MME Form 9
Rev. Nov. 65

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

OFFICIAL DOCKET FILE Contract No. _____ Docket No. 6708

Application
- [x] Denied
- [x] Withdrawn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
- [x] 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 Semiannual 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) 7/9/68
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. _____: Reports
- [ ] Analysis of Semiannual Inspection Reports
- [ ] Project Summary (Interim) by MME Engineers

Right Side

- [ ] Field Team Semiannual 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

72195-65

IN REPLY REFER TO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Memorandum

April 2, 1968

To: Chief, Office of Minerals Exploration
Washington, D. C.

From: Field Officer
Region II

Subject: New Application (Mercury)
Clements & McCulloch
Helen Mine
Lake County, Calif.

OFFICIAL COPY
O. M. E.
RECEIVED
APR 4 1968
INITIALS | CODE

Enclosed is an Application for Financial Assistance in mercury exploration at the Helen Mine, Lake County, California, received in the Field Office on April 2, 1968.

The application is well prepared and documented. Detailed cost estimates are given for the work proposed. Although these costs are considerably higher than currently allowed on other OME projects in this this region they are probably realistic as to the actual cost of doing the work.

H. K. Stager

Enclosure

Office of Minerals Exploration
345 Middlefield Road
Menlo Park, California 94025

April 2, 1968

Mr. William C. McCulloch
632 Occidental Avenue
San Mateo, California 94402

Dear Mr. McCulloch:

Your application for financial assistance in an exploration project at the Helen Mine, Lake County, Calif. was received in the Field Office this morning and has been forwarded to Washington, D. C. for processing.

Sincerely yours,

H. K. Stager
Field Officer
OME, Region II

cc: Chief, OME, WDC
Dir RF
ACG RF
MP RF
Docket
HKStager:mlb
4-2-68

MME Form 40
Jan. 65

Budget Bureau No. 42-R1508
Approval expires Dec. 31, 1968

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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INITIAL CODE

APPLICATION FOR FINANCIAL ASSISTANCE IN MINERALS EXPLORATION

Pursuant to Public Law 85–701 (72 Stat. 700; 30 U.S.C. 641)

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

Clements + McCulloch
Helen Mine, a Joint Venture
P. O. Box 305
Middletown, California 95461

APPLICANT DO NOT USE THIS BLOCK

DOCKET NUMBER: 6708

DATE RECEIVED: April 24, 1968

REGION: II

DIVISION CODE:

BUSINESS ORGANIZATION *(Check one)*

- INDIVIDUAL [ ]
- CORPORATION [ ]
- PARTNERSHIP [ ]
- OTHER *(Specify)* [X] Joint Venture

STATE IN WHICH FIRM IS ORGANIZED:

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

NAME	ADDRESS	TITLE
Richard R. Clements & Sons	5351 E. Broadway Long Beach 3, Calif.	
William C. McCulloch	632 Occidental Ave. San Mateo, Calif.	

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE: Mercury

ESTIMATED COST OF PROJECT: $ 160,056.00

PROPERTY NAME	LOCATION COUNTY	STATE
Helen Mine	Lake	California

GENERAL INSTRUCTIONS

Before filling out this application, please read the *OME Regulations for Obtaining Federal Assistance in Financing Explorations for Mineral Reserves* (30 CFR Chap. III). 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 two 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 2, existing mine workings and geology in item 3, and the proposed exploration work in item 5. 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 3(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 Office of Minerals Exploration, Department of the Interior,* ~~Washington, D. C., or with the nearest OME Field Office.~~ Washington, D. C., 20242, or with the nearest OME 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, and that he would not ordinarily undertake the proposed exploration under current conditions and circumstances at his sole expense.

October 15, 1967
DATED

W. C. McCulloch
BY *(Signature)*

Joint Venturer
TITLE

Richard R. Clements & Sons:
By: R. R. Clements
By: Richard R. Clements

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. Financial Eligibility:

(a) Submit evidence of efforts made within 90 days preceding the filing of this application to obtain credit from your bank of account and at least one other banking institution or other private source of credit. Such evidence shall include true copies of correspondence which show: (1) date of loan request, (2) amount and terms requested, (3) proposed use of loan funds, and (4) the replies from credit sources. If the loan was offered under terms which you consider unreasonable, state why you consider them so.

(b) List names and addresses of affiliated, parent, or controlling companies or organizations and state extent and nature of their interest.

(c) State how you propose to furnish your share of the cost of the exploration work.

2. Applicant's Rights in Land:

(a) State your interest in the land and mineral rights, whether owner, lessee, purchaser under contract, or other. If you are not the owner, submit one true copy of the lease, contract, or other document (with address of owner) under which you control the property. Describe all liens, mortgages, or other encumbrances on the land and state book and page number and official place where recorded.

(b) 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 adjacent land which you own or control. Describe any part of the land or workings which should not be subject to Government royalty and liens. If the land consists of unpatented claims, state book and page number for each recorded location notice, including amended locations, and official place where recorded. State all the names by which you know the property.

(c) For all land or mineral rights encumbered or not owned, submit five copies of Lien and Subordination Agreements on MME Form 52. If the agreements cannot be obtained, state reasons and provide copies of letters of refusal.

3. 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 land. Include existing mine workings and all production facilities.

(b) State your interest, if any, in operations described in (a).

(c) State, if 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, giving quantities and grades and sampling methods used. Support 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 have, indicating whether you require their return.

4. Accessibility of Property:

(a) To aid the OME representative who may examine the property, state name and address of person who will meet him; give directions for reaching the property; and describe accessibility of property and of any mine workings.

(b) Name the shipping and supply points and state the distances to the property.

5. Exploration Work:

(a) Describe fully the proposed exploration work giving individual footages and sizes of openi[illegible] *for each item of work.* Use narrative, maps, plans, and sections as necessary. Show 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 *land boundaries* or to the closest identifiable corner.

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

(c) If an OME contract is executed, state how soon thereafter work would be started and finished. State your anticipated average daily or monthly rate of progress for each type of work.

6. Experience:

State your operating experience and background to conduct this exploration work and also that of the person who will supervise the work.

7. Estimate of Costs:

Furnish detailed estimates of the necessary costs *for each item of the work proposed in 5(a)* under the headings listed below with a total for each heading and the estimated total cost of the work. Costs for any work to be performed by an independent contractor should be listed separately under category (a) below. Costs for any work that is not to be performed by an independent contractor should be listed under categories (b) through (g).

(a) Independent contracts. State the total cost of any proposed independent contract for all or any part of the work, and the number of units and the unit cost for each type of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, or 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. The cost of supervision, engineering and geological services, outside consultants, and labor should be itemized by numbers and classes of employees; rates of wages, salaries or fees; and periods of employment. State whether these services are available.

(c) Operating materials and supplies. List items of material and supplies giving quantity and cost of each. 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 equipment and tools costing $50 or more per unit. Give specifications and indicate how each item is to be acquired—i.e., rented, purchased or provided by the applicant. If rented or purchased, state the estimated rental or purchase price. If furnished by the applicant, state condition and present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of *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 in the exploration work.

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

(g) Miscellaneous. Describe the type and estimate the cost of repairs and maintenance of the operating equipment listed in 7(d). Do not repeat initial repairs listed in 7(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*—The Government will not contribute to costs incurred before the date of the contract, or to costs of or incident to: (1) acquiring, using, or possessing land and any existing improvements, facilities, buildings, installations, and appurtenances, or the depreciation and depletion thereof; (2) general overhead, corporate management, interest and taxes (other than payroll and sales taxes); (3) insurance (other than employees' liability insurance); and (4) damages to persons or property (other than authorized repair to or replacement of equipment or other property used in the work).]

I[illegible] DUP. SEC., WASH., D.C

WILLIAM C. McCULLOCH
MINING ENGINEER AND GEOLOGIST
632 OCCIDENTAL AVENUE
SAN MATEO, CALIFORNIA 94402
PHONE 347-8527

April 1, 1968

U. S. Geological Survey
Office of Mineral Explorations
c/o Mr. Harold Steger
345 Middlefield Road
Menlo Park, California 94025

Dear Mr. Steger:

Pursuant to conferences and telephone conversations, attached hereto, in duplicate, copies of an Application for Mineral Exploration at the Helen Mine in Lake County, California.

It will be appreciated if you will advise if the application is in suitable form for submission to your office.

Very truly yours,

W. C. McCulloch

Enc.

cc: Mr. Richard R. Clements
811 Citizens National Bank Bldg.
453 South Spring Street
Los Angeles, California 90013

Klau Mine, Inc.
57 Post Street
San Francisco, California 94104

Mr. Floyd A. Kibbee
P. O. Box 305
Middletown, California 95461

RECEIVED
APR 2 1968
OFFICE OF MINERALS EXPLORATION
U.S. GEOLOGICAL SURVEY
MENLO PARK, CALIF.

APPLICATION HELEN MINE

PREAMBLE:

There is submitted herewith the following data to support this application for financial assistance for mineral exploration work on a portion of the Helen Mine, Lake County, California.

1. Letter from Wells Fargo Bank denying request for a loan for exploration work at the Helen Mine.
2. Letter from Crocker-Citizens National Bank denying request for a loan for exploration work at the Helen Mine.
3. Copy of "Lease and Option Agreement" dated July 1, 1964 between Klau Mine, Inc., Lessor and William C. McCulloch, Lessee.
4. Copy of Agreement between Fred H. Lenway and Company and Richard R. Clements & Sons by which Richard R. Clements & Sons acquired the interest in said Lease and Option Agreement dated July 1, 1964, granted by McCulloch to Lenway and Company by Partial Assignment and Joint Venture Agreement dated June 1, 1965 and modified by letter dated September 24, 1965.

By virture of the above mentioned instruments, Helen Mine, as described in said lease and option is now jointly held under said lease and option agreement from Klau Mine, Inc. by Richard R. Clements & Sons, a partnership composed of:

1. Richard R. Clements
   5351 East Broadway
   Long Beach, California 90803

2. Richard R. Clements
   811 Citizens National Bank Bldg.
   453 South Spring Street
   Los Angeles, California 90013

3. John H. Clements
   5707 Murietta Avenue
   Van Nuys, California 91401

and

4. William C. McCulloch
   632 Occidental Avenue
   San Mateo, California 94402

Please see attached to the form, a geological report on the Helen Mine, with supporting maps and illustrations. Also, attached is an estimate of the cost of completing the Helen Mine, Hondo Tunnel Project.

The Joint Venture is currently operating and producing mercury for sale on a continuous and regular basis from a portion of the described property and the Helen Mine is fully equipped to run the proposed tunnel. The Joint Venture proposes to finance its share of the cost of the project by equipment contributions and cash as detailed in the estimate. Currently the Helen Mine is operating at a profit, there are no outstanding accounts payable, and a balance for operating expenses is maintained in the Middletown Branch of the Wells Fargo Bank.

The Joint Venture uses as an office at Middletown the offices of Mr. Floyd Kibbee, Accounting, who can give directions for

reaching the mine.

The work will be directed by W. C. McCulloch, a graduate mining engineer from the Mackay School of Mines, University of Nevada, class of 1935.

Experience: Managed and developed Helen Mine from 1964 to present.

1946 to present, Chief Geologist, Southern Pacific Company, 65 Market Street, San Francisco, California 94105.

1935-1944, Mining Engineer in U. S., Colombia, Venezuela and Brazil.

1944-1946, Lieutenant, U.S.N.

William C. McCulloch

William C. McCulloch

[illegible]
[illegible]
MIDDLETOWN, CALIFORNIA 95461

February 14, 1968

Arthur Mayo, Manager
Wells Fargo Bank
Middletown, Calif. 95461

Dear Mr. Mayo:

We would like to apply for a commercial loan, from the Wells Fargo Bank, at the interest rate of 6½% per annum or at your established commercial rate, payable over a period of from 5 to 10 years. Amount of Loan $160,056.00.

The above mentioned loan would be used for an exploration project, consisting primarily of a 5 x 7 feet tunnel of sixteen hundred feet in length. Enclosed is a breakdown of the estimated costs of the proposed project.

Sincerely,

Floyd A. Kibbee

Floyd A. Kibbee
for
Helen Mine
William C. McCulloch &
Richard R. Clements

March 1, 1968

Mr. John K. Powell
Assistant Vice-President
Crocker-Citizens National Bank
457 S. Spring Street
Los Angeles, California 90013

Re: Helen Mine

Dear Mr. Powell:

On behalf of Helen Mine, a joint venture consisting of this partnership and Mr. William C. McCulloch, we should like to apply for a commercial loan, from the Crocker-Citizens National Bank, at your established commercial rate, in the sum of $160,056.00 payable for a period of 5-10 years.

This loan would be used by the joint venture for an exploration project consisting primarily of a five by seven foot tunnel sixteen-hundred feet in length. We enclose a resume of the estimated cost of the proposed project.

Very truly yours,

RICHARD R. CLEMENTS & SONS

By _____
Richard R. Clements

Joint Venturer of Helen Mine

RRC/pmf

cc. Mr. Richard R. Clements
Mr. John H. Clements

Since 1852

WELLS FARGO BANK

MIDDLETOWN OFFICE
CALISTOGA STREET
MIDDLETOWN, CALIFORNIA 95461

February 14, 1968

The Helen Mine
W. C. McCulloch, partner
P. O. Box 305
Middletown, Calif. 95461

Dear Mr. McCulloch,

We have reviewed your request for a loan in the amount of $160,056.00 for a term of 10 years for the purpose of exploration work at the Helen Mine.

We are unable to accomodate you on this request as the request does not conform to the bank's lending policy.

Sincerely yours,

Patrick K. Tremor
Assistant Manager

PKT/dt

CROCKER-CITIZENS NATIONAL BANK
CHARTERED 1870

457 SOUTH SPRING STREET · LOS ANGELES 90054

March 1, 1968

The Helen Mine
% Richard R. Clements & Sons
453 South Spring Street
Room 811
Los Angeles, California

Dear Mr. Clements:

We are writing in response to your recent request for a loan of $160,056, for a period of five to ten years, for the purpose of exploration work at the Helen Mercury Mine.

We are sorry that we must decline this request, as a loan of this nature, and for this length of time, does not qualify to our bank's present lending policy.

Sincerely,

John K. Powell
Assistant Vice President

JKP:mw

WILLIAM C. McCULLOCH
MINING ENGINEER AND GEOLOGIST
632 OCCIDENTAL AVENUE
SAN MATEO, CALIFORNIA
PHONE 344-2175

Potential of The Helen Mercury Mine
Lake County, California

Location and Access

The Helen Mine is situated on the east flank of Pine Mountain, at the head of the north fork of Dry Creek, in the East Mayacmas Mining District, seven road miles west of Middletown, Lake County, California, in Sections 1 and 12, Twp. 10N., Rge. 8W., MDM. Topography and accessibility are shown on the Calistoga quadrangle map, scale 1:62,500, published by the United States Geological Survey in 1959.

