds at altitudes about 100 feet below the portals of the existing workings which are in chert. The chert is in beds from one to six inches thick, interbedded with shale in laminae generally one inch or less in thickness. In the underground workings the bedded chert is in fault contact with overlying greenstone which Wisser believes to be probably a thick sill of altered volcanic rock; however, at surface exposures near the portals of Tunnels No. 1 and No. 3, sandstone overlies the chert along what appears to be the same fault surface. Sandstone is also reported in fault contact with chert along a northeast-trending fault exposed in Tunnel No. 2 (fig. 3).

Although the thin-bedded chert is highly fractured, locally intensely folded, and faulted in blocks of widely varying size, the beds strike generally N 35° - 50° E and dip 35° to 50° NW. As all known ore is restricted to the fractured chert, its thickness is a critical feature. A maximum thickness between the overlying fault and underlying shale is inferred to be about 100 feet.

The fault contact of the chert with the greenstone and sandstone is the alta of Wisser. It strikes generally about N 30° W. Near the surface it is flat or gently-dipping to the southwest, but underground the dips reported are from 25° to 60° SW. Hill creep probably has modified the dip near the surface. Along the fault is a gouge zone, two feet or less thick, of brecciated rock. Northeast-trending cross fractures are abundant. Two of them offset the alta in Tunnel No. 2. One strikes about N 30° E and dips 56° to 77° NW and the other strikes about N 65° E and dips about 75° SE. The block northeast of the N 30° E fault appears to be a graben and on the basis of a water seep believed to be controlled by the offset alta fault Wisser infers a movement of about 65 feet. At the N 65° E fault the offset of the alta has been mapped (fig. 3) and Wisser reports that the southeast block is down about 20 feet relative to the northeast block.

ORE DEPOSITS

The ore deposits consist of spots of cinnabar up to one-quarter inch in diameter and, more rarely, of very thin seams of cinnabar as coatings on fracture and bedding plane surfaces in the chert. The chert is locally intensely frantured into chunks generally about one inch on a side. Most of the chert is only sparsely mineralized. Although fractures are abundant, relatively few carry visible cinnabar.

Mineralization, therefore, was not pervasive throughout the fractured chert but was restricted to local areas within it by other controls. Wisser believed the alta fault zone to have been important in localizing the ore, perhaps as an overlying barrier to ascending solutions. The known deposits, however, are not intimately associated with the alta but occur 25 feet or more from it.

There is some indication, particularly in the deposit mapped in Tunnel No. 2, that the northeast-trending cross faults may have controlled ore deposition to some extent. The N 30° E fault near the portal of Tunnel No. 2 contains a few discontinuous seams of cinnabar up to one-eighth inch in thickness, and other fractures adjacent to the fault are also locally mineralized. In addition, several northeast-trending fractures in Tunnel No. 1 are weakly mineralized in contrast to relatively barren fractured chert in intervening blocks. The mineral occurrences along the northeast-trending faults indicates that mineralization was younger than all the prominent fracture systems and no significant post-ore faulting has affected the deposit.

Two ore bodies are reported to be exposed in Tunnel No. 3 by Mr. Thompson, and an ore body in Tunnel No. 2 was mapped by

Swinney. The areas developed by these groups of workings are separated by an unexplored block of ground in the graben between Tunnels No. 2 and No. 3. The chert has not been exposed or prospected in the graben area, although it may be mineralized there as well as in the areas of Tunnels No. 2 and No. 3. The thickness of the gently-dipping chert controls the maximum possible downward continuation of the ore bodies. It seems unlikely that ore extends the full thickness of the chert, but even if it does the maximum depth to be expected probably does not exceed 100 feet. It is possible to infer a longer ore shoot raking parallel to or at an acute angle to the dip of the chert; however, there is no evidence on which to base the assumption of such a rake.

The ore body exposed by Tunnel No. 2 has been partly stoped and its outline mapped by Swinney (fig. 3). The deposit appears to be associated with the N 30° E fault near the portal of Tunnel No. 2 and may be localized by the small, wedge-shaped horst between this fault and the N 65° E fault. The stoped area indicates that about 140 tons of rock was mined. About half the material was sub-ore grade (one to two pounds Hg/ton) and about half the material was ore grade (up to an estimated seven pounds Hg/ton). Thompson reports that 50 tons of this ore was stockpiled

and that two to three flasks of mercury was recovered from the remaining 90 tons. Corrected for metallurgical losses (50 percent in concentrating, 20 percent in retorting), this indicates a grade of about five to six pounds per ton. These factors indicate that this material would have to be selectively mined or sorted.

