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DEFENSE MINERALS ADMINISTRATION
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DMA Docket No. 3805

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August 15, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $3974
Docket No. DMEA 3305 Mercury
Kenneth Emigh
Polar Star Mine
San Luis Obispo County, California

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

(1) The applicant, Kenneth Emigh, 550 Meder Street, Santa Cruz, California, requested exploration assistance in the amount of $3974 for bulldozer stripping and removal of overburden and debris from the ridge top and open pit, and reopening portals of old mine workings, also repair of an inclined shaft.

(2) The applicant claims control, 67% by ownership, 33% by lease, of the Polar Star Nos. 1 to 9 unpatented lode mining claims, located in the N.W. ¼, Sec. 13, T. 25 S., R. 6 E., M.D.B.&M., San Luis Obispo County, California. These claims are recorded in Vol. 13, page 270 and 359, Vol. 316, pages 435 and 436, and Vol. 326, pages 117, 118, and 119, in the County records at San Luis Obispo, California.

(3) The proposed program is by bulldozer stripping over burden on the ridge above the open pit, trenching above the pit to divert run off and prevent erosion, removing debris from the open pit by bulldozing, continuing the dozing to the depth of the caved part of the inclined shaft, repairing that shaft, and reopening the portal of the 85-foot level adit.

(4) In the area explored by the Polar Star mine, scattered boulders of mercury occur on and near the surface, in the overburden over northwest trending shear zones and faults in graywacke and shales. Underground exploration

has failed to find extensions in bedrock of the sur face ore boulders. They may have come down the steep hillside from the outcrops of a prominent zone of sili fied breccia above the highest workings, which structure may have acted as a "capping" to localize the small quicksilver deposits found in the upper mine workings.

Almost all of the work proposed by the applicant is cleanup or preparatory in nature. It might develop a few hundred tons of retort ore, but would not add materially to the mine's or the country's supply of mercury.

One item proposed, to re open the portal of the 85 foot level adit, if followed by drifting approximately 60 feet to cut ore indicated in two drill holes, might be productive. But the applicant, a bulldozer operator by trade, does not wish to do this underground work.

(5) The Field Team concludes that there is little probability of making a significant discovery and recommends denial. The Commodity Divisions of the Geological Survey and the Bureau of Mines concur in this recommendation.

Thos. L. Chapman, Acting Chief
Iron and Ferro-Alloys Division

SPHolt/ls
8/15/55

cc: Docket
Adm. Read. File
Code 400
Oper. Committee

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

400

August 11, 1955

Re: DMEA-3805
Kenneth Emigh
Polar Star Mine
San Luis Obispo
County, Calif.
$3,974 - Mercury

Memorandum

To: W. S. Martin, DMEA

From: Acting Chief,
Branch of Base Metals

Subject: Recommendation for denial of application

The applicant appears to have mining rights on the old Polar Star mine and proposes a program of bulldozer work which consists of removing overburden and debris from the ridge top and from the open pit excavated by the Polar Star Quicksilver mine partnership in 1943. The program includes trenching to divert future run-off and thus prevent debris from again covering the mine workings. Following this preparatory work the applicant proposes to deepen the open pit with a bulldozer fitted with rooter to the level of the caved No. 1 incline about 42 feet below the floor of the present pit. He also plans to use the bulldozer to open the debris covered 85-foot upper adit portal after which he hopes to obtain DMEA advice on exploration program in the adit.

The program as outlined is almost wholly preparatory work which cannot explore or prove ore. That part of the work to deepen the old open pit would appear to have small chance for success since the previous operators did not consider the ground commercial when plant facilities existed at the property, and the ground was opened. It would appear that the area in the immediate vicinity of the previous workings has a very small potential. For the above reasons I concur with the Field Team that the application be denied.

Helena M. Meyer

Copy to - H. M. Meyer
O. M. Bishop
Mr. Kiilsgaard, Room 5222
Division of Minerals
Files

400

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

1605 Evans Avenue
Reno, Nevada

July 18, 1955

Memorandum

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

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-3805 (Mercury)
Kenneth Emigh
Polar Star Mine
San Luis Obispo County, California

Reference is made to your letter of May 24, 1955 in which the above subject application was referred to this office for a field examination.

Attached are four copies of a report by E. H. Bailey, Geological Survey and B. H. Sheahan, Bureau of Mines.

The report would indicate that small scale exploration, consisting of re-opening the 85-foot level and a moderate amount of drifting, may be warranted. The ability of the applicant to perform this work is questioned, as well as the title to the ground and the applicant's right to operate thereon. In addition, the applicant was not interested in working underground. For these reasons, the report recommends that the application for aid be denied. Roscoe Smith and I concur in the recommendation.

S. Ricker

Attach.

UNITED STATES
Department of the Interior
Douglas McKay, Secretary

Defense Minerals Exploration Administration

Report of Examination by Field Team
Region II

Application Report

DMEA-3805 (Mercury)
Kenneth Emigh
Polar Star Quicksilver Mine
San Luis Obispo County, California

E. H. Bailey
Geologist
U. S. Geological Survey

B. H. Sheahan
Mining Engineer
U. S. Bureau of Mines

July 15, 1955

INTRODUCTION

An application for Governmental assistance was received from Kenneth Enigh, 330 Meder Street, Santa Cruz, California, on May 6, 1955 by the Defense Minerals Exploration Administration. The applicant proposed to expend about $3,974.00 on exploration work; the principal part of which would include a surface stripping operation by use of a bulldozer in the vicinity of old workings adjacent to an incline shaft (see fig. 2).

A field examination was requested by the Operating Committee on May 24, and was made by B. H. Sheahan of the Bureau of Mines and E. H. Bailey of the Geological Survey on June 17, 1955, accompanied by the applicant. Mr. Roscoe M. Smith of the Geological Survey and Tsang-po Yen, a visiting geologist, also accompanied the examiners add assisted with the examination.

CONCLUSIONS AND RECOMMENDATIONS

The property would probably make an attractive mining lease for a two or three man crew. Reopening the 85-foot level tunnel (altitude 460-feet) and extending it 60 feet is the logical method of exploration but this type of work is beyond the capabilities of the applicant, who is a bulldozer operator, and not a miner.

The applicant is hazy on his rights to operate the property and feels that bringing in miners might result in his expulsion from the Hearst Estate.

It is recommended that the application be denied.

LOCATION, ACCESSIBILITY AND LOCAL RESOURCES

The Polar Star quicksilver mine is located in the brush covered, western foothills of the Santa Lucia Range in the northwestern portion of

San Luis Obispo County, Calif. The mine is on a portion of the Hearst ranch in the NW 1/4 of section 13, T. 25 S., R. 6 E., M.D.B.&M.

To reach the property from San Simeon, Calif. (the nearest town), paved State Highway No. 1 is followed northerly along the Pacific Coast 12.1 miles to a private dirt road (closed by a locked gate). This road is followed easterly 2.2 miles winding across and along San Carpoforo Creek to a cabin on the Polar Star No. 1 claim. The road is inaccessible during wet weather. There are no bridges at stream crossings and the road is muddy and passage difficult at certain times of the year. A steep trail leads southeasterly 0.2 miles from the cabin to an incline shaft on the Polar Star No. 1 claim (see fig. 2).

Minor items of supplies can be obtained at San Simeon, Calif. San Luis Obispo, California, which is located 56 miles by road south of the mine, is the nearest city where labor and equipment can be obtained. There is an excellent supply of water, but electric power is not available at the mine.