History and Production

The Helen Mine, formerly known as the "Dead Broke" and "American", was first mentioned in published literature in 1861 (1), when a "level had been driven in for 265 feet". Subsequently, the two claims were patented in 1874 by Pushbecker. First recorded production was 128 flasks in 1873 (2) and total production by Pushbecker was over 900 flasks to 1875(3) when the American Mining Company purchased the deposit and installed a ten stamp mill followed by 12 retorts. Average yield was 2% or 40 lbs. per ton(4). This plant has a recorded production of 2500 flasks(3). In 1900, the property was acquired by Andrew Rocca, who equipped the mine with a 60 ton-a-day Scott Furnace. Mr. Rocca worked the mine to the Fall of 1920 when metal price dropped to $40.00 per flask. Subsequently, the main or lower tunnel caved and has not been reopened since. In 1922, the property was leased by Balch and Gould, and in 1924, a 20-25 ton a day Gould Rotary furnace was installed. Treatment in this plant of the old Rocca Scott Furnace bricks recovered 200 flasks and paid for the new plant. In 1928, the property was purchased by H. W. Gould and Company from the Rocca Estate. It is now owned by Klau Mine, Inc., a Gould subsidiary and is held under lease and option by the undersigned.

Total production through 1941(3) is reported to be 14,778 flasks. Recorded production 1903 to 1942 is 6,851 flasks(5). Subsequent to 1942, an additional 100 flasks were produced in 1955-56.(6)

From published literature, it is apparent that the production from 1873-1900 all came from ores developed in the No. 1 ore shoot.(See attached map) The 1900-1920 period developed and mined ores from the No. 1, No. 2 and No. 3 ore shoots. The 1920 to 1942 period developed the No. 4 ore shoot or extensions of the Nos. 2 and 3 above the third level, and the 1955-56 period explored but did not discover or mine the No. 5 ore shoot.

From October 14, 1966 to September 22, 1967, the No. 5 ore shoot has produced 416 flasks from ore yielding an average of 5.52 lbs./ton.

Summarizing production records, it seems reasonable to credit 10,767 flasks to the property over its operating history to date.

Previous Work

The workings, most of which are old and inaccessible, consist of over 6000 feet of tunnels on three principal levels designated as the Main or 400 level, the Santa Maria or 300 level, the Peterson or 70 foot level and the Primavera Level on the extreme South East extension, which is presently producing.

The surface of a portion of the property and accessible workings were mapped in June and July, 1943, by Lowell S. Hilpert and James Cathcart of the U.S. Geological Survey.(5) Additions to this mapping have been made by the writer 1964-67.

Work Completed in 1965-66

Commencing on June 14, 1965, the Southeast Adit was reopened, cleaned out and placed in working condition. The 60 foot long winze from this adit to the -40' sub-level constructed by previous operators was retimbered where necessary although it was found to be in generally good shape.

New work was initiated at the southerly limit of the south stub drift eleven feet southeast of the edge of the winze and the central cross cut run 45' into the foot wall (c-xc on map). This work was encouraging, exposing two crossings of ore, the first called Hanging Wall Vein, 14.5 feet wide with bulk samples from every car averaging 8.5# mercury, the second, called Footwall Vein, 9.0 feet wide averaging 6.77# mercury with the entire 45 feet of new work averaging 4.99# mercury.

The work of outlining horizontal limits to this discovery then proceeded by drifting 51.4 feet south in ore averaging 10.26# mercury for 32 feet and 7.09# for the distance, then driving the south cross cut (s-xc on map) 20' northeasterly and 25' southwesterly from the south end of the drift. This crossed five feet of ore @ 5.34# mercury which is believed to be the foot wall vein extension. The work to the southwest did not cut the hanging wall vein and was stopped in heavy ground, it being decided more would be developed for the money by prospecting with the north cross cut (n-xc) rather than fight for footage in this heading. The north cross cut was started 26 feet northerly of the edge of the winze and cut ore from 8.4 to 29.0 feet or 20½ feet averaging 8.94# mercury, thought to be a consolidation of

both the hanging and footwall veins at this location since extension of this cross cut to 65' did not pick up ore in the straight line projection of the footwall vein. A drift was then turned to the north from this extension and produced 65 tons of ore in 18 feet averaging 16.6# mercury, but was directed to the footwall and left the vein on the right.

In summary, 212 feet of new work was completed as of September 10, 1965 on the -40 sub-level, of which 116 feet are in ore and 96 feet in waste. The ore and waste were sampled by grabs from the top of each 18 cubic foot mine car mucked with the samples consolidated and assayed for each day's advance, cars judged ore grade were segregated.

September 15, 1965, a cross cut tunnel was started from a topographic location 70 feet vertically below the -40 sub-level. The tunnel intersected the dip projection of the vein at 620' but was not in ore at this point. A raise was driven to the sub-level. The raise, 96 feet long on the 55° dip of the structure, was driven in the footwall to the -40 level. The raise intersected ore grade material at 40' and continued for 46 feet to the connection. Average assays for car samples from this 46 feet indicated about 6# Hg in the ore zone. Average of all samples was 20.64#, but the cut samples including one of 115#, are not considered representative. In general, the purpose of the raise was to establish a second exit, required by law, provide circulating ventilation and for gravity transfer of ore to the haulage level below. It is essential that the raise not be disturbed by future mining operations, and it was therefore located in about 2/3 ore, 1/3 footwall waste.

During the period starting September 15th, to April 20th, a 20' x 32' Armco framing shed, a 12' x 40' dry house and mine office building, a 12' x 20' generator building and an 80' x 20' plant building, 1600' of 18" 20# rail tramway from mine to plant, a water piping system of 4000' of piping, water and oil storage tankage, were constructed. The buildings were equipped with tools and wired into a 125 kva generator. The plant, a 20 tons a day 3' x 36' Gould rotary kiln with condensor system, screening and crushing and waste calcine disposal started operating on October 11, 1966 and has treated ore to date.

Geology

The geologic setting is described in the reports cited under "previous work" above.

In general, they describe an ultramafic mass originally peridotite but now pervasively altered to serpentine with structurally controlled alteration to "silica carbonate" which is in fault contact with a Franciscan complex.

Drill holes through the hanging wall Franciscan rocks, completed in February, 1965, show the lithology to be made up of non-correlative lenses of shale, sandstone, glaucophane-schist and clay. Some of the black shale in proximity to the main fault contains veinlets of quartz with pyrite common and local cinnabar.

The Franciscan rocks have apparently been thrust over the ultramafic mass. In the footwall of this thrust, an irregular zone of silica carbonate rock has been formed which ranges from a few to 500 feet wide. Basalt dikes, now altered to white clay, and locally mineralized, were intrued into the ultramafics and along the main fault prior to the formation of silica carbonate. These dikes are irregular in plan, discontinuous and variable as to strike and dip.

From underground exploration completed to date and a review of past results of exploration at the Helen Mine, it is evident that the mineral occurrence as a whole is confined to an extensive shear zone in altered serpentine from 50 to 500 feet wide and proven on strike for about 2,000 feet long and for up to 300 feet below outcrop.

Within this shear zone and always bounded on at least one side by localized internal faults, are a number of lenses of ore. They are random in size and location within the zone. They vary from 20 to 40 feet wide by 140 feet long to small isolated occurrences of a few tons.

The two lenses discovered by exploration at the Helen Mine in 1965, which have been designated the No. 5 ore body, illustrate the ease with which such occurrences can be overlooked, since they were discovered within four feet of rather extensive exploration openings made by previous operators. To explore this extensive shear zone efficiently and provide a basis for long term operation, it will be necessary to traverse the shear zone at close intervals both on strike and dip. The most economic method recommending itself is to drift on strike and raise on dip at about 100 foot intervals, projecting the work from known occurrences where possible, and from these openings, using a proprietory drill, long hole both walls.

It has been proven that ore can occur in the middle of the zone or on either or both walls, and it lenses both on strike and dip. When, however, a lense of average size is found, it can be expected to provide 10-20,000 tons of good grade material. The frequency of discovery thus need not be high but the effort should be continued on a regular schedule.

A drainage pattern approximately normal to the main fault

suggests a series of parallel cross faults with the development of separate fault blocks and a possible relation to mineralization.

Summary of Structural Episodes and Ore Genesis

I Intrusion of peridotite in a Franciscan complex.

II Thrust faulting, shearing and brecciation.

III High-angle normal faulting.

IV Intrusion of basalt dikes.

V Mineralization

1st stage - Hydrothermal alteration of serpentine breccia to silica carbonate and pyrite.

2nd stage - Cinnabar in silica carbonate, altered basalt and hanging-wall shale.

VI Cross faulting, with readjustments along main thrust fault.

VII Landslides bounded by cross faulting.

Physical Aspects of the Ore Bodies

No. 1 Ore Area

The No. 1 ore area was apparently worked as three separate ore bodies. It has been reported(5) that a large percentage of the silica-carbonate rock has been stoped between the surface and the sub-level below the San Juan tunnel and for about 120 feet wide over an 80 feet strike length in the vicinity of the Beatrice tunnel(8). Mine maps after Rocca's working map, outline the No. 1 ore shoot over a 200' strike length. It apparently was not uniform in grade or size and was worked on a selective basis to provide ore of economic grade, probably around 20 lbs. per ton. There is little to no subsidence over the area, indicating that stopes were tight filled, or had competent walls, or that a large percentage of the "vein material" was left as supporting pillars. It is believed the 400 level tunnel was used only as a haulage way for ores developed above it, and the silica carbonate was relatively unmineralized at this level. This is indicated by existing maps and by the negative results of drill holes #6 and 7, shown on attached map.

It is believed there is a good to fair possibility of developing additional open pit ores of approximately 1 to 2 lbs. per ton

above and in the margins of the old stopes in this section of the property.

No. 5 Ore Body Prior to Exploration Work Completed in 1965-66

The No. 5 ore body is discussed here rather than in sequence since it may be an easterly extension of the No. 1 ore body discussed above. The Northwesterly known limits of this occurrence are only 110 feet from the reported southeasterly limits of the No. 1 ore body and further development may connect them.

This part of the property was first explored in the 1930's by L. S. Peterson, a lessee, who removed and furnaced a small amount of reported 9 lb. ore from a surface opening about 20 feet deep. In 1953, the S.E. adit was run by a lessee and intersected ore about 50 feet below the surface. In 1955-56, the adit was further extended and a 60' winze sunk from it which was above ore. (See attached cross-section and plan). It 1965, two drill holes showed the ore to be present between 120-135 feet from the surface and 70 feet below the adit. To the southeast of hole #8 - 280 feet away, there is a sparcely mineralized silica carbonate outcrop, and a 50' x 8' pit 16' deep in the footwall of this occurrence is reported to have produced ore in 1955. Underground exploration is proceeding on strike to the southeast on the footwall veins. It seems apparent now that the Peterson work, which is on the Franciscan, Serpentine contact, indicates another ore occurrence not exposed by work in the No. 5 ore body. It projects 30-40 feet westerly of the nearest open workings in this area as does its projection to the pit mentioned. To date this projected ore occurrence has not been checked underground.

Ore Reserves Indicated by 1965-66 Work on the No. 5 Ore Body

It is not possible to place positive limits of size and grade on the No. 5 ore body with the exposures open to us at present. The occurrences where exposed, however, are of good grade over economic mining widths. By reference to the map and x-sections of these workings, attached, it may be seen that two lenses previously unknown have been partially outlined, and that one previously developed occurrence has some ore potential. Due to their location relative to the general dip of the shear zone, the two new lenses have been designated as "Hanging Wall Zone" and "Footwall Zone". The indicated tonnage and grade between the South East Adit level and the lower haulage level, is as follows:

		Indicated tons @ 14 cf/ton
Hanging Wall Zone:		
Average width	16.6'	
Developed length & 20' each way	110'	
Measured dip length	70'	
Average Grade sampled	8.0#	9,130 @ 8.0# = 73,040#
Footwall Zone:		
Average width	8.0'	
Developed strike length & 20'	80.0'	
Measured dip length	105.0'	
Average grade sampled	9.16#	4,800 @ 9.16# = 43,968#
Major Fault Zone:		
Average width	3.0'	
Developed length	60.0'	
Measured dip length	60.0'	
Average grade sampled	5.2#	771 @ 5.2# = 4,009#
Total		14,701 @ 8.23# = 120,977#

No. 2 Ore Body

The No. 2 ore shoot may be related to a hade of the No. 4 ore shoot. This is indicated by descriptions of the developments in the Santa Maria level(3) where it is described as worked from the 400 or lower level to the surface. The West pit lies directly above these workings and is either a surface subsidence above stopes or, what is more probable, from its appearance and the dump piles on its margins, was a hand worked pit on the surface expression of the No. 2 ore shoot. If it is related to the No. 4 ore shoot as indicated by the mine plan, the two developed mineralization on the Santa Maria level for a strike length of about 500 feet. It is believed that below the West pit there is a geological probability of developing 60,000 to 100,000 tons of material that can be treated. This is supported by the results of D.H. No. 3, which intersected 13 feet of material logged as "black shale", which averaged 1.09# per ton above an old stope, and by D.H. #4, which intersected 5 feet of similar material. If this "shale" was uniformly left in the hanging wall of the old works, it might provide ore to a pit at this location.

The hanging wall portion of Ore Shoot No. 2 was worked 42' below the 400 level, and at this location, old maps show it to have been about 50' long. It was reported to have averaged 8 lbs. per ton for the 9,000 tons mined in 1920 from the 400 level and below. The vertical extent of this ore shoot should be checked by a cross cut below the 400 level.

The East pit is an unimpressive surface cut over the No. 3 ore body about 30 feet deep at the face. The sides have sluffed in and covered any showing that may be present. It evidently contained enough values to produce some ore to early operations. There is some altered basalt exposed in an old stope on the west margin of the dike where it is cross cut by the Santa Maria tunnel that assays 8.0 lbs. Hg per ton, and it is evident that considerable above level stoping was done at this location.

No. 4 ore shoot is probably related to No. 2 ore shoot, as shown by dashed lines on attached map. In 1943, it was reported(3) that sampling indicated 8,500 tons of ore averaging 5# mercury per ton in this general area of the mine. The Santa Maria adit was surveyed, geologically mapped, and some sampling done in July, 1943 by Hilpert and Cathcart. Mr. E. H. Bailey has this unpublished data on file(9).

Additional Exploration Targets Indicated by Geology

Extensions of Ore Shoots Nos. 2 and 3 or new ore bodies might be present under the central 400 foot wide landslide area. It is geologically improbable that the silica carbonate zone and strong fault to the northwest and southwest of the landslide area would not continuously extend below it, although this has been accepted as a probability by earlier operators. A casual examination of the composition of the landslide debris where exposed in section by creek erosion shows it to contain rock masses of 10-15' dimensions. The scouring action of such massive fragments would be nearly as great as glacial action in eroding evidence of a connecting silica carbonate zone weakened by cross faulting along the margins of the slide area. In any other exposed 400 foot strike section of the developed portion of the mine, ore bodies have been present and it is geologically and statistically indicated that others might be discovered in this one.

The Helen and Young American claims cover a strike length on the Main Fault of 4,353 feet. Mine development has explored 1700 feet of this total, or 39%. The balance of 2,453 feet is unexplored subsurface. On the developed portion, 1,500 feet are known to contain silica carbonate believed favorable to ore deposition and 570 feet of this, or 33%, was found to be mineralized with mercury enough to mine. The unexplored portion to the southeast of the No. 5 ore body is now being explored by extension of mine workings.

Mineralogy - Occurrence of Ore Minerals

Four basic types of ore mineral occurrence have been observed at the Helen Mine, each requiring distinct technology

for separation and recovery of mercury if pre-furnace concentration is considered. All will concentrate in a furnace.