In the northwesternmost workings of Tunnel No. 3 (fig. 3), Thompson reports ore with an estimated grade of eight pounds per ton in a body five feet wide and about 30 feet long. The ore body is in fractured black chert and is apparently controlled in part by the thickness and distribution of the black chert although the southwestern assay boundary cuts across the chert bed at an acute angle. Ore from the drift was concentrated and retorted and three flasks of mercury was recovered. Thompson's estimate of grade appears to be reasonable.

In Tunnel No. 3, at its junction with the northwest drift, an ore body was cut by the main adit. Thompson estimates an average grade of five pounds per ton and reports a width of five feet and a length of 12 to 15 feet. The southeast side was not exposed. The ore body is in fractured gray chert. Thompson also reports that the gray chert between the two No. 3 ore bodies is weakly mineralized and suggested the possibility of a weakly defined "ore zone" connecting them.

SAMPLING

Two samples were taken from the only accessible mineralized exposures on the property and are shown on figure 3.

Sample No.	Lbs. Hg/ton	Description
1	1.6	1-ft. chip sample from zone showing thin cinnabar veinlets at face of Tunnel No. 1.
2	1.0	Specimen sample across mineralized zone at face of new cut at Tunnel No. 2.

ORE RESERVES

There are no measured or indicated reserves. The inferred reserves for the three ore bodies are based on the assumption that they extend as much as 75 feet vertically through the chert. The northwest ore body in Tunnel No. 3 is inferred to contain 750 tons of ore in a body 5 feet wide and 36 feet long having a grade of six to eight pounds Hg per ton. The southeast ore body in Tunnel No. 3 is inferred to contain about 900 tons of ore in a body 10 feet wide and 15 feet long with a grade of five pounds Hg per ton if an additional five feet of width is assumed in the unexplored southeast rib of the drift. The ore body in Tunnel No. 2 is inferred to contain 4,000 tons of material in a body 15 feet by 45 feet, about half of which is ore having a grade of five to seven pounds Hg per ton. The total inferred reserves for all three bodies is 3,650 tons of ore that averages about six pounds of Hg per ton. There is no evidence indicating that ore of appreciably higher grade is present in the deposit.

EXPLORATION

The applicant proposed a new adit with the portal north of the portal of Tunnel No. 3 (fig. 2) to explore the ground about 70 feet vertically below the ore bodies reported in Tunnel No. 3. At a point about 200 feet south of the portal the drift was to turn 90 degrees to the east to explore the alta in the graben area. Eventually the drift was to be extended to some point vertically below the stoped area of Tunnel No. 2. A total of 700 feet of drifting and crosscutting was requested at an estimated cost of $34,359.

This exploration would include much crosscutting in barren and unfavorable ground. In addition, too little is known of the factors controlling the size and orientation of the ore bodies to project an exploration target to the proposed depth. The applicant's estimated unit costs for performing the work are high; and his previous exploration and mining experience is limited.

These factors were discussed with the applicant and several alternative programs were suggested. Considering the small size and low grade of the ore, the most reasonable program would be to rehabilitate the old workings and winze on the ore in order to determine factors controlling the size, grade, and orientation of the ore bodies. Deeper exploration should be postponed until the exploration targets at depth can be better defined. Although the applicant stated his

willingness to undertake a less ambitious and costly program than originally proposed, he is unwilling to consider rehabilitating the existing workings and sinking on the reported ore bodies.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURV

DMEA-4770
(Mercury)