HISTORY AND PRODUCTION

The Polar Star mine in San Luis Obispo County, also known at times as the Black Hawk and Santa Clara mine, apparently was first worked in 1870, although records of early activity on the property are sketchy and incomplete. The first activity consisted of retorting float but the quantity of mercury recovered is not recorded. In order to "expose the vein" sometime between 1890 and 1900, an attempt was made to hydraulic the hillside. Doubtless during all this period short adits were also being driven into the hill to find the "main vein," and there is a

record that in 1896 one man working on the property had driven a 150 foot adit. At intervals between 1870 and 1910 undoubtedly some quicksilver was retorted but the only early recorded production was two flasks in 1904.

So far as we can ascertain, the mine remained idle between 1904 and 1935 when it was leased by E. D. Rodgers of San Simeon. Mr. Rodgers drove the tunnel at altitude 365 feet (see fig. 2) to relocate old workings, but his production of 30 flasks recovered in 1935, 1936, and 1937 came chiefly from float and dumps. By 1941 Rodgers had driven the upper tunnel, and between late 1941 and early 1943 he recovered 86 flasks of quicksilver from ore found by these upper workings.

The property was leased in early 1943 by a partnership who formed the Polar Star Quicksilver Mining Company. This company, with Mr. L. K. Requa as managing partner, installed by September 9, 1943 a 50-ton Gould rotary furnace brought from the Idaho Almaden property. Between September 9 and December 3, 1943 the furnace was operated on ore from the open pit and 175 flasks of mercury were recovered. Exploration was continued through the inclined shaft and an additional 55 flasks were recovered by May 29, 1944. The furnace was then moved from the property after having treated a reported 1,200 tons of ore averaging about 14 pounds to the ton. As this amounts to only 24 days of operation at full 50-ton/day capacity it seems likely the tonnage was larger and the grade of the ore treated was less.

From March 1, 1945 to March 1, 1946, J. Stokes and a Mr. Mason of San Jose are said to have recovered 7 flasks of quicksilver. Since then the property has been idle and non-productive.

PROPERTY AND OWNERSHIP

Mr. Kenneth Emigh, applicant for DMEA assistance, and operating cotenant of the property, stated that he purchased mineral rights on the Polar Star unpatented mining claims numbers 1 to 9 inclusive in 194" from Charlotte Rodgers and associates. The applicant stated that he owned a 67% interest and that his partner, Mr. Donald D. Rodgers, owned a 33% interest in the claims.

According to information presented by the applicant, surface rights are owned by the W. R. Hearst estate. It is the examining engineer's opinion that mineral rights may likewise be owned by the Hearst estate. The applicant never explained clearly how he acquires the keys to the locked gates, or why he is permitted access through the ranch.

The location certificate of the nine unpatented claims (Polar Star 1 to 9) were said to be recorded at San Luis Obispo, the county seat in Vol. 13, page 270, 369; Vol. 316, pages 435 and 436; Vol. 326, pages 117, 118, and 119.

The applicant planned to do the stripping work himself. He is an experienced bulldozer operator, welder and mechanic. He lacks mining experience and has obviously never worked underground. His docket application and some mine maps which he has obtained were of considerable value in the examination.

The only equipment on the property includes the following items:

	Condition
1 Automobile (Jeep), 1/4-ton	Fair
1 Truck, 1-1/2-ton, flat bed	Poor
1 Mine car, 16 cu. ft. cap.	Poor
Miscellaneous hand tools	Fair
1 Cabin	Poor

Several dilapidated pipe retorts and remains of furnace plants are of no operational value. These remains are of historical interest.

GENERAL GEOLOGY

The rocks of an area of several square miles including the Polar Star claims consist of sheared graywacke and shale of the Franciscan group, generally assigned a Jurassic age. Northwest trending faults and wide crush zones, which have never been mapped in detail, traverse the mine area and form extensions of structures mapped[1/] in the San Luis Obispo quicksilver district lying a few miles to the southeast. The topography is quite steep and landslides are prevalent.

ORE DEPOSITS

In the area explordd by the workings of the Polar Star mine, the rocks are considerably crumpled and sheared. Exposures are poor, and on the steep slope there has been much surface sloughing but probably no deep seated landsliding. In the early days of mining, scattered boulders of ore were recovered from the surface, but underground exploration failed to find extensions of the surface ores. Because of

1/ Eckel, E. B., Yates, R. G., and Granger, A. E., Quicksilver Deposits in San Luis Obispo County and Southwestern Monterey County, California: U. S. Geol. Survey Bull. 922-R, 1941. Plate 18

this, many reports suggest the area is covered by a landslide; however, it is more likely the scattered boulders have simply tumbled down hill from outcrops near the highest workings. Just above these workings is exposed a prominent zone of silicified breccia about 20 feet thick, which strikes nearly north. This zone above the workings dips 30° east into the hill, but at lower altitudes is steeper and strikes northwesterly. This arcuate structure may in a vague fashion have acted as a capping" for the small ore bodies explored in the upper workings, although they are a few tens of feet below it. No other structures favorable for localizing quicksilver ore bodies were observed, and it is likely that the small pods so far discovered are scattered at random through the highly sheared and altered graywacke and shale. Judging from records in the application, the cinnabar ore bodies range from a few inches to 30 feet in width, and the largest contains about 1,000 tons.

ORE RESERVES

The little ore seen in the inclined shaft workings near the cave 42 feet from the collar consisted of cinnabar in veinlets, coating fractures, and disseminated in altered graywacke and shale. Selected pieces contained several percent mercury, but no quantity of material containing even 10 pounds of mercury per ton is in sight. The slope of the caved area adjacent to the shaft indicated muck from a stope had collapsed into the shaft, suggesting the stope area is larger than indicated on the applicant's map. No reserves of any grade can be reliably inferred from the exposures open for inspection or from the applicant's maps.

PROPOSED EXPLORATION

The applicant proposes to:

(1) Strip overburden above the open pit.

(2) Trench above the pit to prevent erosion and divert run-off.

(3) Bulldoze out the sloughed open pit and continue bulldozing to the depth of the caved part of the inclined shaft.