These are:

I. A relatively easily crushed, shattered, silicified serpentine containing a boxwork of veinlets of cinnabar from knife edge to 1/2" thickness, which break free from the gangue and separate on crushing to relatively high-grade particles. Ore of this type will concentrate by gravity separation if not ground too fine. It is common to Ore Shoot No. 5.

II. A hard, fine-grained, black, dense, opaline rock containing veinlets of cinnabar and much pyrite. Ores of this type occur as included lenses. The No. 2 ore body in the vicinity of the 400 level is so described, and rock of this type is noted on the Beatrice and Dike Tunnel dumps and in all three rock dumps. This rock is generally relatively higher grade than Type I and probably would best respond to treatment by direct furnacing with concentrate from other types. It does not constitute the major ore occurrence and could be segregated in mining if found to be unamenable to pre-furnace concentration methods applicable to other ores.

III. Disseminated fine-grained, "paint", generally oriented along and below fault gouges, with argillaceous gangue. It breaks down into slimy gangue and ore particles, with water, and probably would not concentrate well to gravity but should respond well to flotation.

There are transitions between Types I and III. Type II, due to its hardness, is generally sharply segregated, but small nodules of black opaline silica are locally noted in the No. 5 ore shoot, but constitute only a minor percentage of the ore content.

IV. Basalt with veinlets and disseminated grains, altered to clay, which is relatively soft and should respond to a slime product amenable to gravity and flotation respectively.

There are unconfirmed reports of "sandstone ore" in the No. 2 crosscut of the 400 level just north of the No. 1 ore shoot. Hole #7 did not confirm this occurrence, and projections of the strike of the main fault to the area indicate the entire x-cut should be in the footwall ultramafic section, rather than in the hanging wall Franciscan sandstone.

The mine has produced approximately 10,770 flasks to a maximum depth of 300 feet below the surface. It is reasonable to expect that ores occur at greater depth. Other mines in the district have been developed at depths of 75-1000 feet. Down dip

extensions are a reasonable expectation in the Helen Mine. The topography is such that a cross cut below the 400 foot level is possible. The costs to explore for deeper ores are therefore modest compared to those that could be expected in other mines of this overall potential.

Proposed Exploration

A low level x-cut below and oriented to the down dip extension of the No. 3, No. 4 and No. 2 ore bodies would test the down dip potential of three ore zones known on the Santa Maria level and, if continued to the Franciscan Serpentine, contact explore a fourth area indicated and recommended for exploration by Hilpert and Cathcart in 1943. No reliable observer has mapped the "400" level, which has been inaccessible since 1920. I discussed, in 1964, the 400 level potential with Fred Herman of Middletown who worked as a miner on this level just prior to its closing in 1920. Unfortunately, Mr. Herman can no longer verify his statements, and his comments are offered for lack of other direct observation. He stated that about 4,000 tons of ore averaging 8 lbs. were indicated for the No. 3 ore body above the 400 level at the time it was closed.

Attached map (Plate 1) shows location, course and elevation of the proposed x-cut. On course it would traverse about 830 feet of what is expected to be sheared but barren, altered serpentine. Exposures along the North Fork of Dry Creek northwest of the proposed portal site and negative results of exploration in the "Reward" cross cut with portal located about 600 feet northwest and run normal to strike trends support this theory. There are, however, mineralized footwall structures and hydrothermal alterations that project to this interval from the Chicago "vein" to the northwest, the Reward outcrop area and the area designated as "Old Shaft", shown on Plate 1. These projections are not, however, significant when considered with other observations mentioned.

Between 830 feet and 960 feet is the projected location of the down dip extension of the No. 3 ore body, with ore potential on both walls of a basalt dike. Ore grade mineralization can also be demonstrated in the altered basalt above the Santa Maria tunnel level at the westerly margin of the dike. Reports of "ore" on the "400" level also describe a similar occurrence(3) and (5).

Depending for location on observable geology, it is proposed at about 900' to construct a station from which a raise would be driven to provide a second exit and ventilation for the works to this point. The raise would be expected to be driven in mineralized material, be near vertical and hole out on the Santa Maria

level 130' above the project tunnel. Since the 400 level pre 1920 workings were driven on a grade to provide a gravity tram from this point 2300 feet to the 400 level portal, it is expected the actual interval between the "400" level and the 300 or Santa Maria will be 85 feet or less.

The proposed new level will pass 35' to 45' under and north of the old "400" level x-cut. It is expected that heavy water flow through permeable structures will be encountered in x-cutting and continue until drain off lowers the water level to grade. It is also expected that heavy ground in the vicinity of the altered dike may require cribbing to secure a reliable exit.

Available maps (based on compass survey?) of the Santa Maria level show a winze to the "400" level, about 60 feet south of the proposed tunnel course. If this winze does connect the two old levels, it may provide assistance in drainage, but it is apparently located south of the mapped and observed southerly limit of the dike on the Santa Maria level and may not contribute much to evaluation of ore. It also may have disturbed ground in its near vicinity considering the incompetence of altered basalt, and it is believed prudent to direct the proposed new level away from it to the projected central portion of the target for geological and engineering reasons. If underground observation indicates otherwise, the possibility of recovery can be reconsidered. Its mapped location is probably approximate and a longhole should probe for it to determine location, ground and water conditions.

From the 900 station it is proposed to extend the cross cut on a near west bearing as illustrated on Plate 1 to a projected intersection of the projected hanging wall of the No. 4 ore body, as described in reference (3) and (5), and illustrated on copy of Plate 46 of reference (5). A cross section of the geology that would be explored by this 700'of oblique x-cut is illustrated by Plate II projected from geology shown on above referenced Plate 46. This appears to be a bearing that might intersect the most basalt dikes and their attendant silica carbonate zones and expose on projection a possible four favorable areas for ore deposition.

Exploration Method Recommended

Based on three and one-half years experience with the property, a cross cut is the most desirable method of exploration for the following reasons:

1. Twenty rotary drill holes have been drilled from the surface. One had unmistakeable ore grade material. Most others

had traces or low-grade 1-2 lbs. material. Of the 20, however, only four were completed to target depth. The rest lost circulation, encountered hard glaucophane schist or opaline silica, or lost cones, or otherwise were junked with metal sufficient to force abandonment.

2. Mining has proved that drill hole results are not sufficiently representative of geology and grade to control as a decision factor.

3. Shaft sinking in heavy ground and operation from a shaft in an area where up to 120 inches of rain a year may be expected is not feasible as an engineering or economic approach.

4. A horizontal opening across geology exposes the most targets per foot of work.

5. High unit value, but erratic and localized mineralization common to this and other mercury mines in California, can most reliably be evaluated by bulk sampling.

References Cited

(1) Geological Survey of California
Vol. 1, pp. 89-90

(2) Fourteenth Report of the State Mineralogist 1913-14, pp. 231-232

(3) Unpublished Report of Bert C. Austin
dated December 1, 1941

(4) Transactions of American Institute of Mining Engineers
Vol. 1, 1875, Page 275

(5) California Journal of Mines and Geology
Vol. 42, No. 3, 1946, pp. 277-279

(6) Owner's Records

(7) California Division of Mines Bulletin 131
Consolidated Index of Publications, Page 352

(8) California State Mining Bureau Bulletin No. 27, 1908

(9) Personal communication.

William C. McCulloch

William C. McCulloch

Helen Mine
Hondo Tunnel Project

Project Description (All place name locations are illustrated on Plate 1)

1. Access road (about 1200') from framing shed to portal site.

2. Preparation of portal site surface working area.

3. Move in equipment and utilities.

4. Run 1600' of 5'x7' x-cut from portal to hanging wall contact 130' vertically below and westerly of No. 4 ore shoot on 300 level.

5. Raise from 900 station 130 feet to 300 level.

Cost Estimate Detail

1. Access Road and Level Portal Working Area

Bulldozer rental with operator and fuel,		
4 hours moving in and out		
12 hours working time		
16 hours @ 15.00/hr. with operator and fuel	$240.00	
Truck for dressing road with burnt rock		
16 hours @ 10.00/hr.	160.00	
Supervision and engineering	100.00	
		$ 500.00

2. Prepare Portal Site for Working:

A. Power line hookup (based on contractor bid)

1. Material

1 - 30' pole	30.00
5 - 3 spool pole brackets & bolts	40.00
1 - deadman guy wire, insulator, bolts, etc.	35.00
2400' #2 THW aluminum wire	400.00
10' 1¼" rigid galv. conduit	7.00
1 - 1¼" W head	1.76
1 - 3 knob pipe rack	4.03
1 - 600 v. 60 amp 3-pole fused disconnect switch	44.00
2 - 600 v. 30 amp 3-pole fused disconnect switch	73.00
1 - 600 v. 30 amp 2-pole fused disconnect switch	25.00
1 - 4"x4"x5' gutter	15.00
1 - 5 KVA dry type transformer	157.84
1 Q08S Panel	9.67
2 Q0120 Circuit breakers	4.64

Estimated materials for installation of equipment, lighting, circuits, meters, etc.	125.00	
	971.94	
5% sales tax	48.60	
2. Labor		
Labor for installing line to building	400.00	
" " " and connecting switches, transformers, running lighting circuits, connecting battery charger, tunnel fan-grounding equipment, etc.	300.00	
		$1,720.54
B. Install surface track and trestles		
Timber 2326 b/f @ 82.00 and tax	200.30	
Rail two tons @ $240.00 " "	504.00	
Spikes, fish plates, bolts	105.00	
Labor, 80 hours @ 3.25	260.00	
Insurance, S.S. & State Unemploymt.	78.00	
		1,147.30
C. Run 1000' Surface Water line		
1000' pipe and fittings	470.00	
Labor, 16 hours @ 3.25	52.00	
Insurance, etc. @ 30%	16.60	
		538.60
D. Move in Equipment		
8 hrs. truck and bulldozer rental @ 15.00/hr.		120.00
E. Supervision and Engineering (2 weeks)		
Salaries	875.00	
Insurance, etc. @ 30%	262.50	
		1,137.50
F. Build shed for tools and charger		
Labor	56.00	56.00
Total		$4,719.94

3. Run 1600' 5' x 7' timbered x-cut — Per Foot Costs

A. Labor
15 shifts week (2 miners, timberman, trammer)
Advance 3½' shift, average 22-day month
231' month, with wages:

Miners 3.25/hr. timberman and trammer @3.00/hr	$28.58
Timber framing and transport (5 shifts week)	2.48
Mechanic @ 4.50/hr. 5 shifts week	3.43

B. Overhead

Supervision, engineering, geology, assaying	7.57
Compensation Insurance, S.S., Unemployment, etc.	8.67
Accounting, telephone, postage, etc.	2.75
Licenses, Auto & Liability Insurance	.82

C. Supplies
Timber @ 82.00/M & tax (includes ties, blocks, wedges, collar braces, sets and lagging)

75 B/f per foot	6.50
Rail: 20# @240. ton delivered	2.12
Compressor fuel @ 18¢ - 50 gal. shift	2.57
Generator fuel @ 18¢ - 25 gal. shift	1.28
Air line - 2" galvanized delivered	1.03
Water line 1" " "	.47
Vent pipe 12" @ 1.05 & tax	1.10
Drill steel & bits, 6' integral @ 20.85	.50
Pipe fittings & valves $200.00	.125
Tie bolts for 4 portal sets @ 80.00	.05
Fish plates and bolts	.38
Track spikes	.075
Switches, 4 @ $50.00	.125
Powder and caps (electric acct. methane)	2.70
Lubricants	1.07
Gasoline for autos and truck	.72
Nails (500 lbs. @ 15¢ & tax)	.05
Small tools	.625
Equipment parts and repair	.625

D. Equipment Rental

	Monthly Rental	Use Tax
600 CPM Joy Portable Compressor	850.00	42.50
2-4 wheel drive international	200.00	10.00
1½ ton Mancha Trammer & charger	460.00	23.00
EMCO 12B Mucker	460.00	23.00
	1,970.00	98.50
		1,970.00
Total		$2,068.50

8.95

Proprietary Equipment	Replacement Cost	Per Foot Cost
Depreciate 60 months straight line		
3 Jacklegs, one stoper	$4,806.00	
6 - 32 cubic foot side dump cars	2,213.37	
1 - 6 foot swing saw and skill saw	1,622.40	
1 C.P. 1200 drifter & long hole steel	1,610.00	
1 60 K.W. Generator	3,150.00	
10 MSA Mine Lamps	452.18	
3 Radio telephones	600.00	
1 Used 4 x 4 truck for local fuel haulage	300.00	
1 transit and chain	300.00	
1 Joy Air Fan	364.00	
1 Electric axial booster fan	510.00	
1 Air Saw	140.00	
1 Galvanometer	30.00	
1 Methane tester	100.00	
1 Blasting box	115.00	
2 Fuel tanks	500.00	
1 Spader & hitch cutter	400.00	
1 Air Receiver tank	364.00	
1 Car pass	624.00	
2 Water tanks	500.00	
8 Air and water hoses	480.00	
4 Air line oilers	100.00	
1 Joy single drum tugger	230.37	
3 Fire extinguishers	153.51	
1 Bench grinder	46.11	
1 Underground timber truck	100.00	
	$19,810.94	
Depreciation per month @ 231' month	330.18	1.34
Total cost per foot		86.91

4. Cut raise station, timber and run 138' cribbed raise with 3' x 4' manway, laddered and platformed and 5' x 4' muck pass

A.	Cut and timber 8'x 20' station=35' x -cut	2,969.40	22.84
B.	62 shifts labor and supplies @ 2.5' shift	9,236.50	71.05
C.	Equipment Rental and Depreciation from above	1,534.00	11.80
D.	Timber 190 b/f per ft. cribbed plus landings and ladders	2,035.80	15.66
	Total	$15,775.70	
	Per Foot of Raise		121.35

Project Cost Summary:

1.	Access Road	$ 500.00
2.	Site Preparation	4,719.94
3.	x-cut 1600'	139,056.00
4.	Raise and Station	15,775.70
	Total	$160,056.00

The per foot costs of the x-cut will be reduced $6.50 per foot to $80.41 for any part that will stand without timber. It is therefore proposed that x-cut costs be settled on the basis of $86.91 for timbered footage and $80.41 for untimbered footage with total costs at maximum of $160,056.00 subject to reduction for untimbered footage.

GORDON I. GOULD & CO.
MINING AND METALLURGICAL ENGINEERS
EXAMINATIONS – PLANT DESIGN AND EQUIPMENT – MANAGEMENT

58 SUTTER STREET
SAN FRANCISCO, CALIFORNIA 94104

CABLE: GIGACO
TELEPHONE: 415 981-0977

February 16, 1968

Mr. W. C. McCulloch
c/o Southern Pacific Co.
Land Department, Room 251
65 Market Street
San Francisco, California 94105

Dear Mr. McCulloch:

We offer the following equipment on a rental basis per month. All rates are based on a minimum guaranteed rental of six months or longer. All rentals are based on an 8-hour day operation. For 2 shifts, rate is 1-1/2 times single shift rate, for 3 shifts it is double single shift rate.