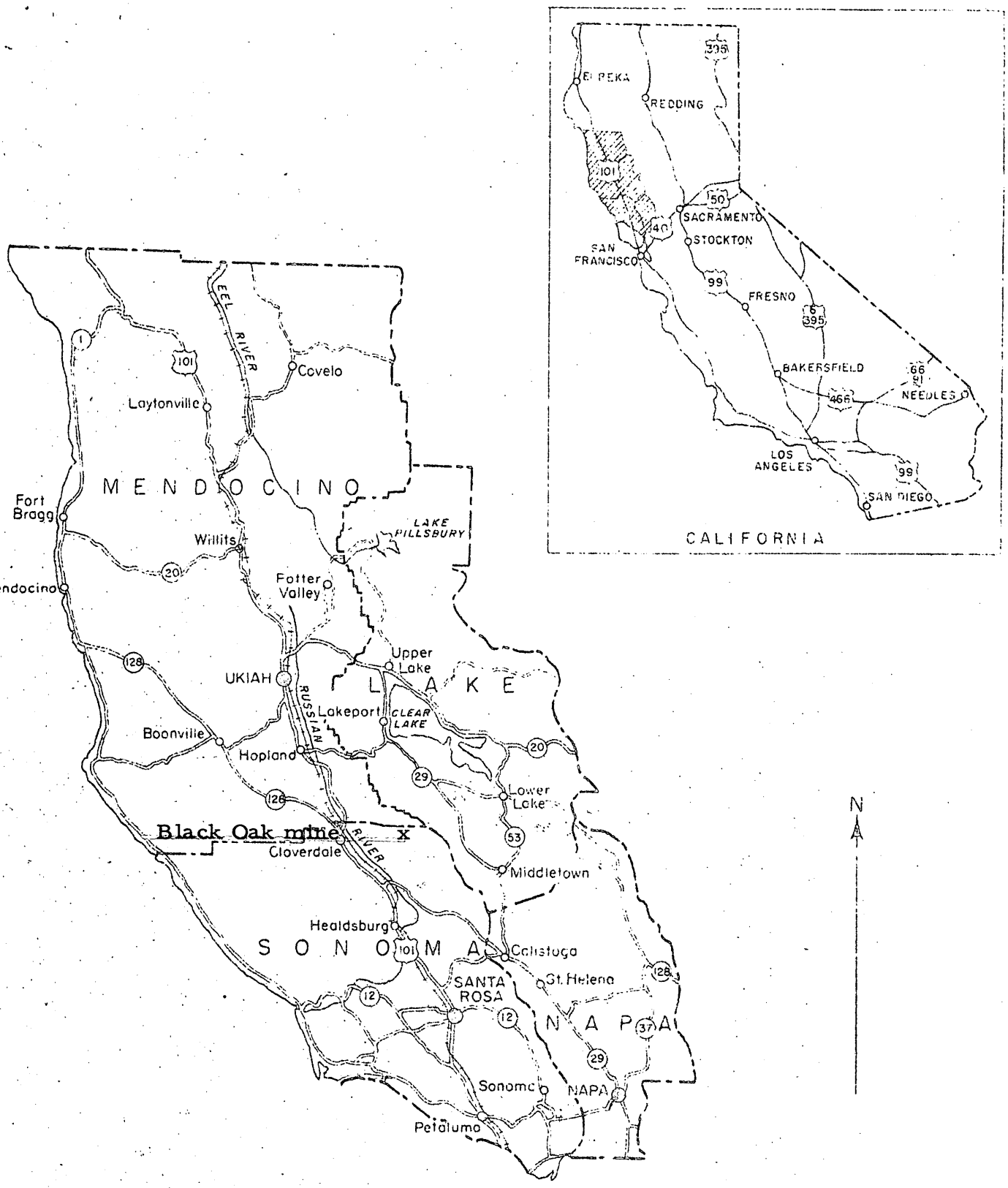

Figure 1. INDEX MAP OF LAKE, MENDOCINO, NAPA, AND SONOMA COUNTIES, CALIFORNIA

0 20 40 60 Miles

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DMEA-4770
(Mercury)