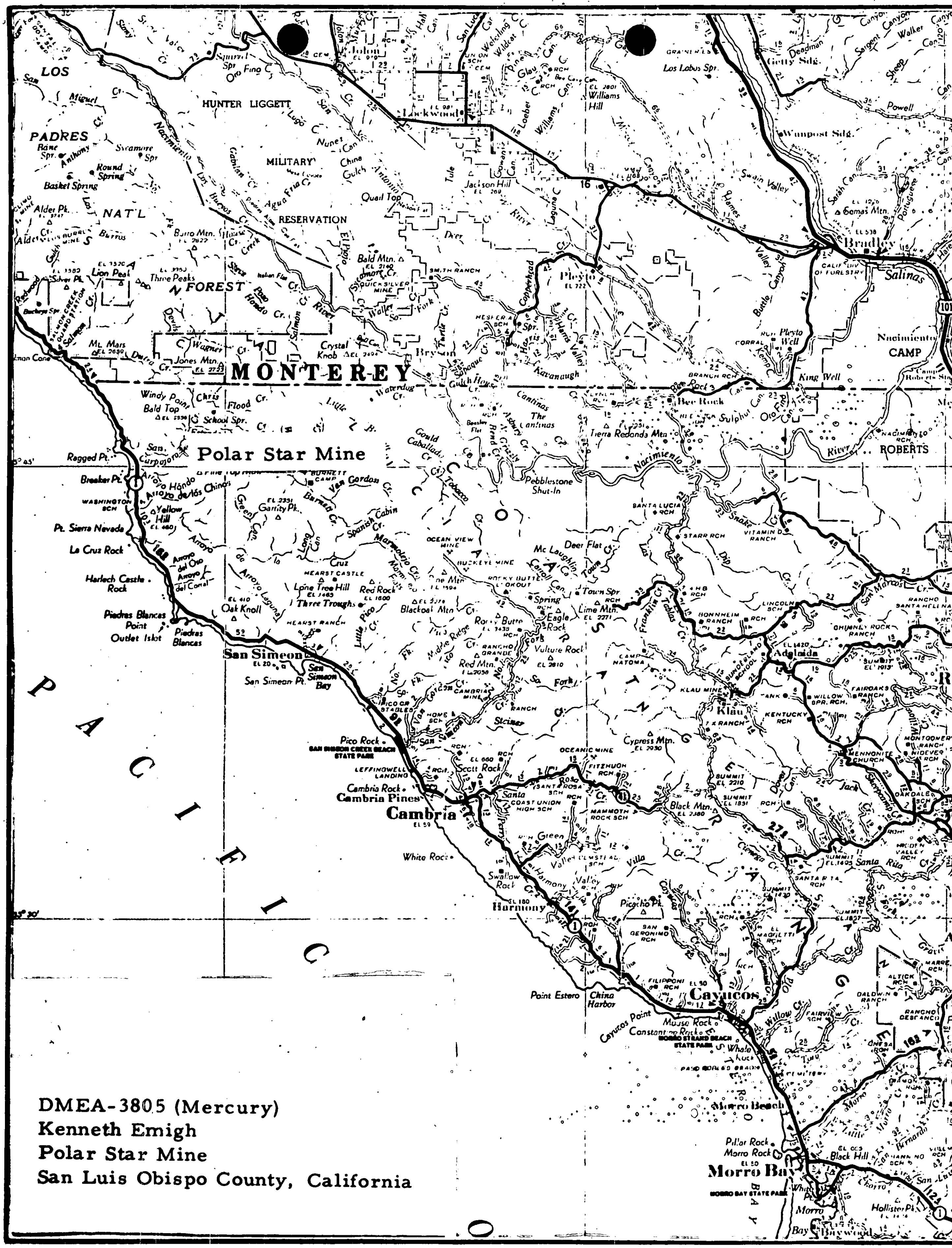
(4) Reopen the portal of the 85-foot level tunnet (altitude 460 on figure 2).

(5) Reopen, and repair, the inclined shaft.

The cost of this work is estimated by the applicant to be $3,974.00.

The bulldozing in the area of the open pit and caved shaft might permit the mining of a few hundred tons of retort ore. It would not materially add to the development of the mine or the country's supply of mercury. For this reason, it is recommended that items 1, 2, 3, and 5 be denied.

Sensible small scale exploration of the property would consist of reopening the 85-foot level adit (item 4 above) and drifting the 60 feet required to reach the ore indicated in the two drill holes extending from this level. This ore lies below that exposed by the inclined shaft workings and may be a downward extension of the same ore body.



DMEA-3805 (Mercury)
Kenneth Emigh
Polar Star Mine
San Luis Obispo County, California

Fig. 1 LOCATION MAP CALIFORNIA

IN REPLY REFER TO:

400

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

July 27, 1955

Re: DMEA 3805
Kenneth Enigh
Polar Star Mine
San Luis Obispo Co., Calif.
$3,574.00 - Mercury

Memorandum

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

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

Subject: Review of Field Team report

The examiners consider the potential of a part of the target area too small. The applicant does not see fit to do underground work on a project which the examiners consider a fit target of exploratory work.

In the circumstances the denial recommendation of the Field Team is quite justified and concurred with hereby.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-7/27/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Meyer, 2623

RECEIVED
JUL 28 1955

400

MAY 2 4 1955

Mr. Kenneth Enigh
550 Mader Street
Santa Cruz, California

Re: Docket No. DMEA 3805 - Mercury
Polar Star mine
San Luis Obispo County, California

Dear Mr. Enigh:

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

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

Sincerely yours,

J. V. Mittendorf

Administrator

FARutledge:foc
5-20-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. II
~~Messrs.~~ H. M. Meyer, USBM
T. H. Kiilsgaard, USGS

400

MAY 24 1955

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

Re: Docket No. DMEA 3805 - Mercury
Kenneth Enigh
Polar Star mine
San Luis Obispo County, California

Dear Mr. Richer:

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

In the event that an exploration project will be recommended by the Field Team, an Owner's Consent to Lien should be obtained covering that part of the interest in the property not owned by Mr. Enigh.

Two copies of a relevant memorandum dated May 13, 1955, by N. E. Nelsen, Geological Survey, are enclosed for your information.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosure

RARutledge:foc 5-20-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. II
Messrs. H. M. Meyer, USBM
T. H. Kiilsgaard, USGS

APPROVED:

J. H. Hedges

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

IN REPLY REFER TO:

402

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

May 18, 1955

Re: DMEA-3805
Kenneth Enigh
Polar Star Mine
San Luis Obispo Co.,
California
$3,974 - Mercury

Copy returned 402

Memorandum

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

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

Subject: Review of application

The applicant would seem to have developed some plausible reasons for expecting to find some sizable bits of ore remaining in this old mine.

In view of his modest request for assistance a Field Team review and perhaps an inspection is indicated and here recommended.

N. E. Nelson

N. E. Nelson

NENelson:hlm
G-5/18/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
M. M. Meyer, 2623 Interior

AUG 17 1955

400

Mr. Kenneth Emigh
550 Meder Street
Santa Cruz, California

Re: Docket No. DMEA 3305 - Mercury
Polar Star Mine
San Luis Obispo County, Calif.

Dear Mr. Emigh:

Your application for aid for an exploration project and other data available to us in Washington concerning the above-referenced property have been reviewed.

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

Careful study of our information, although noting a small amount of mercury mineralization in surface boulders and overburden, also in the inclined shaft near the caved area, indicates to us that the probability of disclosing minable mercury ore reserves by your proposed program is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

We wish to thank you for your interest in the Defense Minerals Exploration Administration program and for bringing this property to our attention.

Sincerely yours,

D.S. Mingo

Administrator

cc: Docket
FT, Reg.2
Code 400
Oper. Comm.
Adm. Read. File
H. M. Meyer, USBM
Thor Kiilsgaard, USGS

SPHolt/ls
8/15/55

400

DOCKET
Surname:
Holt
Chapman
Kiilsgaard
Guhen
Selfridge

AUG 17 1955

Mr. Kenneth Emigh
550 Meder Street
Santa Cruz, California

Re: Docket No. DMEA 3805 - Mercury
Polar Star Mine
San Luis Obispo County, Calif.

Dear Mr. Emigh:

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E. O. Mittendorf

Administrator

cc: Docket
FT, Reg.2
Code 400
Oper. Comm.
Adm. Read. File
H. M. Meyer, USBM
Thor Kiilsgaard, USGS

SPHolt/ls
8/15/55

DOCKET
Surname: Holt Chapman

August 15, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $3974
Docket No. DMEA 3805 Mercury
Kenneth Emigh
Polar Star Mine
San Luis Obispo County, California

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(4) In the area explored by the Polar Star mine, scattered boulders of mercury occur on and near the surface, in the overburden over northwest trending shear zones and faults in graywacke and shales. Underground exploration

has failed to find extensions in bedrock of the surface ore boulders. They may have come down the steep hillside from the outcrops of a prominent zone of silicified breccia above the highest workings, which structure may have acted as a "capping" to localize the small quicksilver deposits found in the upper mine workings.

Almost all of the work proposed by the applicant is cleanup or preparatory in nature. It might develop a few hundred tons of retort ore, but would not add materially to the mine's or the country's supply of mercury.