All equipment will be furnished in excellent operating condition. Thirty days notice is required to have the units prepared and delivered. Following are items with monthly rate, single shift:

1 - 500 gal. Air Receiver with California code ----------	$ 75.00
1 - 600 Cu. Ft. Portable Diesel driven Compressor ---------	750.00
1 - Air Tugger 2000 lb. capacity Ingersoll-Rand Compressor -	90.00
1 - Chain Saw ----------	90.00
1 - Mancha 18" gauge Battery Locomotive with charger and spare battery ----------	600.00
1 - Eimco 12 B. 18" gauge Mucking Machine ----------	650.00
1 - Blower, Size 2, electric driven, Joy or comparable ----	60.00
6 - 18" gauge cars width ----------	75.00 each

We hope that we may be of service to you.

Very truly yours,

GORDON I. GOULD & CO.

Carl S. Balch

Carl S. Balch

jh

METALLURGICAL LABORATORIES, INC. CHEMISTS • ASSAYERS • SPECTROGRAPHERS

1142 HOWARD STREET • SAN FRANCISCO, CALIFORNIA 94103 • AREA CODE 415 863-8575

REPORT OF ANALYSIS

Submitted by Helen Mine
P. O. Box 305
Middletown, California 95461

Date October 4, 1967

Sample of Mineral

P. O. No.

Lab. No. 9532

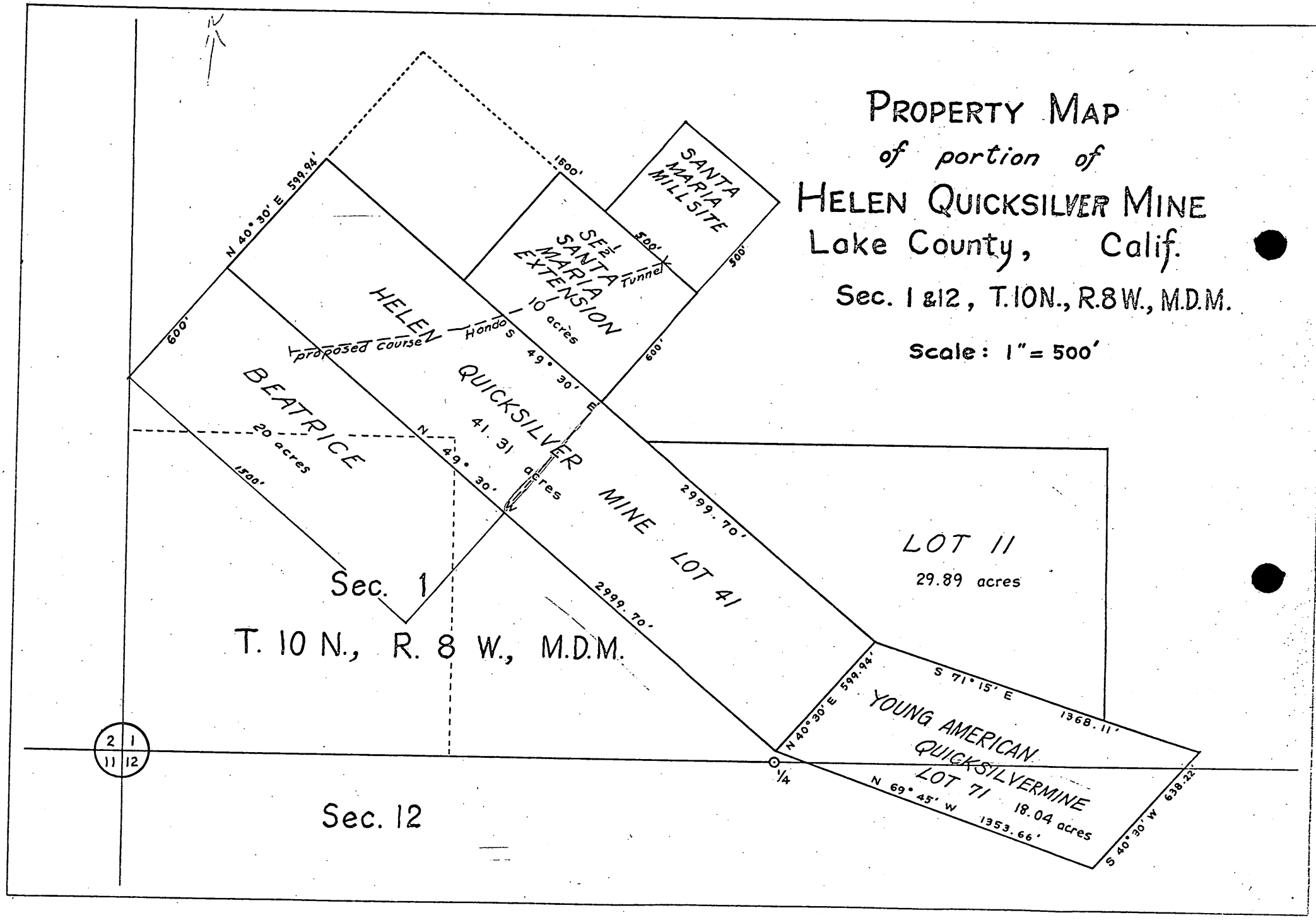
SAMPLE MARK	PERCENTAGES	
	Mercury %	lbs per ton
Santa Maria Basalt	0.408	8.16

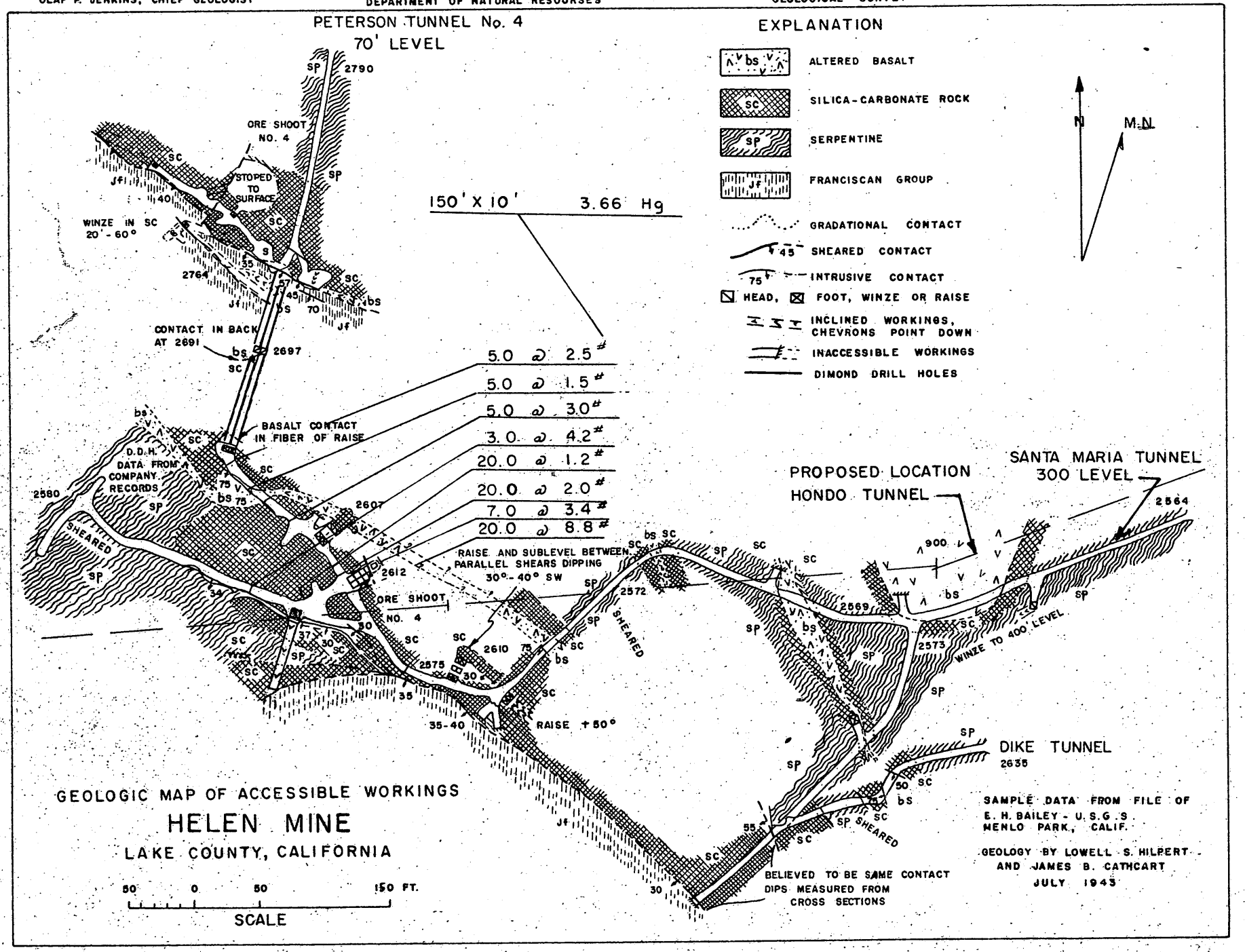
CC: Mr. W. C. McCulloch
632 Occidental Avenue
San Mateo, California

METALLURGICAL LABORATORIES, INC.

By [signature]

MET LAB FORM 13


PROPERTY MAP
of portion of
HELEN QUICKSILVER MINE
Lake County, Calif.
Sec. 1 & 12, T.10N., R.8W., M.D.M.
Scale: 1" = 500'
SANTA MARIA MILLSITE
SE¼ SANTA MARIA EXTENSION
10 acres
Tunnel
Hondo
proposed course
HELEN QUICKSILVER MINE LOT 41
41.31 acres
BEATRICE
20 acres
LOT 11
29.89 acres
YOUNG AMERICAN QUICKSILVERMINE
LOT 71
18.04 acres
Sec. 1
T. 10 N., R. 8 W., M.D.M.
Sec. 12
N 40° 30' E 599.94'
1500'
600'
500'
S 49° 30' E
N 49° 30' W
2999.70'
S 71° 15' E
1368.11'
N 69° 45' W
1353.66'
S 40° 30' W
638.22'
1/4
2 1
11 12

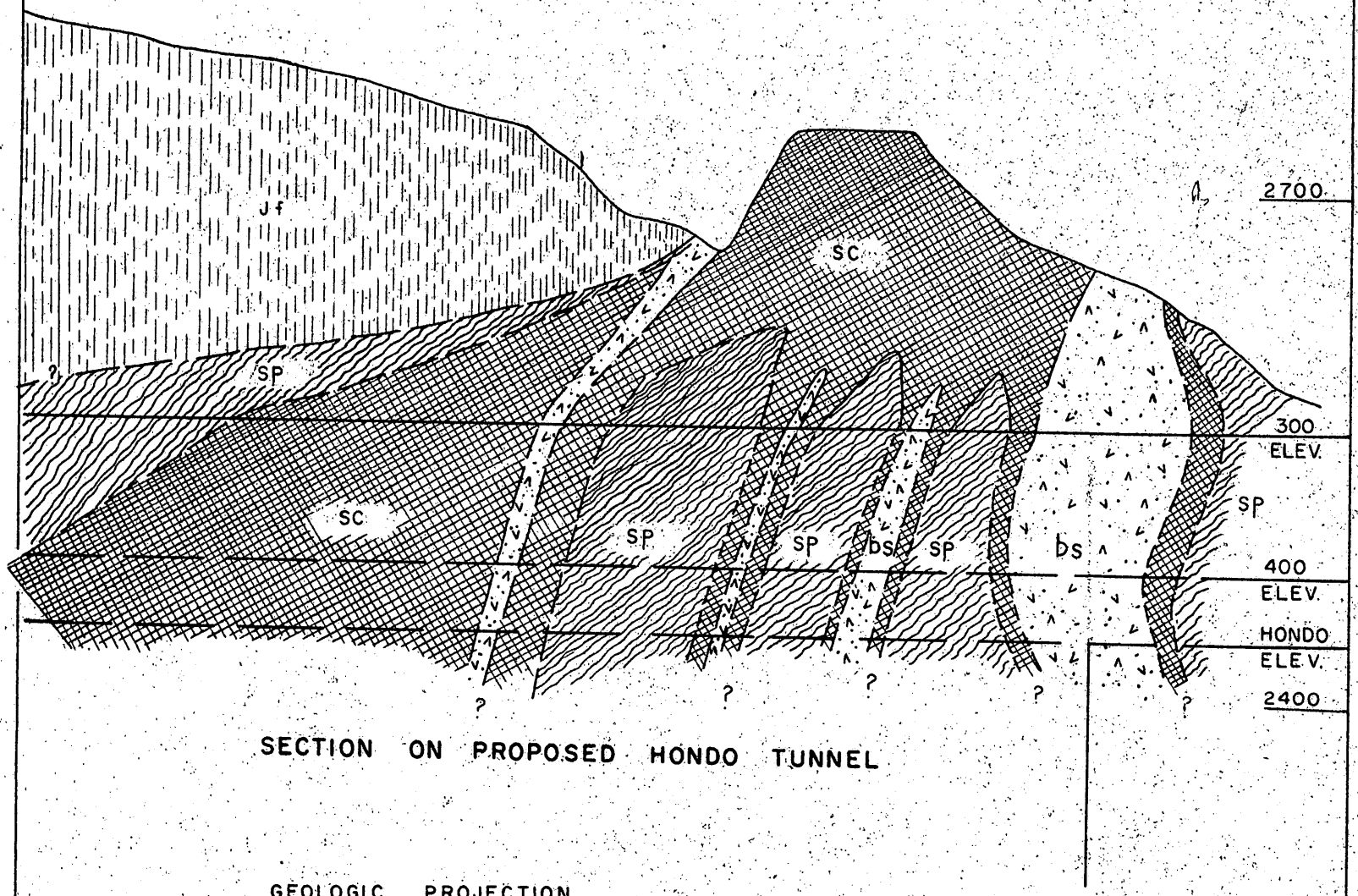


GEOLOGIC MAP OF ACCESSIBLE WORKINGS

HELEN MINE

LAKE COUNTY, CALIFORNIA

PLATE II



SECTION ON PROPOSED HONDO TUNNEL

900'
STATION

GEOLOGIC PROJECTION

HELEN MINE

LAKE COUNTY, CALIFORNIA

50 0 50 150
SCALE

SEPTEMBER
1967

bs ALTERED BASALT

SC SILICA – CARBONATE

SP SERPENTINE

Jf FRANCISCAN – COMPLEX

DRAWN BY: W.C. McCULLOCH
DRAFTED BY: L.W. TEMPLE

INTERPATION
AFTER L.S. HILPERT
AND J.B. CATHCART
JULY, 1943

LEASE AND OPTION AGREEMENT

THIS AGREEMENT, made and entered into in duplicate this 1st day of July, 1964, by and between Klau Mine Inc., a California corporation, hereinafter referred to as "Lessor" and William C. McCulloch, hereinafter referred to as "Lessee".

WHEREAS, Lessor is the owner of certain mining claims and other property, situate in the County of Lake, State of California, hereinafter referred to as the "Helen Mine" and more particularly described as follows, to wit:

Parcel 1.

All of Lots 11 and 41 and the SE$\frac{1}{2}$ of the Queen Unpatented Mining Claim in Section 1 and All of Lot 71 in Sections 1 and 12 in Twp. 10 N., Rge. 8W., MDM., containing 99.24 acres, more or less, also,

Parcel 2.