T. 11 N., R. 9 W., M.D.M.

NE. $\frac{1}{4}$ Sec 2

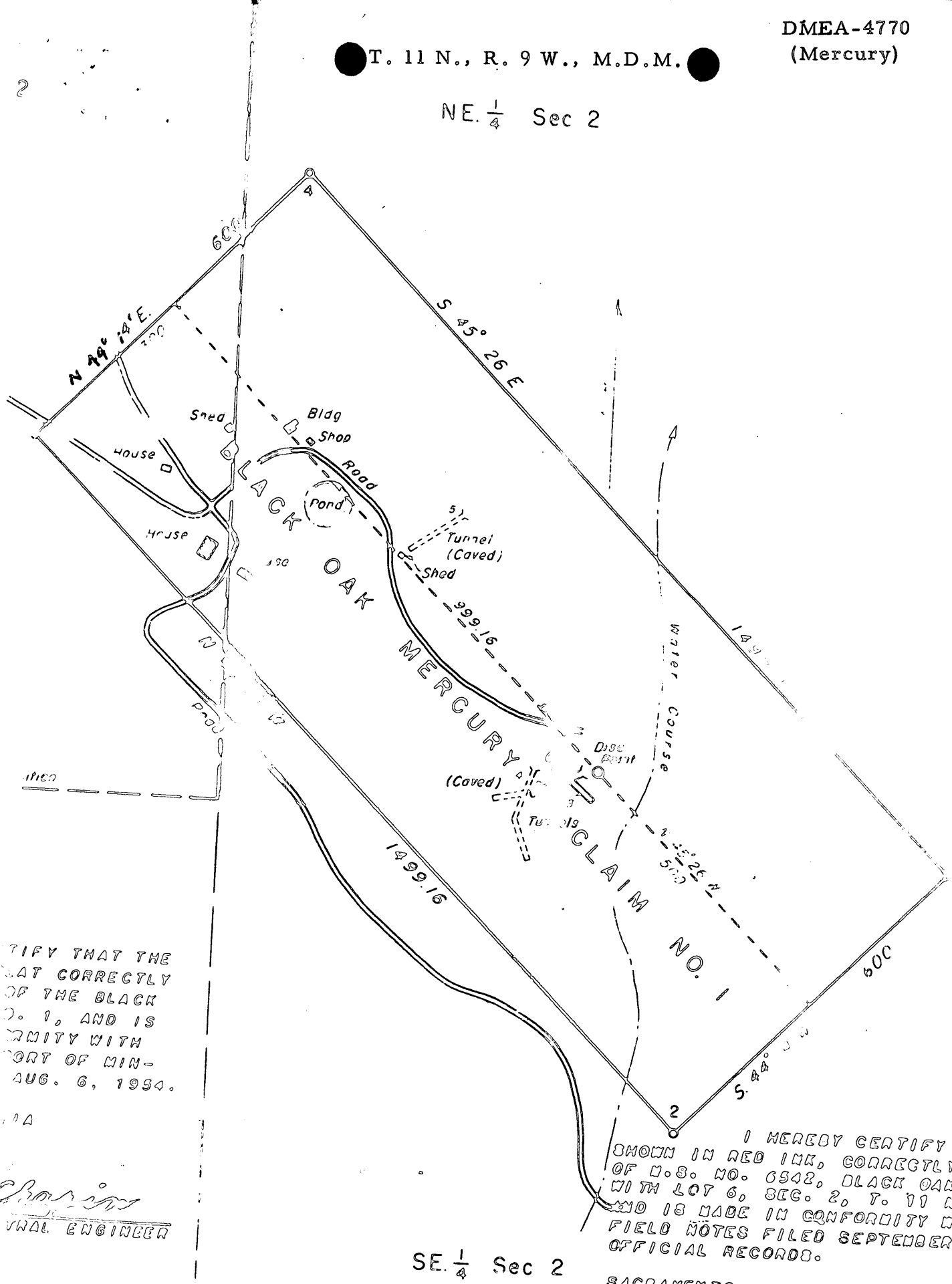

FIG. 4

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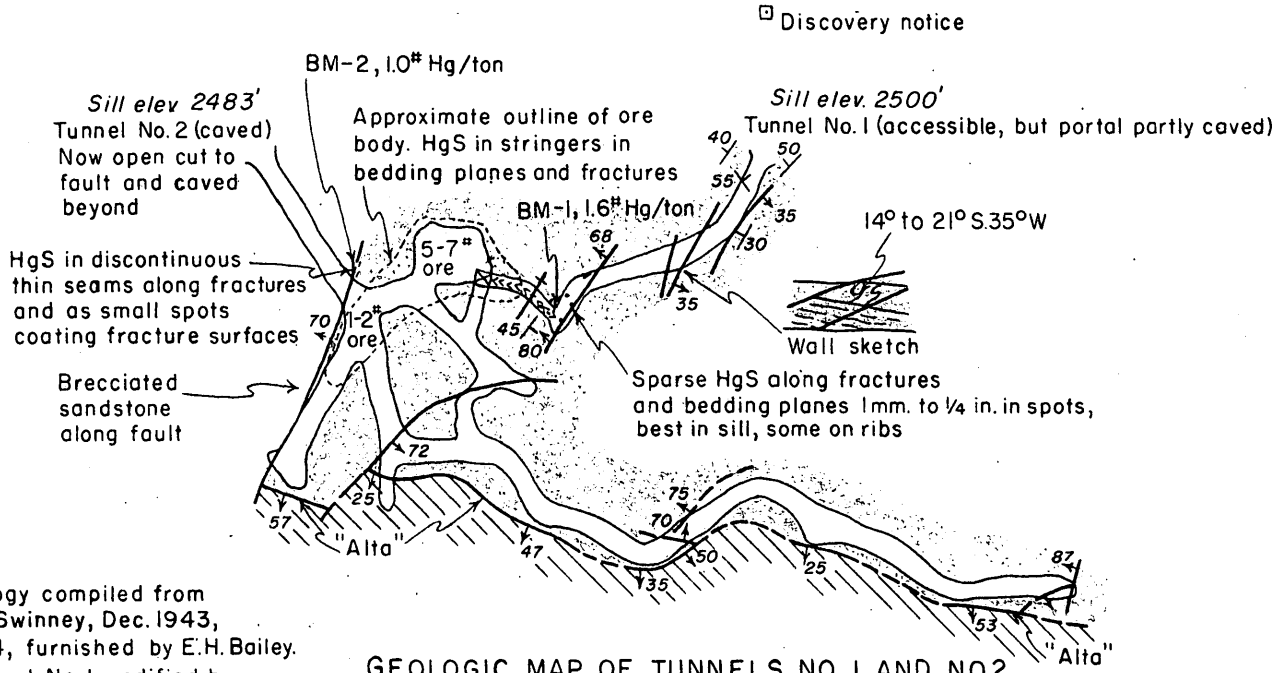
DATE	INITIALS	CODE



Plan and geology compiled from maps by C.M. Swinney, Dec. 1943, and April 1944, furnished by E.H. Bailey. Geology of Tunnel No. 1 modified by R.M. Smith and R.H. Campbell, July 1957