One item proposed, to re open the portal of the 85 foot level adit, if followed by drifting approximately 60 feet to cut ore indicated in two drill holes, might be productive. But the applicant, a bulldozer operator by trade, does not wish to do this underground work.

(5) The Field Team concludes that there is little probability of making a significant discovery and recommends denial. The Commodity Divisions of the Geological Survey and the Bureau of Mines concur in this recommendation.

Thos. L. Chapman, Acting Chief
Iron and Ferro-Alloys Division

SPHolt/ls
8/15/55

cc: Docket
Adm. Read. File
Code 400
Oper. Committee

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

August 15, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

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Docket No. DMEA 3805 - Mercury
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Thos. L. Chapman

Thos. L. Chapman, Acting Chief
Iron and Ferro-Alloys Division

Docket

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

Copy retained 400

August 11, 1955

Re: DMEA-3805
Kenneth Emigh
Polar Star Mine
San Louis Obispo
County, Calif.
$3,974 - Mercury

Memorandum

To: W. S. Martin, DMEA

From: Acting Chief,
Branch of Base Metals

Subject: Recommendation for denial of application

The applicant appears to have mining rights on the old Polar Star mine and proposes a program of bulldozer work which consists of removing overburden and debris from the ridge top and from the open pit excavated by the Polar Star Quicksilver mine partnership in 1943. The program includes trenching to divert future run-off and thus prevent debris from again covering the mine workings. Following this preparatory work the applicant proposes to deepen the open pit with a bulldozer fitted with rooter to the level of the caved No. 1 incline about 42 feet below the floor of the present pit. He also plans to use the bulldozer to open the debris covered 85-foot upper adit portal after which he hopes to obtain DMEA advice on exploration program in the adit.

The program as outlined is almost wholly preparatory work which cannot explore or prove ore. That part of the work to deepen the old open pit would appear to have small chance for success since the previous operators did not consider the ground commercial when plant facilities existed at the property, and the ground was opened. It would appear that the area in the immediate vicinity of the previous workings has a very small potential. For the above reasons I concur with the Field Team that the application be denied.

Helena M. Meyer

Helena M. Meyer

Copy to - H. M. Meyer
O. M. Bishop
Mr. Kiilsgaard, Room 5222
Division of Minerals
Files

IN REPLY REFER TO:

Docket

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

July 27, 1955

Re: DMEA 3805
Kenneth Emigh
Polar Star Mine
San Louis Obispo Co., Calif.
$3,974.00 - Mercury

WSM

Memorandum

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

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

Subject: Review of Field Team report

The examiners consider the potential of a part of the target area too small. The applicant does not see fit to do underground work on a project which the examiners consider a fit target of exploratory work.

In the circumstances the denial recommendation of the Field Team is quite justified and concurred with hereby.

N. E. Nelson

N. E. Nelson

RECEIVED
JUL 28 1955

Copy retained 400

DMEA

Docket

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

1605 Evans Avenue
Reno, Nevada

July 18, 1955

WSM

Memorandum

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

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-3805 (Mercury)
Kenneth Emigh
Polar Star Mine
San Luis Obispo County, California

Reference is made to your letter of May 24, 1955 in which the above subject application was referred to this office for a field examination.

Attached are four copies of a report by E. H. Bailey, Geological Survey and B. H. Sheahan, Bureau of Mines.

The report would indicate that small scale exploration, consisting of re-opening the 85-foot level and a moderate amount of drifting, may be warranted. The ability of the applicant to perform this work is questioned, as well as the title to the ground and the applicant's right to operate thereon. In addition, the applicant was not interested in working underground. For these reasons, the report recommends that the application for aid be denied. Roscoe Smith and I concur in the recommendation.

S. Ricker

S. Ricker

Attach.

Reviewed by
DMEA OPERATING COMMITTEE
7-25-55
(date)

BUREAU OF MINES
WASHINGTON, D. C.
JUL 20 8 48 AM '55

UNITED STATES
Department of the Interior
Douglas McKay, Secretary

Defense Minerals Exploration Administration

RECEIVED
JUL 20 1955

Report of Examination by Field Team
Region II

Application Report

DMEA-3805 (Mercury)
Kenneth Emigh
Polar Star Quicksilver Mine
San Luis Obispo County, California

E. H. Bailey
Geologist
U. S. Geological Survey

B. H. Sheahan
Mining Engineer
U. S. Bureau of Mines

July 15, 1955

Reviewed by
DMEA OPERATING COMMITTEE
7-25-55
(date)

INTRODUCTION

An application for Governmental assistance was received from Kenneth Emigh, 550 Meder Street, Santa Cruz, California, on May 6, 1955 by the Defense Minerals Exploration Administration. The applicant proposed to expend about $3,974.00 on exploration work; the principal part of which would include a surface stripping operation by use of a bulldozer in the vicinity of old workings adjacent to an incline shaft (see fig. 2).

A field examination was requested by the Operating Committee on May 24, and was made by B. H. Sheahan of the Bureau of Mines and E. H. Bailey of the Geological Survey on June 17, 1955, accompanied by the applicant. Mr. Roscoe M. Smith of the Geological Survey and Tsang-po Yen, a visiting geologist, also accompanied the examiners and assisted with the examination.

CONCLUSIONS AND RECOMMENDATIONS

The property would probably make an attractive mining lease for a two or three man crew. Reopening the 85-foot level tunnel (altitude 460-feet) and extending it 60 feet is the logical method of exploration but this type of work is beyond the capabilities of the applicant, who is a bulldozer operator, and not a miner.

The applicant is hazy on his rights to operate the property and feels that bringing in miners might result in his expulsion from the Hearst Estate.

It is recommended that the application be denied.

LOCATION, ACCESSIBILITY AND LOCAL RESOURCES

The Polar Star Quicksilver mine is located in the brush covered, western foothills of the Santa Lucia Range in the northwestern portion of

San Luis Obispo County, Calif. The mine is on a portion of the Hearst ranch in the NW 1/4 of section 13, T. 25 S., R. 6 E., M.D.B.&M.

To reach the property from San Simeon, Calif. (the nearest town), paved State Highway No. 1 is followed northerly along the Pacific Coast 12.1 miles to a private dirt road (closed by a locked gate). This road is followed easterly 2.2 miles winding across and along San Carpoforo Creek to a cabin on the Polar Star No. 1 claim. The road is inaccessible during wet weather. There are no bridges at stream crossings and the road is muddy and passage difficult at certain times of the year. A steep trail leads southeasterly 0.2 miles from the cabin to an incline shaft on the Polar Star No. 1 claim (see fig. 2).

Minor items of supplies can be obtained at San Simeon, Calif. San Luis Obispo, California, which is located 56 miles by road south of the mine, is the nearest city where labor and equipment can be obtained. There is an excellent supply of water, but electric power is not available at the mine.

HISTORY AND PRODUCTION

The Polar Star mine in San Luis Obispo County, also known at times as the Black Hawk and Santa Clara mine, apparently was first worked in 1870, although records of early activity on the property are sketchy and incomplete. The first activity consisted of retorting float but the quantity of mercury recovered is not recorded. In order to "expose the vein" sometime between 1890 and 1900, an attempt was made to hydraulic the hillside. Doubtless during all this period short adits were also being driven into the hill to find the "main vein," and there is a

record that in 1896 one man working on the property had driven a 150 foot adit. At intervals between 1870 and 1910 undoubtedly some quicksilver was retorted but the only early recorded production was two flasks in 1904.