The right to explore for, mine, remove and sell minerals from and to utilize for any and all mining operations and purposes all or any part of the following described property owned by Lessor as follows, to wit:

That part of the SW$\frac{1}{4}$ of said Section 1 and the N$\frac{1}{2}$of N$\frac{1}{2}$ of said Section 12 as lotted and surveyed, lying within 300' southwesterly of and adjacent to said Lots 41 and 71 and between the southwesterly projections of the northwestern end line of said Lot 41 and the southeastern end line of said Lot 71 as hereinabove described.

Together with any and all equipment located on Parcel 1 first above described, said equipment being more particularly described as follows:

One three foot by thirty-six foot Gould Rotary Furnace and auxiliary equipment, including bins, tanks, feeder, fan, dust collector, motors and condensers, hereinafter referred to as "plant", ore cars, tracks, mine openings and buildings.

NOW THEREFORE, for good and valuable consideration, the receipt whereof is hereby acknowledged, and in consideration of the premises and of the mutual covenants herein contained, Lessor and Lessee hereby agree as follows:

Exhibit "A"

1. Lessor hereby options, demises and lets to Lessee, and Lessee hereby hires and takes from Lessor, all of the above described Helen Mine, machinery and equipment, until the purchase price as set forth in section 3 hereof is fully paid or subject to prior termination provisions of this agreement for a term of ten (10) years from the date hereof, whichever first occurs.

2. Lessee shall on execution of this agreement enter into possession of the Helen Mine and during the term of this lease and option, may and shall continue in possession for the purpose of exploring for, mining, milling, reducing, removing from and selling any and all minerals, metals or ores thereof which may be contained in said Helen Mine.

Operations shall be conducted in a good and minerlike fashion so as to best develop any commercial minerals encountered, and with due regard to the operation of the property as a workable mine. In such operations, Lessee may place such workings, buildings, equipment and machinery on the property as Lessee may elect.

3. Lessor hereby grants to Lessee the exclusive right to acquire all Lessor's right, title and interest in the Helen Mine as herein described. In the event minimum royalty payments and production royalty in excess of minimum royalty payments provided under sections 4 and 5 hereof do not aggregate $75,000.00 and Lessee wishes to exercise this option, Lessee may deposit for the account of Lessor in the Crocker Citizens National Bank of San Francisco, at any time during the term of this agreement, the difference between such aggregate royalty payments to the date of such deposit and the total purchase price of $75,000.00. On deposit of such cash payment or payment of said royalties in the aggregate amount of the total purchase price on or before termination of this agreement, Lessor agrees to execute, acknowledge and deliver to Lessee a deed as of the same date as final payment is received, conveying to Lessee or his designated nominee, all right, title and interest of Lessor in Parcel 1 and the

equipment thereon as herein described, and all Lessor's right, title and interest in the mineral rights and mining privileges, as herein described in Parcel 2, whereupon all obligations of Lessee to Lessor under this agreement shall cease and this agreement shall terminate.

4. Upon execution of this agreement, Lessee will pay to Lessor the sum of Five Hundred and 00/100 ($500.00) Dollars as advance minimum royalty for the first two months of this agreement, and on the first day of each calendar month thereafter during the term hereof, shall pay to Lessor Two Hundred Fifty and 00/100 ($250.00) Dollars per month as minimum royalty. All minimum royalty payments shall be credited as payments on the total purchase price as provided in section 3 hereof.

5. Lessor reserves, and Lessee shall pay Lessor during the term of this agreement, a production royalty of ten per cent (10%) of any amount in excess of $2500.00 per month received by Lessee from the sale of minerals or metals at the then current highest price obtainable in California, or equivalent, produced from the Helen Mine. Payments shall be made on or before the fifteenth (15th) day of each month for minerals or metals sold or removed from the premises for sale during the preceding months. All such production royalty payments shall be credited to the total purchase price as provided in section 3 hereof.

6. It is understood and agreed that Lessee shall have the right to terminate this agreement at any time during the term hereof either by completing the total purchase price or upon thirty (30) days prior written notice to Lessor of Lessee's intention so to do. In the event Lessee elects to terminate or relinquish this agreement prior to the date when the total purchase price has been received by Lessor, as provided for herein, then all minimum and production royalty payments made prior to such date of termination shall become the property of Lessor as rentals for Lessee's use and occupancy of the Helen Mine.

7. Lessee shall maintain an accurate and correct account of all minerals, metals or other substances produced for sale from the Helen Mine and furnish to Lessor at the time production royalty payments are due a true and correct statement of the amount of each metal or mineral produced for sale during the preceding month, and the amounts received from the sale of such metals, minerals or other substances sold. Lessor shall be granted access to the Helen Mine and to the books and records of Lessee at all reasonable times during the term of this agreement for the purpose of checking the data used as a basis for production royalty payments and also for the purpose of examining and taking samples from the workings. All such visits by Lessor, its agents or employees to mine workings shall be made at Lessor's risk of injury to its agents or employees.

8. Lessee will promptly pay all bills for labor, material and equipment furnished, leased or purchased for use on or in connection with operation of the Helen Mine and will at all times during the term of this agreement hold and keep the same free and clear of liens for such labor, materials and equipment. At Lessor's request, Lessee will post and keep posted such notices of Lessor's non-responsibility as Lessor may furnish. Lessee agrees to carry at all times, with insurance carriers satisfactory to Lessor, workmans' compensation insurance for all employees engaged in operations on the Helen Mine.

9. Lessee shall, during the term of this agreement, obtain and maintain fire insurance on the plant, as herein defined, in an amount satisfactory to Lessor, and Lessee hereby agrees to reconstruct or repair any part of the plant that may be damaged or destroyed by fire to at least the conditions existing prior to any damages thereto by fire.

10. Lessee shall reimburse Lessor for any and all real property taxes levied on or against the Helen Mine, as herein described, commencing July 1, 1964. Lessee shall also pay any and all mineral

rights and production taxes which may be assessed against the Helen Mine, as herein described, or on the production of minerals therefrom.

11. Lessee shall, prior to the first day of September of each year during the term of this agreement, complete any assessment work required under the federal mineral statutes as they apply to the SE$\frac{1}{4}$ of the Queen Mining Claim as described in Parcel 1 hereof, and file on behalf of Lessor an affidavit of completion with the Recorder of Lake County, California.

12. Should Lessee fail at any time during the term of this agreement to well and truly perform any of the covenants and conditions of this agreement, and in particular fail to make any royalty payments when due hereunder, this agreement shall be in default, and if such default is not remedied within thirty (30) days from and after receipt of written notice of default from Lessor, all rights and privileges of Lessee shall terminate, and Lessor may thereupon enter upon and resume possession of the Helen Mine, and Lessee agrees to peaceably deliver possession thereof to Lessor.

13. In the event of termination of this agreement for any reason, except full payment of the purchase price, the rights of the parties hereunder shall be as follows:

(a) Lessee may remove from the premises any materials, tools, equipment, or supplies acquired through purchase by Lessee or placed thereon by Lessee, with the exception of any improvements and equipment incorporated in the existing plant, and rail, pipe, and timbers installed in the mine and buildings constructed for use on the property; provided, however, any such material not removed within sixty (60) days after such termination shall become the property of Lessor.

(b) Lessee shall pay to Lessor all sums accrued prior to the date of such termination, for taxes, labor,

materials and supplies and to account for and pay any royalty due Lessor on minerals and metals produced for sale.

(c) Lessee shall prepare and deliver to Lessor a map or maps showing location of all exploration, development and operating holes or workings of every kind and character made by Lessee during the term of this agreement. Lessee shall also furnish Lessor with a report detailing any geological work and the results and location of sampling of works or exploration openings made by Lessee during the term of this agreement or maps clearly illustrating such data.

(d) Subject to the obligations of the parties, one to the other, as set forth in this section 12 (subsections a, b and c) all rights and obligations of either party shall cease upon termination of this agreement for any of the causes set forth herein, except payment of the total purchase price.

14. Lessor warrants that there are no liens or encumbrances on the property described as Parcel 1 herein, which would in any way affect the operations of Lessee thereon, and Lessor agrees to warrant and defend Lessee in any action which may be brought against Lessee by third parties arising out of claims of title or ownership of the land or mineral rights in said Parcel 1.

Lessor, however, does not warrant title to Parcel 2, as described herein, either expressed or implied, and Lessor may either defend or not defend Lessee's title to said Parcel 2 in whole or in part, at the sole option of Lessor, from any action of third parties arising out of claims to the rights granted to said Parcel 2 as described herein.

15. Any notice which is required or permitted to be given hereunder by either party to the other shall be considered as delivered ten (10) days after the same shall have been deposited in the

United States mail, certified, and with postage fully paid and addressed as follows:

To Lessor: Klau Mine Inc., 57 Post Street
San Francisco, California

To Lessee: W. C. McCulloch
632 Occidential Avenue
San Mateo, California

Either party may change the address to which written notices may be sent upon five (5) days previous written advice of such new address to the other party.

16. This agreement shall inure to the benefit of and be binding upon the parties hereto, their heirs, executors, administrators, representatives, successors and assigns, providing, however, that no assignment of this agreement may be made without the prior written consent of Lessor, and any proposed assignment of this agreement without such written consent shall be void and without force and effect.

17. Time is the essence of this agreement.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed in duplicate with Lessor's corporate seal duly affixed, all as of the day and year first above written.

KLAU MINE INC.

Lessor

By Malcolm B. Gould
Malcolm B. Gould, President

(S E A L)

By Bruce A. Gould
Bruce A. Gould, Secretary

WILLIAM C. McCULLOCH

Lessee

By William C. McCulloch

OFFICIAL
COPY
C. M. E.
RECEIVED
APR 4 1968
INITIALS | CODE

A G R E E M E N T

THIS AGREEMENT made and entered into this 2nd day of June, 1966, by and between FRED H. LENWAY AND COMPANY, INC., a corporation (hereinafter called "Lenway"), and RICHARD R. CLEMENTS & SONS, a partnership, (hereinafter called "Clements");

W I T N E S S E T H :

On or about June 1, 1965, Lenway and William C. McCulloch entered into a PARTIAL ASSIGNMENT AND JOINT VENTURE AGREEMENT (a copy of which is attached hereto and marked "Exhibit A"), which agreement was modified by a letter dated September 24, 1965 (a copy of which is attached hereto and marked "Exhibit B"). These agreements are hereinafter referred to as the "Joint Venture Agreements". By virtue of said Joint Venture Agreements, Lenway acquired certain interests in and to a lease and option on property located in the County of Lake and more particularly described in the Joint Venture Agreements.

Lenway is willing to sell to Clements its interest and rights acquired under said Joint Venture Agreements, and various other assets, and Clements is willing to acquire said rights on the terms and conditions hereinafter set forth.

NOW, THEREFORE, IT IS AGREED AS FOLLOWS:

1. Lenway hereby transfers to Clements:

   (a) All its right, title and interest acquired pursuant to the terms of the Joint Venture Agreement and all written modifications or supplements thereto;

(b) All of its right, title and interest to that property known as Helen Mill Site and described in the copy of the recorded Notice attached hereto and marked "Exhibit C". To further evidence said transfer, Lenway hereby delivers to Clements a Quitclaim Deed to said property;

Helen mill site

(c) All of its right, title and interest in and to that property located in the County of Lake, which is described in the Grant Deed, a copy of which is attached hereto and marked "Exhibit D", which transfer is to be evidenced by a grant deed delivered by Lenway to Clements simultaneously with the execution of this agreement;

(d) All of the personal property enumerated in the Bill of Sale attached hereto and marked "Exhibit E". Clements hereby and herewith appoints, as its agent to inspect and approve of said equipment, said William C. McCulloch, whose approval and acknowledgment of delivery of said equipment shall be acceptance hereof. Clements has caused said personal property to be inspected and has found it to be in order, and by execution of this agreement acknowledges having taken delivery of said property;

(e) Copies of all engineering records and assays, receipt of which is hereby acknowledged by Clements.

2. Lenway agrees, as and for the consideration to be paid by Clements, to hold Clements harmless and indemnify Clements from

any liens contracted for by the joint venture of Lenway and William C. McCulloch, which may now exist against the properties and interests transferred hereby, or any portion thereof, up until this date, and shall further indemnify and hold Clements harmless from suits, tax obligations, liens or damages of any kind arising out of acts done, created or made prior to and up to the date of this agreement. It is, however, understood that the duty of Lenway to indemnify Clements under this paragraph shall not exceed in the aggregate the amount of $60,000.00 to be received by Lenway pursuant to Paragraph 3. Clements agrees that if any lien or obligation arises for which recovery is sought from Lenway, Lenway shall be notified in writing of such claim, lien or obligation, and be given an opportunity to defend said claim.

3. As consideration for the transfer of the above mentioned property, Clements hereby agrees to pay to Lenway the sum of Sixty Thousand Dollars ($60,000.00), as follows:

(a) The sum of $10,000.00 and $400.00 sales tax, representing the purchase price for the personal property listed in the Bill of Sale, Exhibit E hereto, which amount is to be paid upon execution of this agreement;

(b) The balance of $50,000.00 shall be paid only out of 10% of the gross profits received by Clements from the operation of the property acquired hereunder, provided, however, that in any and all events said $50,000.00 shall be paid not later than July 15, 1967. Said indebtedness of $50,000.00 is to be evidenced by two promissory notes, which shall be in

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the amounts of $46,000.00 and $4,000.00, respectively, each bearing interest at six per cent (6%). The promissory note for $4,000.00 is to be secured by a deed of trust on the property referred to above under Paragraph 1(c).

4. Lenway and Clements agree to prorate as of the date of this agreement all continuing expenses, including lease rentals, wages of employees and property and mineral taxes.

5. This agreement is binding upon and inures to the benefit of the executors, administrators, heirs, successors and assigns of each of the parties hereto.

6. All notices pertaining to this agreement shall be in writing. Notices shall be sent, if set forth in writing, by certified mail to the following addresses:

(a) Richard R. Clements & Sons
5707 Marietta, Van Nuys, California

(b) Fred H. Lenway and Company, Inc.
130 California Street, San Francisco, California

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year first above written.

RICHARD R. CLEMENTS & SONS

By _____
Richard Robert Clements

_____
Richard Roscoe Clements

FRED H. LENWAY AND COMPANY, INC.

By _____
President

_____
Secretary

STATE OF CALIFORNIA)
) ss.
CITY AND COUNTY OF SAN FRANCISCO)

On this 2nd day of June, 1966, before me, the undersigned, a Notary Public in and for said State, personally appeared FRED H. LENWAY and MAX WEINGARTEN, known to me to be the persons who executed the within instrument on behalf of the corporation therein named, and acknowledged to me that such corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

JEAN A. ROSS
NOTARY PUBLIC - CALIFORNIA
CITY AND COUNTY OF
SAN FRANCISCO

JEAN A. ROSS
Notary Public in and for said
City and County and State.

My Commission expires: August 7, 1969

KLAU MINE, INC. hereby consents to the assignment of the rights granted in the foregoing Agreement dated _____, 1966, provided, however, that except for an assignment to a corporation controlled by Clements, no further assignment may be made without the prior written consent of KLAU MINE, INC.

KLAU MINE, INC.

By: _____

By: _____

CONSENT TO ASSIGNMENT

WILLIAM C. McCULLOCH, joint venturer in the above referred to Joint Venture Agreements with Lenway, hereby consents to the assignment of the rights granted in the Joint Venture Agreement to Clements provided, however, that except for an assignment to a corporation controlled by Clements, no further assignment of the rights of Clements may be made without the prior written consent of said WILLIAM C. McCULLOCH.