GEOLOGIC MAP OF TUNNELS NO. 1 AND NO. 2

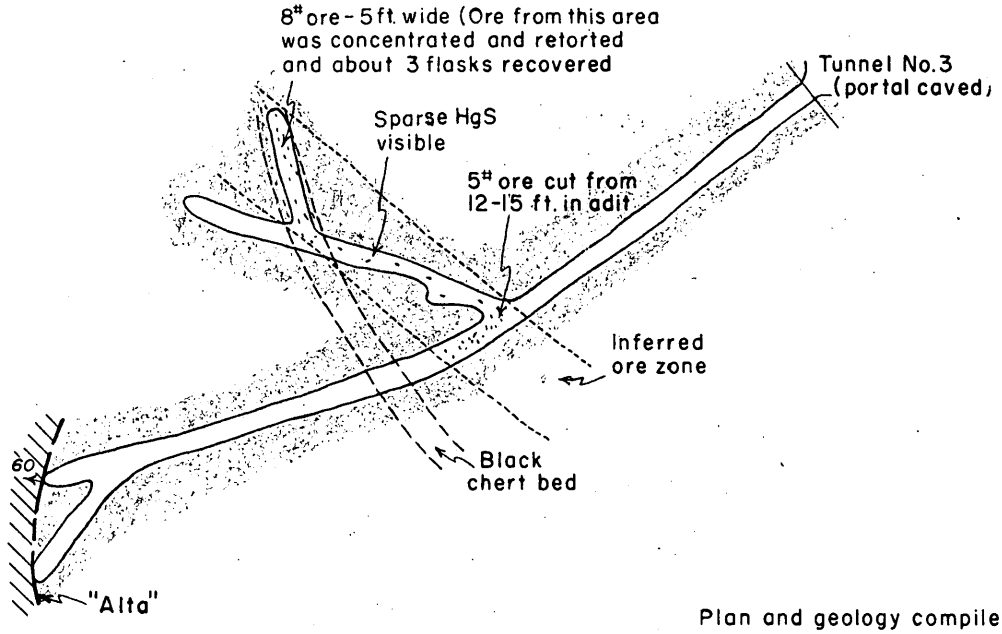
EXPLANATION

Greenstone

Sandstone

Chert

Visible cinnabar



GEOLOGIC MAP OF TUNNEL NO. 3

Plan and geology compiled from maps furnished by R. Thompson and map by C.M. Swinney furnished by E.H. Bailey. Information on black chert bed, on grade and distribution of ore, and production is from R.E. Thompson, oral communication. July 1957