So far as we can ascertain, the mine remained idle between 1904 and 1935 when it was leased by E. D. Rodgers of San Simeon. Mr. Rodgers drove the tunnel at altitude 365 feet (see fig. 2) to relocate old workings, but his production of 30 flasks recovered in 1935, 1936, and 1937 came chiefly from float and dumps. By 1941 Rodgers had driven the upper tunnel, and between late 1941 and early 1943 he recovered 86 flasks of quicksilver from ore found by these upper workings.

The property was leased in early 1943 by a partnership who formed the Polar Star Quicksilver Mining Company. This company, with Mr. L. K. Requa as managing partner, installed by September 9, 1943 a 50-ton Gould rotary furnace brought from the Idaho Almaden property. Between September 9 and December 3, 1943 the furnace was operated on ore from the open pit and 175 flasks of mercury were recovered. Exploration was continued through the inclined shaft and an additional 55 flasks were recovered by May 29, 1944. The furnace was then moved from the property after having treated a reported 1,200 tons of ore averaging about 14 pounds to the ton. As this amounts to only 24 days of operation at full 50-ton/day capacity it seems likely the tonnage was larger and the grade of the ore treated was less.

From March 1, 1945 to March 1, 1946, J. Stokes and a Mr. Mason of San Jose are said to have recovered 7 flasks of quicksilver. Since then the property has been idle and non-productive.

PROPERTY AND OWNERSHIP

Mr. Kenneth Emigh, applicant for DMEA assistance, and operating cotenant of the property, stated that he purchased mineral rights on the Polar Star unpatented mining claims numbers 1 to 9 inclusive in 1947 from Charlotte Rodgers and associates. The applicant stated that he owned a 67% interest and that his partner, Mr. Donald D. Rodgers, owned a 33% interest in the claims.

According to information presented by the applicant, surface rights are owned by the W. R. Hearst estate. It is the examining engineer's opinion that mineral rights may likewise be owned by the Hearst estate. The applicant never explained clearly how he acquires the keys to the locked gates, or why he is permitted access through the ranch.

The location certificate of the nine unpatented claims (Polar Star 1 to 9) were said to be recorded at San Luis Obispo, the county seat in Vol. 13, page 270, 369; Vol. 316, pages 435 and 436; Vol. 326, pages 117, 118, and 119.

The applicant planned to do the stripping work himself. He is an experienced bulldozer operator, welder and mechanic. He lacks mining experience and has obviously never worked underground. His docket application and some mine maps which he has obtained were of considerable value in the examination.

The only equipment on the property includes the following items:

	Condition
1 Automobile (Jeep), 1/4-ton	Fair
1 Truck, 1-1/2-ton, flat bed	Poor
1 Mine car, 16 cu. ft. cap.	Poor
Miscellaneous hand tools	Fair
1 Cabin	Poor

Several dilapidated pipe retorts and remains of furnace plants are of no operational value. These remains are of historical interest.

GENERAL GEOLOGY

The rocks of an area of several square miles including the Polar Star claims consist of sheared graywacke and shale of the Franciscan group, generally assigned a Jurassic age. Northwest trending faults and wide crush zones, which have never been mapped in detail, traverse the mine area and form extensions of structures mapped[1/] in the San Luis Obispo quicksilver district lying a few miles to the southeast. The topography is quite steep and landslides are prevalent.

ORE DEPOSITS

In the area explored by the workings of the Polar Star mine, the rocks are considerably crumpled and sheared. Exposures are poor, and on the steep slope there has been much surface sloughing but probably no deep seated landsliding. In the early days of mining, scattered boulders of ore were recovered from the surface, but underground exploration failed to find extensions of the surface ores. Because of

1/ Eckel, E. B., Yates, R. G., and Granger, A. E., Quicksilver Deposits in San Luis Obispo County and Southwestern Monterey County, California: U. S. Geol. Survey Bull. 922-R, 1941. Plate 78

this, many reports suggest the area is covered by a landslide; however, it is more likely the scattered boulders have simply tumbled down hill from outcrops near the highest workings. Just above these workings is exposed a prominent zone of silicified breccia about 20 feet thick, which strikes nearly north. This zone above the workings dips 30° east into the hill, but at lower altitudes is steeper and strikes northwesterly. This arcuate structure may in a vague fashion have acted as a capping" for the small ore bodies explored in the upper workings, although they are a few tens of feet below it. No other structures favorable for localizing quicksilver ore bodies were observed, and it is likely that the small pods so far discovered are scattered at random through the highly sheared and altered graywacke and shale. Judging from records in the application, the cinnabar ore bodies range from a few inches to 30 feet in width, and the largest contains about 1,000 tons.

ORE RESERVES

The little ore seen in the inclined shaft workings near the cave 42 feet from the collar consisted of cinnabar in veinlets, coating fractures, and disseminated in altered graywacke and shale. Selected pieces contained several percent mercury, but no quantity of material containing even 10 pounds of mercury per ton is in sight. The slope of the caved area adjacent to the shaft indicated muck from a stope had collapsed into the shaft, suggesting the stope area is larger than indicated on the applicant's map. No reserves of any grade can be reliably inferred from the exposures open for inspection or from the applicant's maps.

PROPOSED EXPLORATION

The applicant proposes to:

(1) Strip overburden above the open pit.

(2) Trench above the pit to prevent erosion and divert run-off.

(3) Bulldoze out the sloughed open pit and continue bulldozing to the depth of the caved part of the inclined shaft.

(4) Reopen the portal of the 85-foot level tunnet (altitude 460 on figure 2).

(5) Reopen, and repair, the inclined shaft.

The cost of this work is estimated by the applicant to be $3,974.00.

The bulldozing in the area of the open pit and caved shaft might permit the mining of a few hundred tons of retort ore. It would not materially add to the development of the mine or the country's supply of mercury. For this reason, it is recommended that items 1, 2, 3, and 5 be denied.

Sensible small scale exploration of the property would consist of reopening the 85-foot level adit (item 4 above) and drifting the 60 feet required to reach the ore indicated in the two drill holes extending from this level. This ore lies below that exposed by the inclined shaft workings and may be a downward extension of the same ore body.