William C. McCulloch
WILLIAM C. McCULLOCH

Eugenie McCulloch
EUGENIE McCULLOCH

BILL OF SALE

KNOW ALL MEN BY THESE PRESENTS: That FRED H. LENWAY AND COMPANY, INC., hereinafter designated as the Seller, for and in consideration of the sum of Ten Thousand and no/100 ($10,000.00) Dollars, plus 4% California State Sales Tax, lawful money of the United States, to RICHARD R. CLEMENTS & SONS, a partnership, hereinafter designated as the Buyer, the receipt whereof is hereby acknowledged, does by these presents grant, bargain, sell and convey unto the said Buyer, its executors, administrators and assigns the following described personal property, to wit:

MAIN PORTAL (OFFICE LEVEL)

5 Rocker dump cars - 32 cu. ft. capacity

5 End dump cars - 18 cu. ft. capacity

1 Eimco 12B mucking machine - new dipper motor

1 Mancha little Trammer - Serial No. 2032

1 Utility flat car

1 Mine vent fan - approx. 2HP

MATERIAL & EQUIPMENTS & ACE WELDING

1 - 3HP used GE motor

1 Reduction (gear) unit

1 pc 20# rail

Exhibit E

1 - 1 ea. 8" pipe

RADIO EQUIPMENT

1 - 5 Watt Johnson Messenger II at Rancho Lumber Co.

1 - 5 Watt Johnson Messenger II at Helen Mine

MATERIAL & EQUIPMENT at RANCHO LUMBER CO.

1 Caterpillar 125 KW Diesel generator set - skid mounted

1 - 200 foot conveyor with 5 HP gearmotor drive - used

1 - 40 foot paddle-type trough conveyor

400 feet (prox) used conveyor belting - 16" x 5/16" cotton cord

440 feet (prox) new conveyor belting - 16" x 5/16" 2-ply nylon cord

1 Pan feeder-used

1 Air receiver - 250 gal. capac. & 150# working pressure

11 lockers - 12" x 14" x 6'

200 feet 2" plastic pipe

11 Flexite rubber buckets w/SS handles

1 Lot used mine lamps - junk

1 Lot pipe - 1" to 2". Misc. lengths. Prox 200' total

40 feet 6" channel iron

30 feet 2" x 1/4" flat bar

1 Joy 24" Axivane fan

1 Wire Stretcher Basket

1 Collapsible Stretcher

7 1/2HP West. kiln exhaust motor - 319B1314G - new

5 HP US motor & blower for kiln air (3868777) - new

3HP GE (SX184AG5006R) with Reeves Vari-drive assby. for kiln drive - new

1HP Master Motor 405744MQ - kiln dust conveyor - new

1/3HP US Motor for kiln fuel pump drive - new

1 Westinghouse Ind. Fan Size 411M - for kiln exhaust - new

15HP GE Motor 529-7009 for crusher drive - used

5HP Charlroi (Belgium) for swing saw - used

3HP GE - no Serial no. - used

3/4HP Synchrogear - hot rock conveyor drive - used

1 Mine fan - 16" - no maneplate

1 Lot pipe fittings - prox. 50#

2 Docking Saws, 1 Carpenter Saw, 3 shovels

1 Lot track spikes - prox. 75#

1 Mall air saw

1 roll (200') 1/4 inch. air hose - new

2 office desks

5 office chairs

1 drafting table & stool

1 Map (light) table

---

3 - 15# fire extinguishers

1 Lietz transit - Model 115 with tripod

1 lot drafting equipment - also in box, 1 gas analyzer

1 Hercules 50-cap blasting machine

1 Hercules galvanometer

1 Joy M-2 Spader, ser. No.161600

1 Dayton 1/3HP bench grinder

1 Craftsman tool box with tools - locked

1 Simonsen tool box with tools - locked

1 Hose bander with bands

7 Cans Chevron starting fluid

1 Box - 40# asst. nuts and bolts

2 Gads - new

1 Hauck burner for rotary kiln

2 - 5 gal. water cans

1 90# can carbide

1 Falcon 1/2 HP pump and motor

1 Ingersoll Rand jackdrill #710661 with jackleg

1 Ingersoll Rand jackdrill #710691 with jackleg

1 Jackleg - junk

1 Wheelbarrow

1 Lot mine air and water hoses

1 Lot used drill steel - prox. 40 pcs.

1 Mucker hose

1 Lot used long hole steel - prox. 70'

1 - 50# roll #9 wire

400# nail (60d, 40d, 20d, 16d, & 8d)

1 - 24" tungsten carbide tipped saw blade for swing saw

1 - 16" saw blade for swing saw

1 Toilet assby - new. Lid broken

2 Mucker cables - new

1 Lot (box) misc. rock drill parts

1 Lot (box) Eimco mucker parts

8 AC oil filters #PF132

10 AC fuel filters #TP450X

10 AC fuel filters #5574961

1 Two-man crosscut saw

1 - 2" pipe vice

[illegible]

1 Barber-Coleman indicating temp controller w/Minn-Honeywell controls

1 Box new parts for Mancha controller

1 MG Set for Mancha locomotive

1 Rectifier-type charger for Mancha

1 Air tugger - mfg. unknown

1 Chicago-pneumatic long-hole drill

1 Hoeing table - K&H

9 ea. MSA Mine lamps - Model MS - Single unit design

MATERIAL & EQUIPMENT AT K&H. MFG. CO., SAN FRANCISCO

1 Falk Screw Conveyor Drive 215 JSC 24 with 2" dia. drive shaft and seal

1 Trough end T9G 215-2

1 Reeves flat face pulley 18" dia. x 2.1/2", 1-15/16' bore

1 Reeves motor pulley belt #113827

1 Reliance electric motor, open drip proof 2 H.P., 1170 RPM, 220/440 volt, 3 phase 60 cycle, 213F

1 #215J bushing 2-7/16" bore

1 Set of Flites for feed conveyor

TO HAVE AND TO HOLD the same to the said Buyer, its executors, administrators and assigns forever. And the said Seller does for its heirs, executors and administrators covenant and agree to and with the said Buyer its executors, administrators and assigns, to warrant and defend the title to the said property,

goods and chattels hereby conveyed, against the just and lawful claims and demands of all persons whomsoever.

WITNESS our hands and seal this 2nd day of June, 1966.

FRED H. LENWAY AND COMPANY, INC.

By: _____

By: _____

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O. M. E.
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KLAU MINE, INC.

57 POST STREET
SAN FRANCISCO 4, CALIFORNIA
PHONE SUTTER 1-5954

Helen Mine Joint Venture
c/o Mr. W. C. McCulloch
632 Occidental Avenue
San Mateo, California 94402

February 7, 1968

Dear Mr. McCulloch:

Please be advised that the SE 1/2 of the Queen Mining Claim and the SE 1/2 of the Santa Maria Extension are one and the same. Through the many years this company performed the required assessment work and filed Proofs of Labor, the description was as follows:

".....claimant of the SE 1/2 of the Santa Maria Extension formerly known as the Queen Mining Claim situated...."

There can be no question of the identification, location, or validity of ownership of this property.

Very truly yours,

KLAU MINE, INC.

Malcolm B. Gould, Pres.

MBG/lb

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Notice of Location of Quartz, Or Other Rock in Place, Claim

Notice is hereby given *that the undersigned citizen.....of the United States ha.....discovered a vein or lode of quartz, or other rock in place, bearing* quicksilver *.....and in accordance with the laws of the United States and the laws of the State of California, state*s*....:*

First —*That the name of said lode or claim is.....* Beatrice

Second —*That the name.....of the locator.....* is William C. McCulloch

Third—*That the number of linear feet claimed in length along the course of the vein, each way from the point of discovery is.....* 1499.70 feet

and the width of the vein or lode is three hundred feet on either side thereof, as measured from the center line of the vein at the surface, and the general course of the vein or lode, as near as may be, is..... North 49° - 30' West

Fourth —*That the said claim was located on the* ninth (9th) *day of* July, *19* 64.

Fifth—*That said claim is situated in.....* Eastern Mayacmas *Mining District, County of.....* Lake, *State of California, and that a description of said claim, made by reference to some natural object or permanent monument as will identify the claim located, is as follows, to wit:*

Beginning at the northwesterly corner of Lot 41 in Sec.1, T.10 N., R.8 W., MDM, in Lake County, California, which point of beginning is the northeasterly corner of this Beatrice Claim; thence on a true bearing of S 49° - 30' E for 1499.70' along the westerly boundary of said Lot 41 to a point, which point is the southeasterly corner of this Beatrice Claim; thence on a true bearing S 40° - 30' W for 600' to a point in Lot 13 of said Sec. 1, which point is the southwesterly corner of this Beatrice Claim; thence on a true bearing of N 49° - 30' W for 1499.70' to a point in Lot 5 of said Sec.1, which point is the northwesterly corner of this Beatrice Claim; thence on a true bearing of N 40° - 30' E for 600' to the point of beginning. The discovery point of said claim is a rock monument, located approximately in the center of the Beatrice Claim as herein above described.

INDEXED 6587 COMPARED

Recorded at Request of
Malcolm B. Gould
JUL 9 1964
at 4:12 o'clock P M., in Book 433
of Official Records, P 150
Records of Lake County, California.
2.00
James K. Dunn Recorder
7-8-M.

Dated at Lakeport, Calif. *this* 9th *day of* July, *19*64.

Malcolm B. Gould
For William C. McCulloch

NOTE.—The locator or locators of any lode mining claim shall define the boundaries of such claim so that they may be readily traced, but in no case shall the claim extend more than 1500 feet along the course of the vein or lode, nor more than 300 feet on either side thereof, as measured from the center line of the vein at the surface (Public Resources Code, Sec. 2302).

The notice must be posted at the point of discovery (Public Resources Code, Sec. 2301).

Within ninety days after the posting of his notice of location upon a lode mining claim, the locator shall record a true copy of the notice, together with a statement of the markings of the boundaries as required in Chapter 4 of the Public Resources Code and of the performance of the required discovery work, in the office of the county recorder of the county in which such claim is situated. The county recorder shall receive a fee of one dollar for this service. (Public Resources Code, Sec. 2313.)

INSTRUCTIONS FOR USE

1. Void Previously Used Block
2. Identify Agency of Addressee
3. Write Clearly
4. Send Surplus Envelopes to Supply Room for Reissue

NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
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Use other side first

☆ U. S. GOVERNMENT PRINTING OFFICE: 1964 — O:231-900

Standard Form No. 65
November 1961
General Services Administration
FPMR (41 CFR) 101-11.6

U.S. Government Messenger Envelope

NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
FRIEDA ROWE 4225 GSA	STOP	ADMINISTRATIVE OFFICER TOPO APPLIED DIVISION ROOM 6241 GS BLDG.	STOP
B.B. JONES B-242-B GSA	STOP		STOP
Mrs Ratliff G.S.A. Room 4301	STOP		STOP
U.S. Hist. Survey Ch. Tr. Section Rm 5416 Int.	STOP	Map Info Br.	STOP
BLORIA	STOP		STOP
MRS BOSTON 1200 ADS ST.	STOP	Mrs. Fitzgerald B-510, GSA	STOP
BR. DIST	STOP	Technical Repts. Unit BIA Interior	STOP
Chief Budget + Finance Rm. 5468 Interior	STOP	T. P. Thayer Bldg. 40	STOP
ATLANTIC REGION ENGINEER U. S. GEOLOGICAL SURVEY OLD DOMINION BUILDING ARLINGTON, VIRGINIA 22	STOP	T. H. Kierguard 4228 GSA	STOP
	STOP	Frank Johnson, chief, OME 4460 Interior	STOP

Use other side

Use STOP only when messenger service between Government buildings in Washington, D.C., is required or wherever a STOP system is used. Your mail room has STOP information.

65-107

E Form 7
/63)

OFFICIAL FILE COPY

Date	Surname	Code
7/11/68	Peterson	120
7/11/68	Kirkbemo	120
"	Johnson	110
	Jewett	7/12
	Clapp	7/12
		110
		220
		120M

AIRMAIL

JUL 15 1968

Mr. Richard R. Clements and
Mr. William C. McCulloch
Helen Mine, a Joint Venture
P. O. Box 305
Middletown, California 95461

Re: OME-6708 (Mercury)
Clements & McCulloch
Helen Mine
Lake County, California

Gentlemen:

A careful review has been made of all the information available to us relating to your application for financial assistance to explore the cited property. This review indicates that much of the area to be explored has been largely tested, to the approximate depth of the proposed crosscut, by previous work. Therefore, we must conclude that the probability of disclosing significant ore reserves on the property is not sufficiently promising to justify Government participation in the proposed work. Accordingly, we regret to inform you that your application for assistance is denied.

We wish to thank you for your interest in the minerals exploration program and for bringing your property to our attention.

Sincerely yours,

FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Economic Geology File
OME Docket
OME Reading File
Region II
ECPeterson
130

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(2/63)

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Date	Surname	Code
7/11/68	Kilbourn	120
		120
7/11	Johnson	110
		220

July 11, 1968

Memorandum

To: The File

From: Edward C. Peterson

Subject: OME-6708 (Mercury)
Clements & McCulloch
Helen Mine
Lake County, California

Justification for Denial of Application

I concur with the OME Field Officer and recommend that the subject application for assistance be denied for the following reasons:

1. Available information indicates that much of the area where work is proposed has been explored by previous work.

2. The proposal to drive a crosscut adit 1,600 feet in length only a short distance below old underground workings is considered development and not eligible for OME assistance. It appears that the principal value of the crosscut would be in providing a lower main haulage level and drainage for the existing workings.

Edward C. Peterson

Edward C. Peterson

cc: Director's Reading File
Economic Geology File
OME Docket
OME Reading File
~~XXXXX~~
ECPeterson

ECPeterson/bsl 7/11/68

UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
Office of Minerals Exploration
345 Middlefield Road
Menlo Park, California 94025

July 9, 1968

OFFICIAL COPY
O. M. E.
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INITIALS	CODE
glo	130
Jbo	120
~~KS~~	~~110~~
ED	120

Memorandum

To: Chief, Office of Minerals Exploration
Washington, D. C.

From: Field Officer
Region II

Subject: OME-6708 (Mercury)
Clements & McCulloch
Helen Mine
Lake County, California

Enclosed is an Application Report on the subject property recommending that the application be denied on the basis that most of the work proposed is development rather than exploration and that the area of the proposed crosscut adit has been largely explored by previous work.

H. K. Stager

Enclosure

UNITED STATES

DEPARTMENT OF THE INTERIOR

STEWART L. UDALL, SECRETARY

GEOLOGICAL SURVEY

OFFICE OF MINERALS EXPLORATION

REPORT OF EXAMINATION

REGION II

APPLICATION REPORT

OME-6708 (Mercury)
Clements & McCulloch
Helen Mine
Lake County, California

Report of Exam.

By

H. K. Stager
Field Officer
OME, Region II

July 9, 1968

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ILLUSTRATIONS

Figure 1. Index map of Lake County, California

INTRODUCTION

The Joint Venture of Richard R. Clements & Sons and William C. McCulloch, c/o Helen Mine, P.O. Box 305, Middletown, California 95461, applied to the Office of Minerals Exploration for Government assistance in an exploration project, Docket OME-6708, to explore for mercury at the Helen Mine, Lake County, California. The applicant infers the presence of minable mercury ore bodies beneath old mine workings on the property and wishes to drive a crosscut adit to drain these old workings and make the favorable ore zones accessible for exploration and mining.