Figure 3. BLACK OAK MERCURY MINE, SONOMA COUNTY, CALIFORNIA

40 0 40 80 Feet

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D M E A
RECEIVED SEP 25 1957

DATE	INITIALS	CODE

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
7-8	Holt	400
7-8	Martin	400
7/10	GCS	130
"	Johnson	110
"	Chatterton	100
7/11	P.K.	220
		400

JUL 11 1957

Mr. Spangler Picker, Executive Officer
DMEA Field Team, Region II
1605 Evans Avenue
Reno, Nevada

Re: Docket No. DMEA 4770 - Mercury
Edward H. Bacsela
Black Oak Mercury Claim No. 1
Sonoma County, California

Dear Mr. Picker:

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

Copies of memoranda dated July 1, 1957, by D. E. Nelson, Geological Survey, and J. W. Pennington, Bureau of Mines, relating to the application, are enclosed.

Also enclosed is an extra copy of the application for the use of the Field Team.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

APPROVED:

O. M. Bishop (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

SPHolt/dlm 7-8-57
cc to: Docket
Code 400
Admr. R. File
Oper. Comm.
FT. REG. II
Messrs. J. W. Pennington, USBM
T. H. Kiilsgaard, USGS

Enclosures

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
7-8	Holt	400
7-8	Martin	400
7/10	Selfridge	430
		130
		130
7/10	Johnson	110
7/10	Rutenberg	100
		220

JUL 11 1957

Mr. Edward H. Haczela
114 West Street
Cloverdale, California

7/10 OM Bishop (130)
Kilsgaard 130
7/10

Re: Docket No. DMEA 4770 - Mercury
Black Oak Mercury Claim No. 1
Sonoma County, California

Dear Mr. Haczela:

The above-docketed application for exploration assistance for mercury ores has been reviewed by the Washington office of the Defense Minerals Exploration Administration and referred to Mr. Spangler Bicker, Executive Officer, DMEA Field Team, Region II, 1605 Evans Avenue, Reno, Nevada, for a field examination of the property.

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

Sincerely yours,

C. O. Mittendorf (for)

Administrator

SPHolt/dlm 7-8-57
cc to : Docket
Code 400
Admr. R. File
Oper. Comm.
FT. REG. II
Messrs. J. W. Pennington, USBM
T. H. Kiilsgaard, USGS

8623

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 2 1957

DATE	INITIALS	CODE
7/2	C	220
7/3	RLC	400

IN REPLY REFER TO:

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

July 1, 1957
Re: DMEA 4770
Edward H. Haczela
Black Oak Mine
Sonoma County, California
$34,359.20 - Mercury

Memorandum

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

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

Subject: Review of application

The applicant requests assistance in exploring by cross-cutting and drifting an inferred ore structure from which 5 flasks of mercury have been produced.

The work program is based on a report and earlier program of a consultant written in 1943. Probably the 1943-44 work did not result favorably. The general geologic conditions are said to be similar to those at a nearby mine, but the comparatively large footage of work done appears not to have been productive of mercury.

Referral of the application to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

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

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 2 1957

DATE	INITIALS	CODE
7/2	C	220
7/2	[illegible]	400
~~July 1, 1957~~		

Memorandum

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

From: Assistant Chief, Branch of Base Metals

Subject: Review of application, Docket No. DMEA 4770 (mercury)
Edward H. Haczela, Black Oak Mine, Sonoma County, California

The applicant proposes to explore two fault zones for mercury mineralization by approximately 700 feet of drifting plus some bulldozing work at an estimated total cost of $34,359.20.

It appears that the two fault zones could be explored by a more efficient and less costly program. Both zones could be reached by less drifting than proposed and perhaps it would be well to consider some exploratory drilling.

I recommend that the application be referred to the Field Team. If the fault zones are worthy objectives, I think the proposed program of exploring the objectives should be evaluated.

The application is returned herewith.