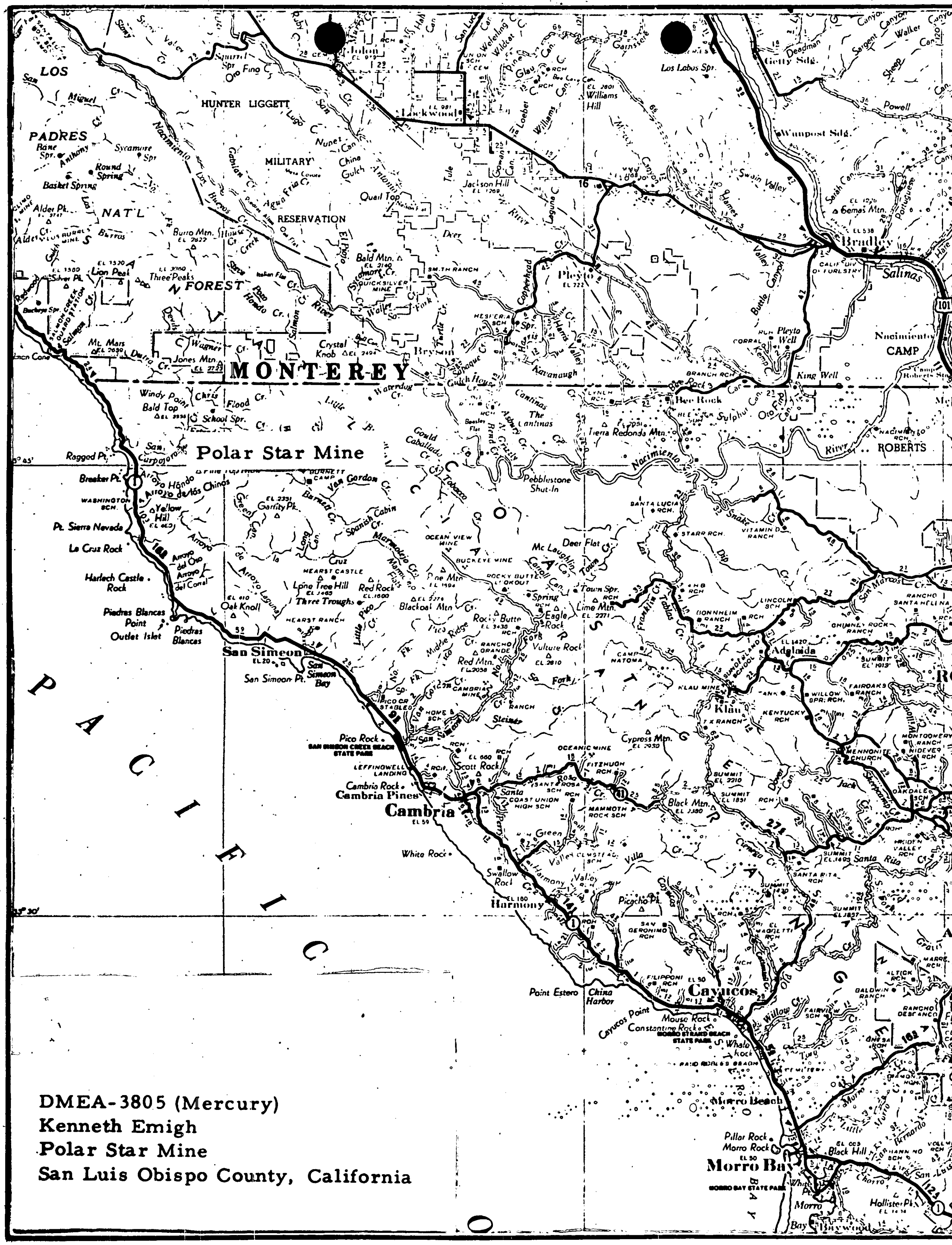


Fig. 1 LOCATION MAP CALIFORNIA

DOCKET
SURNAME
Martin
Meyer
Hedges
Killsgaard
Selfridge
F. Reuss

400

MAY 2 4 1955

Mr. Kenneth Enigh
550 Mailer Street
Santa Cruz, California

Re: Docket No. DMEA 3805 - Mercury
Polar Star mine
San Luis Obispo County, California

Dear Mr. Enigh:

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

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

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FARutledge:foc
5-20-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. II
~~Memmm.~~ H. M. Meyer, USBM
T. H. Kiilsgaard, USGS

R.G.h.

DOCKET
SURNAME

400 Martin
Meyer
Selfridge
Kilsgaard

MAY 2 4 1955

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

Re: Docket No. DMEA 3805 - Mercury
Kenneth Enigh
Polar Star mine
San Luis Obispo County, California

Dear Mr. Richer:

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

In the event that an exploration project will be recommended by the Field Team, an Owner's Consent to Lien should be obtained covering that part of the interest in the property not owned by Mr. Enigh.

Two copies of a relevant memorandum dated May 18, 1955, by M. E. Nelson, Geological Survey, are enclosed for your information.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB)

Enclosure

RARutledge:foc 5-20-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. II
Messrs. H. M. Meyer, USBM
T. H. Kiilsgaard, USGS

APPROVED:

J. H. Hedges (JHB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JHB)
Member, Geological Survey

R.C.G.

Docket

IN REPLY REFER TO:

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

May 18, 1955

Re: DMEA-3805
Kenneth Emigh
Polar Star Mine
San Luis Obispo Co.,
California
$3,974 - Mercury

WSM

Copy retained 400

Memorandum

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

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

Subject: Review of application

The applicant would seem to have developed some plausible reasons for expecting to find some sizable bits of ore remaining in this old mine.

In view of his modest request for assistance a Field Team review and perhaps an inspection is indicated and here recommended.

N. E. Nelson

N. E. Nelson

May 13, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region II

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region II.

DMEA 3805 Kenneth Emigh

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

DMEA

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

Department of the Interior
Defense Minerals Administration
RECEIVED
MAY 12 1955

1605 Evans Avenue
Reno, Nevada

May 9, 1955

Memorandum

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

From: Executive Officer, DMEA Field Team, Region II

Subject: Loan Application - Mercury
Kenneth Emigh
550 Meder Street,
Santa Cruz, California

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

It would appear that a large portion of the applicant's proposal relates to preparatory work so that the Field Team can make a proper examination.

S. Ricker

Attach.

BUREAU OF MINES
WASHINGTON, D. C.

MAY 12 7 55 AM '55

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 12 1955

1605 Evans Avenue
Reno, Nevada

May 9, 1955

Memorandum

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

From: Executive Officer, DMEA Field Team, Region II

Subject: Loan Application - Mercury
Kenneth Emigh
550 Meder Street,
Santa Cruz, California

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

It would appear that a large portion of the applicant's proposal relates to preparatory work so that the Field Team can make a proper examination.

S. Ricker

Attach.

SRicker:gh
cc: R. M. Smith
File

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

Defense Minerals Administration
RECEIVED
MAY 12 1955

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

Not to be filled in by applicant

Docket No. DMEA-3805
Metal or Mineral Mercury
Date Received 5/9/55
Estimated Cost $3,974
Participation (Government %)

INSTRUCTIONS

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

Kenneth Emigh
550 Meder Street, Santa Cruz, Calif.
Operating cotenant

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Section 13, T.25 So., R. 6 E., San Carpojo Dist., San Luis Obispo Co., Calif.
Vol 13, page 270, 369; Vol 316, page 435, 436; Vol 326, page 117, 118, 119.

(*b*) State any mine name by which the property is known. Polar Star Quicksilver Mine

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Owner (67%)
Polar Star 1,2,3,4,5,6,7,8,9

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

(*e*) If you own the land, describe any liens or encumbrances on it

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

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Cinnabar

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within 45 days and be completed within 12 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? yes

(*b*) How do you propose to furnish your share of the costs?

☐ Money ☒ Use of equipment owned by you ☒ Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated May 6, 1955

Kenneth Emeigh
(Applicant)

By

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

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

4. Physical Description
(a & c)

Copy

Polar Star Quicksilver Mine

July 25, 1942

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 12 1955

This mine consists of three unpatented claims in the northwest corner of San Luis Obispo County.

The mine was prospected a great deal in early days with indifferent results, the attraction being the occasional finding of considerable pieces of rich cinnabar ore. Prospecting was suspended for many years, until about 5 years ago when intensive work was begun by Mr. E.D. Rodgers and associates.

The main working of interest is the upper tunnel. This is about 60 feet long; at approximately 30 feet in from the portal rich ore was encountered and continued for 35 feet and the face of the tunnel is in low grade ore. A sample was taken 35 feet long along the south side. This is sample No. 4 of Abbott Hanks' report; Mercury contents 13.4 lbs. per ton.

Two crosscuts were driven from this tunnel in the rich ore body. Fifteen feet of the side of the W. Crosscut was sampled; Sample No. 7, 13.7 lbs. mercury per ton; the face of this crosscut seems to be in low grade ore. Twelve feet of the side of the east crosscut was sampled; Sample No. 5, 60 lbs. mercury per ton; the face seems to be in low grade ore.

A winze was sunk about 4 feet at the end of the east crosscut. Seven feet length was sampled; Sample No. 6, 84 lbs. mercury per ton. The bottom of the winze is in high grade ore.