A review and field examination was requested by the Office of Minerals Exploration on April 12, 1968. The application was reviewed and discussed with Edgar H. Bailey, mercury commodity specialist for the U. S. Geological Survey, and a field examination was made by H. K. Stager, Field Officer, on June 12, 1968, accompanied by Mr. Hugh Engle, mining engineer for the applicant. The applicant's maps and other data were examined and compared with surface and underground exposures on the property.

The history and geology of the Helen Mine is described in the California Division of Mines Report of the State Mineralogist, Volume 42, No. 3, p. 277-279, Quicksilver Deposits of Eastern Mayacmas District, Lake and Napa Counties, California, by Robert G. Yates and Lowell S. Hilpert, July 1946.

SUMMARY

The Helen Mine has yielded about 11,000 flasks of mercury from ore shoots in silica-carbonate rock, altered basalt dikes, and sandstone. The applicant proposed to explore the northern part of the deposit by driving a crosscut adit 1,600 feet in length from a new portal site, and raising to the 300 level for ventilation and a second exit. Estimated total cost of the project was

$160,056.00. No provisions were included to explore by drifting, raising, or drilling, any mineralized or favorable areas intersected by the crosscut. The work appears to be principally developmental in nature and would be only about 15 feet below the old 400 level workings that are now caved, flooded, and inaccessible. Much of the area is believed to have been explored by previous work and few new favorable targets exist. If the applicant, at some future time, is able to drive the proposed crosscut adit at its own expense and intersects worthwhile exploration targets, then Government assistance may be justified in the further exploration of these targets.

RECOMMENDATIONS

It is recommended that the application be denied on the basis that the proposed work is largely developmental in nature and that the area to be explored has been largely tested, to the approximate depth of the proposed crosscut, by previous work.

LOCATION, ACCESSIBILITY, AND LOCAL FACILITIES

The Helen Mine is in sec. 1, T. 10 N., R. 8 W., MDM, Eastern Mayacmas District, Lake County, California (Fig. 1), on the southwest side of Dry Creek at an altitude of about 2,500 feet.

To reach the property, that is about 5 miles west of Middletown (the closest town), drive south on State Highway 29 about 1 mile, turn west on the Dry Creek Road and drive about 5 miles to the mine and furnace plant at the end of the road. The road is rough and steep but is accessible to ordinary passenger cars during dry weather. During the winter months or periods of heavy rain, the road is only passable to 4-wheel-drive vehicles. The drive from Middletown usually requires about 30 minutes.

Mine labor, services, and supplies are available in Middletown or Calistoga (25 miles). Ample water is available from springs and streams on the property. Assay service, at a cost of $4-$5 per sample for mercury, is available in San Francisco (100 miles).

PROPERTY

History and Production

The Helen Mine, also known as the Dead Broke and American, was discovered about 1860. The first underground working was driven in 1861 and two mining claims were patented in 1874. The property was purchased by the American Mining Company in 1875 and a 10 stamp, 12 retort, mill was built. Andrew Rocca acquired the property in 1900 and built a 60 ton-per-day Scott Furnace. In 1922 the property was leased by Balch and Gould and in 1924 a 25 ton-per-day Gould Rotary Furnace was installed. H. W. Gould and Company purchased the property from the Rocca Estate. It is now owned by a Gould subsidiary, Klau Mine, Inc., and is under lease to the applicant. Total recorded production is about 11,000 flasks of mercury with an additional 5,000 flasks reported in the older literature.

Ownership

The Helen Mine property consists of about 90 acres of patented and 36 acres of unpatented mining claims in the SW¼ of sec. 1 and NW¼ of sec. 12, T. 10 N., R. 8 W., MDM, owned by Klau Mine, Inc., and leased to the applicant. A copy of the Lease and Option Agreement was attached to the application, together with a map showing the area of the claims.

The applicant proposed to include the NW½ of the Helen Quicksilver Mine Lot 41 patented claim, the SE½ of the Queen (Santa Maria Extension) unpatented

claim, and the Beatrice unpatented claim, or a total of about 51 acres, in the project area subject to royalty on any production.

Lien and Subordination Agreements for the proposed project area were not included in the application but the applicant indicated that the owner would sign an agreement if a contract was approved.

Financial Eligibility

The applicant furnished copies of letters to two banks requesting loans for the proposed work and also copies of letters from the banks denying the loans. The applicant proposed to furnish its share of the exploration costs by use of equipment and in cash.

Development

The property is developed by more than 6,000 feet of underground workings and two open pits. The principal levels are the 400 or main level, the 300 or Santa Maria level, the 70 or Peterson level, and the Primavera level. The 400 level is caved, flooded, and inaccessible. Rehabilitation of the 300 level was in progress at the time of the examination and much of this level is now open and accessible. Mining is presently confined to the Primavera level and raises above this working.

Surface facilities include a 20 ton-per-day Gould Rotary Furnace with condenser system, screening, crushing, and waste disposal systems, framing shed, dry house, mine office building, generator building, a rail tramway system 1,600 feet in length from mine to plant, water system, and oil storage tanks. All facilities are in good condition and operating. An average of five men are employed in the mine and surface plant.

GEOLOGY

Geologic Setting

The Helen Mine is in an area of moderately steep topography and the surface is largely covered by a large landslide and by dense vegetation. Outcrops are sparse and access to much of the area is difficult. Rocks in the mine area consist of sandstone and shale of the Franciscan Formation of Jurassic or Cretaceous age that have been intruded by a large mass of peridotite and dikes of basalt. The peridotite is almost completely altered to serpentine and the basalt dikes are largely altered to a soft white clay. A northwest-trending fault, which dips about 35° to 40° southwest, separates the sedimentary rocks and the serpentine. Along the footwall of this fault the serpentine has been hydrothermally altered to silica-carbonate rock in a zone from a few feet to several hundreds of feet in thickness. Most of the mercury-bearing ore bodies are localized within the silica-carbonate rock or along the dikes.

Ore Deposits

The mercury-bearing ore bodies that have been mined at the Helen Mine are largely localized within the silica-carbonate rock along the fault contact between serpentine and the sedimentary rocks. The mass of silica-carbonate rock is about 2,000 feet in length, 50 to 300 feet in width, and extends down dip at least 500 feet. It ranges from green, slightly silicified, serpentine with thin carbonate veinlets to a dense, black, opaline rock containing abundant pyrite and little carbonate. The ore usually occurs in the black opaline rock as veinlets and disseminations of cinnabar, the most abundant ore mineral, and lesser amounts of metacinnabar, native quicksilver, and rarely tiemannite (the selenide of mercury). Ore shoots range in size from small

concentrations of cinnabar, containing a few tons of ore, to bodies about 140 feet in length, 20 to 40 feet in thickness, and extending down dip several hundreds of feet. Smaller ore shoots occur along the margins of the altered basalt dikes in the sedimentary rocks. The average grade of the ore mined, from the five major ore shoots, has ranged from 8 pounds to 20 pounds of mercury per ton. Total production has been about 100,000 tons of ore that yielded from 11,000 to 16,000 flasks of mercury.

Sampling

No samples were taken for assay during the field examination. There were no exposures of mineralized material accessible for sampling in the area of the proposed crosscut adit.

Ore Reserves

The applicant states that a reserve of about 15,000 tons of ore, that averages about 8 pounds of mercury per ton, is indicated in the area now being mined (Primavera level) at the southeast end of the deposit. Sampling, done in 1943, indicated a reserve of about 8,500 tons of ore averaging about 5 pounds of mercury per ton in the No. 3 and No. 4 ore shoots at the northwest end of the deposit. The applicant also infers a reserve of 60,000 to 100,000 tons of material, averaging about one pound of mercury per ton, in the No. 2 ore shoot beneath the West Pit in the middle of the mine area.

EXPLORATION

Applicant's Proposal

The applicant proposed to explore the north end of the deposit by driving a crosscut adit 1,600 feet in length with a raise 130 feet in length to the 300 level. Total estimated cost, including access road and portal site preparation, was $160,056.00.

The proposed crosscut would be only 14 feet below the old 400 level workings and its principal value would be in providing a lower main haulage level and drainage for the existing workings. No provision was made for exploration of any mineralized zones that might be intersected by the crosscut. Maps and cross sections contained in the report by Hilpert in 1946 indicate that much of the area has already been explored by the old 400 level workings and that a winze on the No. 2 ore shoot explored the favorable zone to a depth of 70 feet below the 400 level.

Some favorable targets may exist in the area of the proposed crosscut and if the applicant at some future time, and at its own expense, drives the adit then it is possible that Government participation in the exploration of these targets may be justified.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

OME-6708
(Mercury)

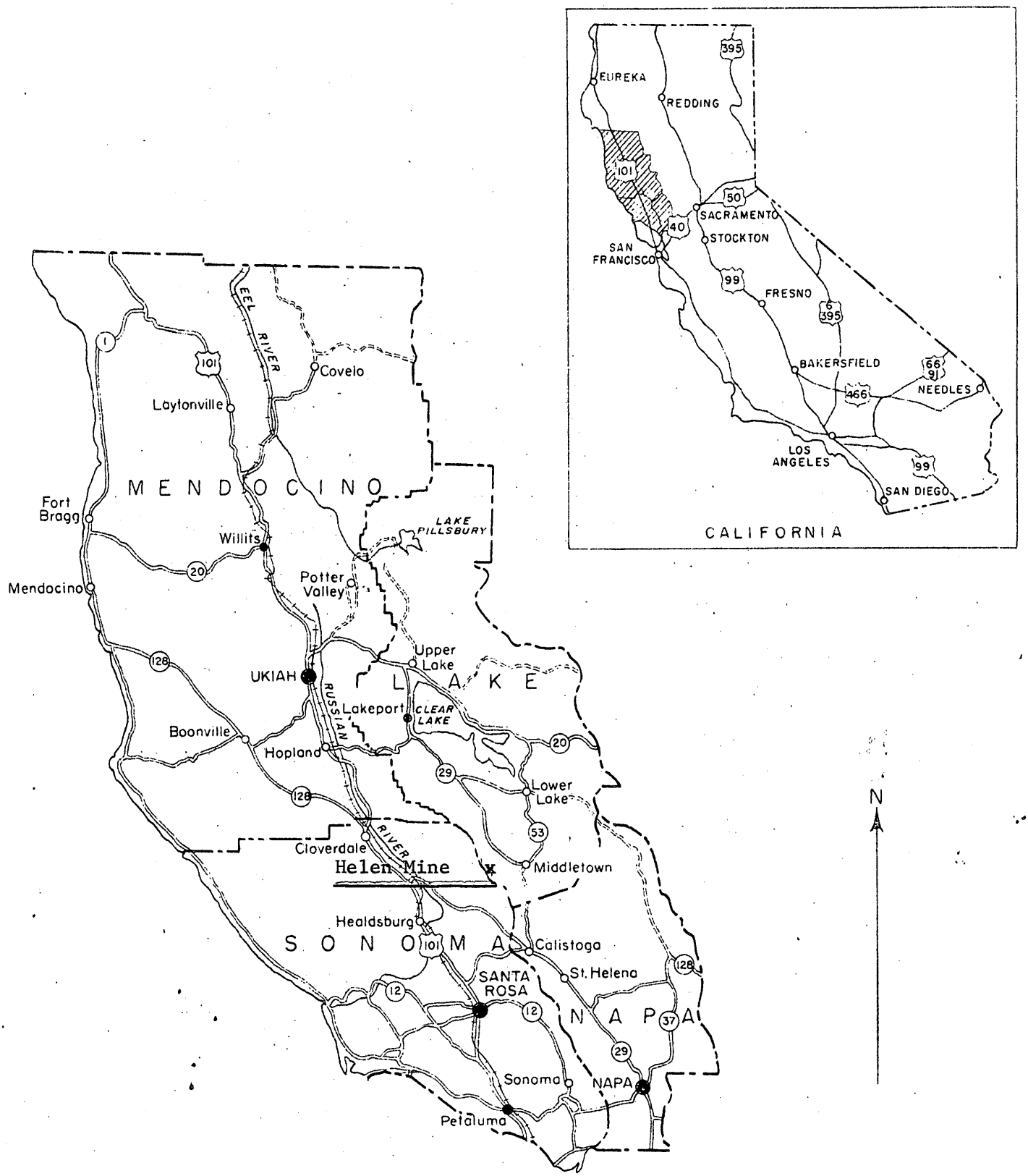

Figure 1. INDEX MAP OF LAKE, MENDOCINO, NAPA, AND SONOMA COUNTIES, CALIFORNIA

0 20 40 60 Miles

MME Form 7
(2/63)

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Date	Surname	Code
4/12/68	Peterson	120
"	Kirkemo	120
		110
		220
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APR 12 1968

AIRMAIL

Mr. Richard R. Clements and
Mr. William C. McCulloch
Helen Mine, a Joint Venture
P. O. Box 305
Middletown, California 95461

Re: OME-6708 (Mercury)
Clements & McCulloch
Helen Mine
Lake County, California

Gentlemen:

Your application for exploration assistance has been reviewed in our Washington Office and referred to Mr. Harold K. Stager, Field Officer, Region II, Office of Minerals Exploration, U. S. Geological Survey, 345 Middlefield Road, Menlo Park, California 94025.

Mr. Stager will notify you if he requires additional information and possibly to make arrangements for an on-site examination of the property.

Sincerely yours,

FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Division File
Economic Geology File
OME File
OME Reading File
Mr. Peterson
Region II

ECPeterson/bsl 4/12/68

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Date	Surname	Code
4/12/68	Peterson	120
"	Kerbemo	120
		110
		220
		120M

APR 12 1968

AIRMAIL

Memorandum

To: Field Officer, Region II

From: Chief, Office of Minerals Exploration

Subject: OME-6708 (Mercury)
Clements & McCulloch
Helen Mine
Lake County, California

The subject application is referred to you for further consideration, a field examination if warranted, and recommendations.

The application is well prepared and comparatively complete, and we have no specific questions on the geology or other preliminary considerations. Although based on the information presented we believe the Applicant has been overly optimistic in calculating the ore reserves of the Helen mine. It was noted that no provisions were made for exploration (drifting or long-hole drilling) of the more favorable mineralized areas which may be traversed by the proposed work.

We suggest that you discuss the proposal with Mr. E. H. Bailey. It appears that he has done some work at the Helen property and may be helpful in arriving at a decision regarding the proposed program.

If a contract is recommended, the cost estimate should be revised in accordance with the average costs in the district. We note in particular the excessive costs for overhead. It should be determined whether the Applicant owns the Santa Maria Mill site where some work is contemplated. If the property is being leased, a lease and Lien and Subordination Agreements will be required. In addition, if Fred H. Lenway and Company still retain an interest in the properties, Lien and Subordination Agreements signed by Lenway will also be needed.

FRANK E. JOHNSON

Frank E. Johnson

cc: Director's Reading File
Division File
Economic Geology File
OME File
OME Reading File
Mr. Peterson
130

ECPeterson/bsl 4/12/68

April 4, 1968

Mr. Richard R. Clements and
Mr. William C. McCulloch
Helen Mine, a Joint Venture
P. O. Box 305
Middletown, California 95461

Subject: OME-6708

Gentlemen:

Your application for exploration assistance, dated October 15, 1967, submitted to our office at Menlo Park, California, has been assigned Docket No. OME-6708.