J. W. Pennington

J. W. Pennington

Enclosure
Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U. S. G. S.
F. D. Lamb
F i l e s

COPY

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

June 27, 1957

Mr. Edward H. Haczela
114 West Street
Cloverdale, California

Subject: DMEA-4770

Dear Mr. Haczela:

Your application for exploration assistance, dated June 18, 1957 submitted to our office at Reno, Nevada has been assigned Docket Number DMEA-4770 and referred to the Iron and Ferro Alloys Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to: Region II

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA 4770
(MERCURY)

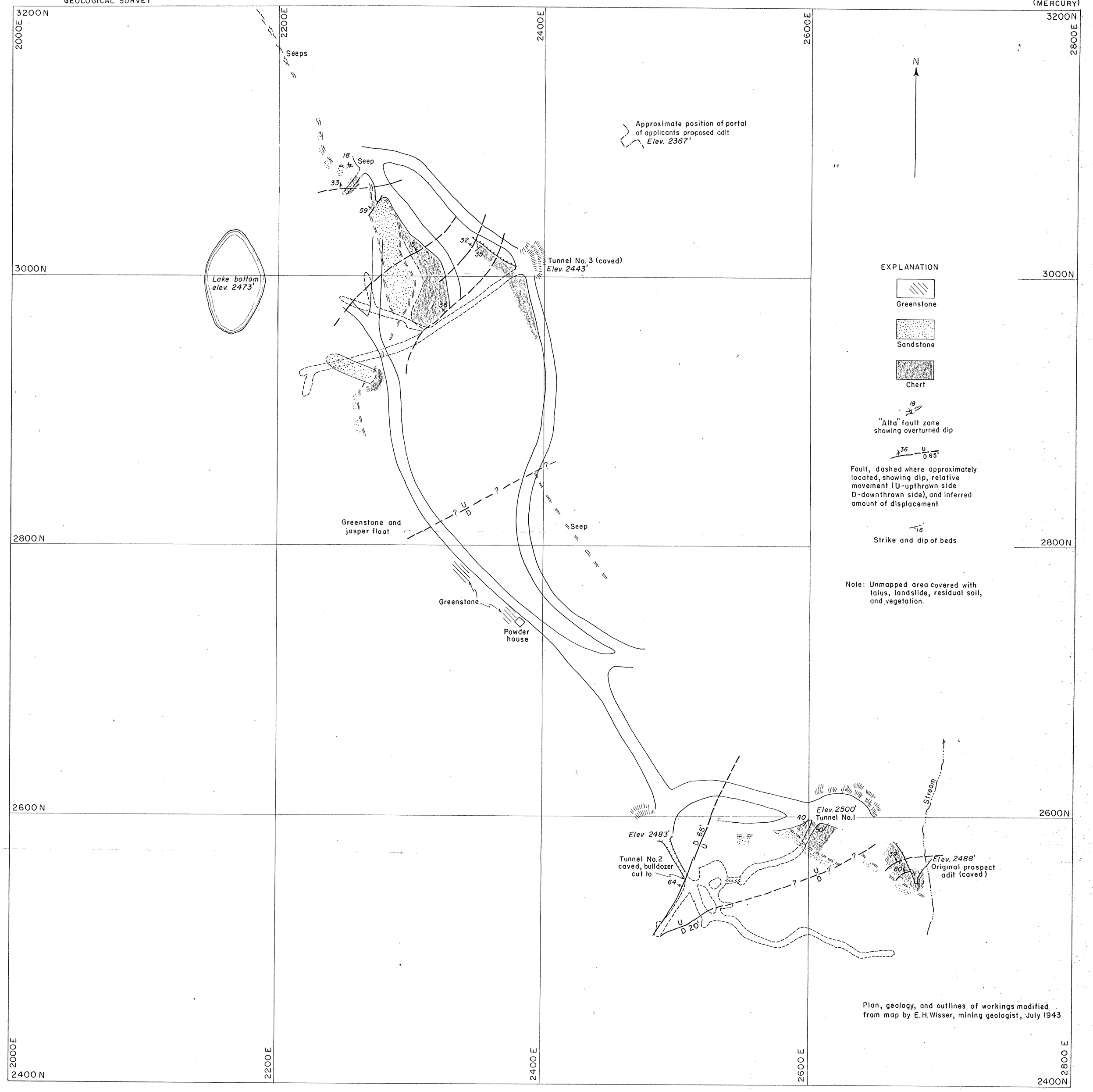

Figure 2. GEOLOGIC MAP, BLACK OAK MERCURY MINE, SONOMA COUNTY, CALIFORNIA

40 0 40 80 Feet

BLACK OAK MERCURY MINE

SONOMA COUNTY——CALIFORNIA

GENERAL PLAN

SCALE: 1 Inch = 40 Feet.

Traced from compass base by E. H. Wisser.

Mapped to date: 7-31-1943.