A raise was put up from the tunnel near the west end of the ore body; a grab sample only from 15 feet up could be secured, but

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

the sides of the raise seemed to be rich ore; Sample No. 8, 90.4 lbs. mercury per ton. The top of this rise cannot be more than 30 feet from the surface.

One other significant sample was taken of the waste sorted out of the rich ore; Sample No. 2, 5.6 lbs. mercury per ton. A sample of the upper tunnel dump was taken; Sample No. 3, 0.9 lbs. mercury per ton.

If one may be allowed to use these dimensions we have a rectangular block of ore 35 feet long along the tunnel; 31 feet wide along the crossucts (15x12x4); and 25 feet deep (15x6x4) through the raise and the winze. A block of ore of these dimensions (35x31x25) would contain 27,625 cubic feet; at 12.5 cubic feet per ton this is approximately 2,000 tons of ore.

There is a strong inclination to ignore the values shown in these samples and rely on the working results from the ore taken out of this tunnel. The cubic contents of the tunnel, raise, dump and crosscuts calls for a total of 178 tons, including thirty feet or more of low grade material at the portal of the tunnel. The mine is equipped with two retorts and condensers, each holding 125 lbs. of ore; these are charged three times a day, making the days's work 750 lbs. of ore. From December 2, 1941, when the new ore became available to July 25, 1942 (January and February idle), 528 charges of 250 lbs. each were run; this is 66 tons. This 66 tons of material produced 45 flasks of quicksilver. This was at the rate of 52 lbs. per ton of ore. Some hand sorting was done but the dump is not large.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

Taking 2,000 tons at 50 lbs. per ton (results of working) indicates 100,000 lbs. of mercury in the block.

Taking 2,000 tons at 20 lbs. per ton (45 flasks spread over the whole cubic contents of the upper tunnel) is 40,000 lbs. of mercury in the block.

Taking 2,000 tons at 13.4 lbs. per ton (Sample No. 2 along the ore body) is 26,800 lbs. of mercury in the block.

Taking quicksilver at the present price of approximately $2.40, these fantastic figures become $ 240,000, $ 96,000 and $ 64,320 gross, respectively.

The problem of continuity with depth is not elucidated by much evidence. An old tunnel 600 feet long and 350 below the upper tunnel was said to have shown pieces of rich ore; but whether it reached the ore channel is doubtful.

The well known geological irregularity of quicksilver deposits makes it impossible to predict any extension beyond the visible faces. For this reason it is not entirely sound to take a rectangular block 35x31x25 as being shown by the workings of the upper tunnel. The ore body cannot extend far upward because of the shallow depth; it may go beyond the end of the tunnel and it may extend beyond the ends of the crosscuts. It seems certain, however, to go below the tunnel level; by August 5th the winze was sunk five or six feet further than the above given dimensions and six flasks of quicksilver were secured in the 11 days July 25th to August 5th, from the ore from this source; it therefore seems

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St
Santa Cruz, Calif.

certain that 2,000 tons of rich ore can be mined.

The title to these mining claims is a peculiar one. The ownership of the surface does not carry with it the rights to the minerals. These were reserved by the Federal Government. The State Mineralogist's office has undertaken to furnish a precis of the law in this case. The owner of the surface is Mr. William Randolph Hearst. The mine is on the north end of his grandiose San Simeon estate.

The owner of the mining claims is Mr. Walter Harris who has optioned the claims to Messrs. E.D. Rodgers, Herbert Beck and Carl Wing. They have the option of buying the property any time in the next two years for $ 5,000. They have been prospecting on this property for about 5 years with indifferent results until recently. They have agreed to give a 90 day option to Herbert Hoover to purchase the property for $50,000, they to pay to Harris his $5,000. They also have agreed to give Theodore Hoover a commission of $5,000. Theodore proposes to apply this $5,000 in reduction of the purchase price. This option is promised to be in the mail Tuesday, August 11, 1942.

Timber for mining use is very scanty and will have to come from outside.

The road to the mine, 2 miles from Highway No. 1, presents some difficulties.

Accompanying this report will be two rough maps of the workings. A sketch of the rich ore body.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

An option agreement.

A precis of the law.

Assay report on Samples by Abbott A. Hanks.

A copy of the Cape San Martin topographic sheet.

Final Conclusion

We have here a very rich ore body of small dimensions which certainly will continue a distance downward.

As the case stands at present it is a prospect well worth an examination. The purchase price could be taken out of the present ore in sight at small cost. It would be good business to push the prospecting forward before installing much equipment. If the equipment was increased to a capacity of two tons per day by installing two larger retorts the income on high grade ore should pay for mining and development. At the worst it would seem a sure return of capital with a good chance of opening a good new mine.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

Copy

4. Physical Description
(a & c)

POLAR STAR QUICKSILVER MINE

411 Felt Building
P.O. Box 2188
Salt Lake City

September 9, 1943

PROGRESS REPORT TO THE PARTNERSHIP

The 50 ton Gould rotary furnace should be completed and ready to run about September 20th. This furnace was installed under an agreement with the Idaho Almaden Mines Co. (owner) whereby Polar Star paid the cost of installation for which it was given credit on a $25,000 purchase price. Polar Star will pay Idaho Almaden $5 rent per ton of ore treated, which also applies on the purchase price. If the full purchase price is not paid Idaho Almaden by the time the ore is exhausted the plant remains the property of Idaho Almaden.

Arrangements have been made with Metals Reserve whereby Polar Star is assured $192 per flask fob New York during the balance of 1943 and also during 1944, but subject to 30 days cancellation. In the latter instance however certain relief can be had.

Under the Metals Reserve agreement we are allowed to sell elsewhere if we wish and arrangements have been made with Tuthill & Company in New York to sell for us on a 2½% commission.

Some difficulty has been experienced in securing permission from the Petroleum Administrator for War to purchase fuel oil, but the War Production Board has advised them we are an essential industry and have promise of becoming an important producer. They also requested that we be allowed to purchase the oil. With this backing we will undoubtedly get it.

FINANCIAL.

The mine has been financed by borrowing at the Crocker First National Bank in San Francisco. We will be in approximately $60,000 when the plant starts to produce.

MINE & ORE RESERVES.

The attached plan and section of the mine shows the developed ore. Assuming that the ore extends 10 feet below the floor of the upper level and 10 feet above the back we can figure at least 3,000 tons left in the mine. This should yield at least 20 pounds per ton. This is allowing for the ore already mined.

At present we have hauled down 380 tons of ore derived from the development work. A general sample of this runs 23 pounds.

The development work to date has proven that the ore is associated with a fault striking about S 70 E and dipping 60° north.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St., Santa Cruz, Calif.

COPY

There are parallel faults, or fractures, but they are not as strong as the main fissure. Intersecting small fractures with various striked and dips have made a clear understanding of the structure difficult, but it is believed that the main fissure, as shown on the attached map, is the ore controlling structure.

The intersecting fissure, with heavy gouge, coming on the North may be an important structural feature and the ore may be associated with the intersection of these two main fissures.

At present we are stripping the ore above the level of the upper level. This is being done on contract at $2 per cubic yard of dirt or ore in place, for the first 1,000 cubic yards and $1 per cubic yard thereafter. This contract includes trucking the ore mined to the plant.

Already we have a good face of ore exposed in the pit and it is expected that we will mine at least 2,000 tons of ore in the next 30 to 40 days. This will be well ahead of the rainy season, which may make trucking down the hill impossible.

Tax considerations may indicate that we should run part of this ore in 1944. We may mine as much as 3,000 tons of ore before the first of the year.