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

Sincerely yours,

Frank E. Johnson
Chief, Office of
Minerals Exploration

Copy to Region II

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090–
Contract Date

LIEN AND SUBORDINATION AGREEMENTS[1]

To the United States of America:

That certain land in the County of Lake, State of California, described as follows:[2] The NW½ of Lot 41 and the SE½ of the Queen Unpatented Mining Claim in Section 1, Twp. 10 North, Rge. 8 West, MDM., containing 30.65 acres, more or less.

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Helen Mine, a Joint Venture[3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same.[4]

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

That certain Lease and Option Agreement dated July 1, 1964 between Klau Mine, Inc., as Lessor, and William C. McCulloch, as Lessee.

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated_____, and recorded in Book_____, Page____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

4/ Subparagraph 1(a) does not apply to the holder of a claim, lien, or encumbrance.

4. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land or any production therefrom, furnishing the Government with two true copies of such notice; and

5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No. ____".)

Dated this 31st day of January, 1968.

Malcolm B. Gould	(Seal)	57 Post St. (Street) San Francisco, Calif. (City & State)
Bruce A. Gould	(Seal)	57 Post St. (Street) San Francisco, Calif. (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)

I, Bruce A. Gould (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Malcolm B. Gould (Name), who signed this agreement was then President (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Malcolm B. Gould
(Corporate Seal)

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME-
Contract No. 14-23-090
Contract Date

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Helen Mine, a Joint Venture [3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same.[4]

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

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5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No.____".)

Dated this 31st day of January, 1968.

Malcolm B. Gould	(Seal)	57 Post St. (Street) San Francisco, Calif. (City & State)
Bruce A. Gould	(Seal)	57 Post St. (Street) San Francisco Calif. (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)

I, Bruce A. Gould (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Malcolm B. Gould (Name), who signed this agreement was then President (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Malcolm B. Gould
(Corporate Seal)

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

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Helen Mine, a Joint Venture[3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

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5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No.____".)

Dated this 31st day of January, 1968.

Malcolm B. Gould	(Seal)	57 Post St. (Street) San Francisco, Calif. (City & State)
Bruce A. Gould	(Seal)	57 Post St. (Street) San Francisco Calif. (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)

I, Bruce A. Gould (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Malcolm B. Gould (Name), who signed this agreement was then President (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Malcolm B. Gould
(Corporate Seal)

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

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To the United States of America:

That certain land in the County of Lake, State of California, described as follows:[2] The NW¼ of Lot 41 and the SE¼ of the Queen Unpatented Mining Claim in Section 1, Twp. 10 North, Rge. 8 West, MDM., containing 30.65 acres, more or less.

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and Helen Mine, a Joint Venture[3] hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same.[4]

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

That certain Lease and Option Agreement dated July 1, 1964 between Klau Mine, Inc., as Lessor, and William C. McCulloch, as Lessee.

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated_____, and recorded in Book_____, Page____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

4/ Subparagraph 1(a) does not apply to the holder of a claim, lien, or encumbrance.

4. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land or any production therefrom, furnishing the Government with two true copies of such notice; and

5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No. ____".)

Dated this 31st day of January, 1968.

Malcolm B. Gould	(Seal)	57 Post St. (Street) San Francisco, Calif. (City & State)
Bruce A. Gould	(Seal)	57 Post St. (Street) San Francisco Calif. (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)

I, Bruce A. Gould (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Malcolm B. Gould (Name), who signed this agreement was then President (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Malcolm B. Gould
(Corporate Seal)

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS 1/

To the United States of America:

That certain land in the County of Lake, State of California, described as follows: 2/ The NW½ of Lot 41 and the SE½ of the Queen Unpatented Mining Claim in Section 1, Twp. 10 North, Rge. 8 West, MDM., containing 30.65 acres, more or less.

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Helen Mine, a Joint Venture 3/

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same. 4/

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

That certain Lease and Option Agreement dated July 1, 1964 between Klau Mine, Inc., as Lessor, and William C. McCulloch, as Lessee.

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated _____, and recorded in Book _____, Page ____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

4/ Subparagraph 1(a) does not apply to the holder of a claim, lien, or encumbrance.

4. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land or any production therefrom, furnishing the Government with two true copies of such notice; and

5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No.____".)

Dated this 31st day of January, 1968.

Malcolm B. Gould (Seal)	57 Post St. San Francisco, Calif.	(Street) (City & State)
Bruce R. Gould (Seal)	57 Post St. San Francisco Calif.	(Street) (City & State)
(Seal)		(Street) (City & State)
(Seal)		(Street) (City & State)
(Seal)		(Street) (City & State)
(Seal)		(Street) (City & State)

I, Bruce R. Gould (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Malcolm B. Gould (Name), who signed this agreement was then PRESIDENT (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Malcolm B. Gould
(Corporate Seal)

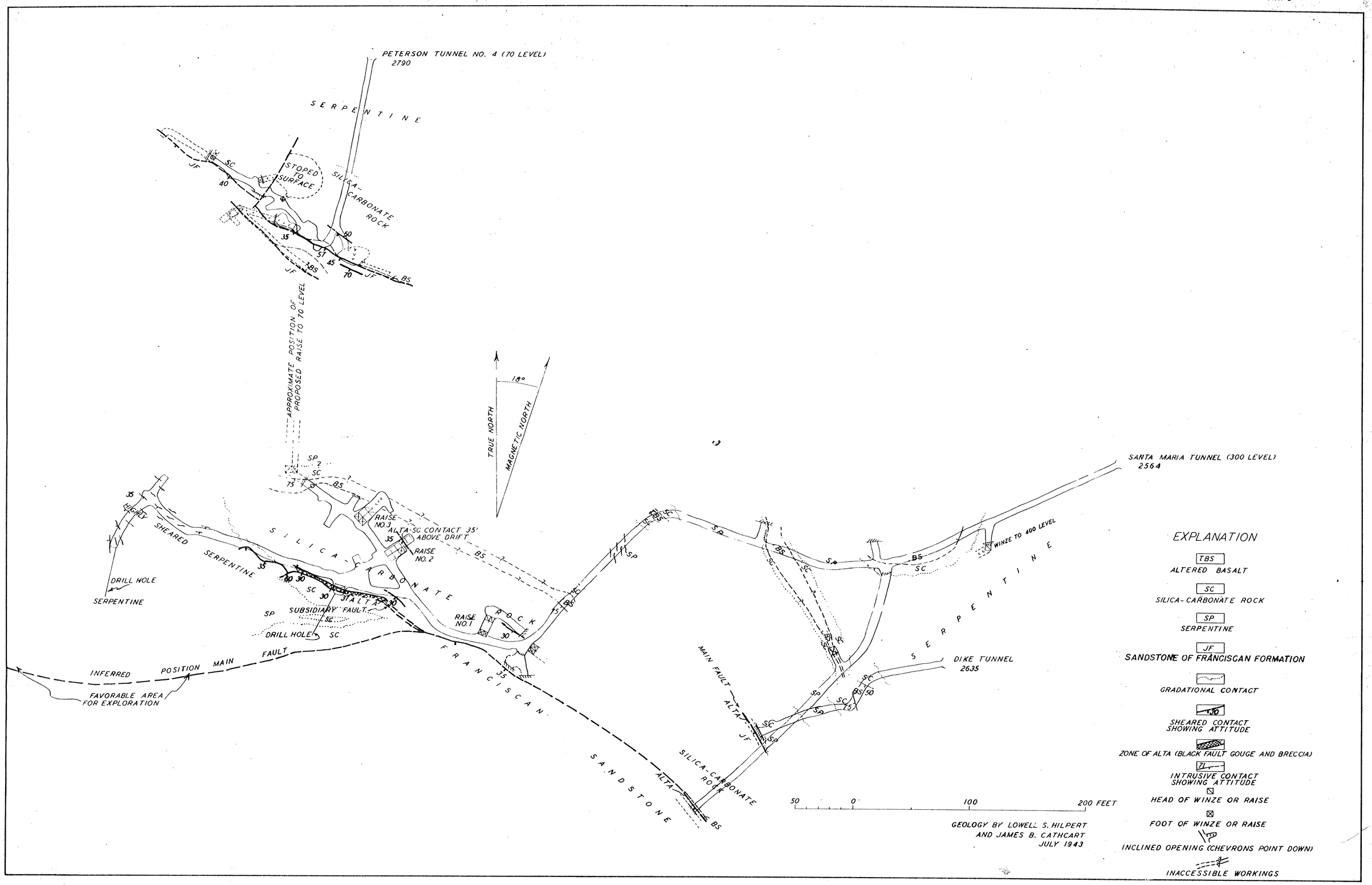
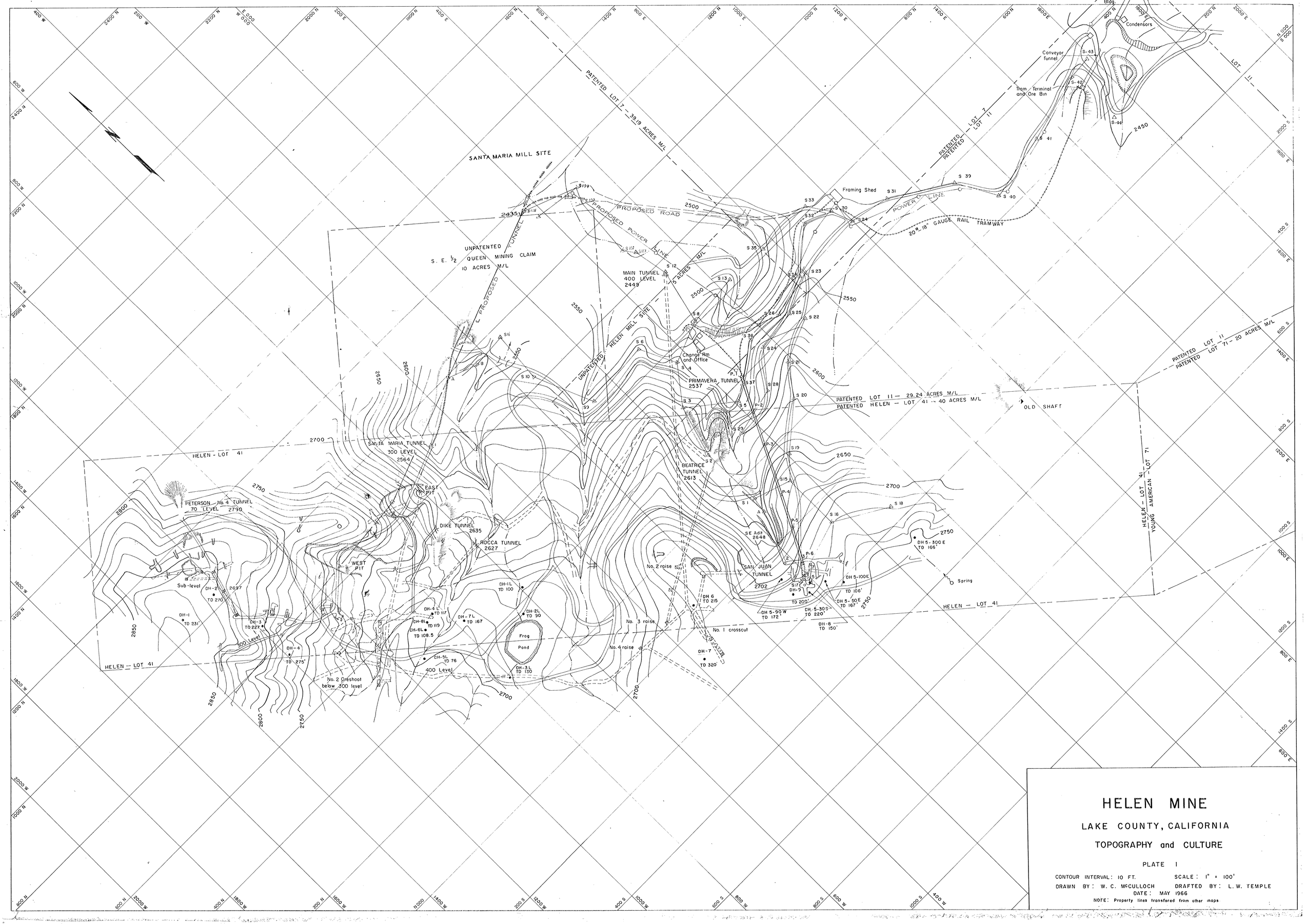


FIG. 3-GEOLOGIC MAP OF ACCESSIBLE WORKINGS OF THE HELEN QUICKSILVER MINE
MAYACMAS DISTRICT, LAKE COUNTY, CALIFORNIA


HELEN MINE
LAKE COUNTY, CALIFORNIA
TOPOGRAPHY and CULTURE
PLATE I
CONTOUR INTERVAL: 10 FT.
SCALE: 1" = 100'
DRAWN BY: W. C. McCULLOCH
DRAFTED BY: L. W. TEMPLE
DATE: MAY 1966
NOTE: Property lines transfered from other maps
Middletown, 70 miles
Generator House
Plant Bldg.
Condensors
Conveyor Tunnel
Tram Terminal and Ore Bin
PATENTED LOT 7 — 39.19 ACRES M/L
PATENTED LOT 7
PATENTED LOT 11
LOT 7
LOT 11
SANTA MARIA MILL SITE
PROPOSED ROAD
PROPOSED POWER LINE
POWER LINE
20#, 18" GAUGE RAIL TRAMWAY
Framing Shed
UNPATENTED QUEEN MINING CLAIM
S. E. 1/2
10 ACRES M/L
PROPOSED TUNNEL
MAIN TUNNEL
400 LEVEL
2449
5 ACRES M/L
UNPATENTED HELEN MILL SITE
Change Rm and Office
PRIMAVERA TUNNEL
2537
PATENTED LOT 11 — 29.24 ACRES M/L
PATENTED HELEN — LOT 41 — 40 ACRES M/L
PATENTED LOT 11
PATENTED LOT 71 — 20 ACRES M/L
OLD SHAFT
HELEN — LOT 41
SANTA MARIA TUNNEL
300 LEVEL
2564
BEATRICE TUNNEL
2613
EAST PIT
PETERSON No. 4 TUNNEL
70 LEVEL 2790
DIKE TUNNEL
2635
ROCCA TUNNEL
2627
WEST PIT
SE Adit
2648
SAN JUAN TUNNEL
2702
No. 2 raise
No. 3 raise
No. 4 raise
No. 1 crosscut
No. 2 Oreshoot below 300 level
Frog Pond
Sub-level
300 Level
400 Level
HELEN — LOT 41
YOUNG AMERICAN — LOT 71
Spring
DH-1 TD 231'
DH-2 TD 270
DH-3 TD 227
DH-4 TD 275'
DH-4L TD 117
DH-8L TD 119
DH-6L TD 108.5
DH-5L TD 76
DH-7L TD 167
DH-1L TD 100
DH-2L TD 90
DH-3L TD 120
DH 6 TD 215
DH-7 TD 320'
DH-9 TD 200'
DH 5-90 W TD 172'
DH 5-30 S TD 220'
DH-8 TD 150'
DH 5-50 E TD 167'
DH 5-100 E TD 106'
DH 5-300 E TD 166'