FUTURE DEVELOPMENT.

If the rainy season makes hauling ore down the hill impossible we can put the crew on development work. It will be noted that the ore zone has not been explored across its full width, either on the 48 foot level of the winze or on the lower level. Work in these places may well develop additional ore. Work also along the strike (S 70 E) of the main ore zone is warranted.

GENERAL.

With the present ore in sight we should be able to complete the purchase of the property and just about return the invested capital (depending largely on the taxes that will have to be paid.)

The outlook for quicksilver is not very bright and while we have a guaranteed price, which should protect us while we are extracting the 3,000 tons mentioned, it is possible that the Metals Reserve will cancel this plan sometime in 1944.

On the other hand our ore is relatively high grade and we should be able to work it at a profit on a lower market.

L.K. Requa (signed)

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St., Santa Cruz, Calif.

Copy

4. Physical Description
(a & c)

POLAR STAR QUICKSILVER MINE
411 Felt Building
Salt Lake City

November 22, 1943

Mr. E.D. Rodgers
59 Laurent Street
Santa Cruz, California

Dear Mr. Rodgers:

I have some quite disappointing news for you concerning the mine. We have bottomed the ore in the open pit and it only went down 1½ feet below the floor. So far we have produced and shipped 160 flasks and will probably have 15 more out of the ore now going through the plant.

The exact tonnage figures have not been sent to me from the mine for this month so I cannot tell you what the average recovery will be, but I think it will be in the nature of about 10 pounds per ton. When we mined the ore it was spotty and the entire ore body did not contain much more than 1,000 tons.

We had expected at least 2,000 tons of 20 pound and so you can see our results have been far below expectations.

In addition to the disappointments at the mine we have run into a very stagnant quicksilver market. Purchasers are expecting a price drop and are not buying and this is the reason we have had such a hard time selling our metal. We will get rid of it before long as we have a guaranteed floor by the Metals Reserve of 192 fob New York. How long this will last I do not know as they can cancel it at any time on 30 days notice in 1944.

I know that quicksilver is not scarce any more and will not be for some time to come. Domestic consumption is about taken care of by domestic production and we have excessive imports. Our stock pile is very ample.

This about gives you the picture to date and I am sorry it is not brighter.

At present we are devoting our efforts at the mine to reopening the lower tunnel (from which we diamond drilled), but the entire program for the future is up to the partners. As soon as a decision has been reached we will advise you.

With kind regards, I am
Sincerely yours,

L.K. Requa (signed)

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St., Santa Cruz, Calif.

Physical Description
(a & c)

POLAR STAR QUICKSILVER MINE

411 Felt Building
P.O. Box 2188
Zone 13
Salt Lake City

PROGRESS REPORT OF POLAR STAR MINE
as of March 13, 1944

MINE DEVELOPMENT:

On Dedember 3, 1943, the plant was shut down due to the exhaustion of ore in the open pit. However, it was decided to explore for the downward extension of the ore below the pit. To accomplish this, a 100 foot inclined shaft was sunk.

At 42 feet in this shaft, ore was encountered, but this was not persistent as the shaft ran out of this ore at 50 feet. This ore averaged about 10 pounds per ton in quicksilver, and 90 tons of it were mined and are now on the ore dump. This ore was not developed buyond the limits of the shaft.

At 84 feet, ore was again encountered, but this came up only 2 feet from the footwall of the shaft, and is apparently dipping about the same as the shaft (27 east). A sample cut across the full width of the shaft assayed 10 pounds.

The 26 level has been extended to the point at which diamond drill hole No. 11 indicated ore. This ore was explored and proved to be the downward extension of the ore in the pit. Two samples were cut on the 26 level, which ran 15 pounds per ton and 111 pounds per ton. The ore apparently continues downward from the 26 level about 30 to the east.

A drift was run north from the bottom of the inclined shaft and has now progressed 20 feet without finding ore. We will continue this drift for another two or three rounds.

ORE RESERVE:

With the present showing of ore, it is estimated that there are 500 tons of 20 pound ore in sight and as much again in probable ore. We now have 200 tons of ore on the dump in addition, which should run about 15 pounds.

FINANCIAL:

With the March 15 payroll paid, February bills, and all Rodgers' royalty to date, we have a balance in the bank of $13,661.06. Our monthly expenses are running at approximately $3500.00.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St., Santa Cruz, Calif.

Copy

4. Physical Description
(a & c)

FUTURE PROGRAM:

Mining and exploration will be continued with a five man crew. The following objectives will be explored:

1. The 26 level will be explored to the north and to the south and downward to the east on the dip of the ore.

2. Ore showings on the 41 level will be followed.

3. The main incline will be deepened 25 feet and the ore showing in the footwall followed.

MARKET:

The quicksilver market has reached some stability at approximately $125.00 f.o.b. Pacific Coast point, and buying interest is slowly coming into the market.

CONCLUSIONS:

Although the pattern of the ore shoot is irregular, we might have some reason to believe the ore will continue with depth and that it may form a fairly continuous ore shoot. The depth at which the ore will go is unknown and the deepest ore we have now is about 90 feet vertically from the surface.

The pattern of the ore shoot is shown on the attached map. The plan is a projection of the ore shoot to a horizontal plane. The structure consists of a major fault zone running about North 70° West and dipping Northeast, which has been intersected by a minor fault zone which strikes approximately North 50° East and dips to the Northwest. The width of the minor fault zone is unknown as yet, but the mineralized width of the major fault zone is 180 feet. Bedding planes of the old sediments dip about 30° NE. The intersection of the two systems of faulting seems to localize the ore shoot. The bedding contacts also exert some control.

It may or it may not be a coincidence that the ore was found on the hanging-wall side of the fault zone, but it is possible that the ore may occur throughout the entire width (180 feet) of the major fault zone. Our present exploration procedure of following the ore closely will determine its extent.

The outlook for the mine at the present time is considerably brighter than it was two months ago.

Respectfully submitted,
L.K. Requa (signed)

Salt Lake City, Utah
March 18, 1944

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St., Santa Cruz, Calif.

Copy

4 Physical Description
(a & c)

THE TWINING LABORATORIES

2527 Fresno Street, Fresno, California Phone 3-2118

September 29, 1949

Examination
239503

For - Mr. Frank Marks, Jr.
Box 668
Newman, California

Sample - Ore

Mercury, Hg - - - - - - - - - - - - - - - - 3.56% by weight

THE TWINING LABORATORIES

By Fred W. Twining
(signed)

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

Copy

4. Physical Description
(a & c)

Bulletin No. 27 San Francisco, January 1908

THE QUICKSILVER RESOURCES
of California
(Second Edition.)

Issued by
The California State Mining Bureau
Ferry Building, San Francisco

Under the direction of
Lewis E. Aubury, State Mineralogist

(seal) California State Mining Bureau
Sacramento.
W.W. Shannon, - - - - - - - - - - Superintendent of State Printing
1908

SAN CARPOJO DISTRICT. -- This district, in the extreme northwestern corner of the county, includes part of Monterey County. This country is very deeply eroded and the sidehills are very steep. The country between San Carpojo Creek and the ocean is prominently a highly silicified Franciscan sandstone. To the east of the creek and forming the backbone of the main ridge is a wide belt of serpentine croppings, which, it is claimed, can be traced from Pine Mountain to the northern watershed of Salmon Creek, where cinnabar has been found in these croppings. In the basin forming the headwaters of the west fork of San Carpojo Creek runs a minor, more local, parallel belt of serpentine, west of which are the croppings on which the Dutro mine is found, and on the ocean slope detached patches of serpentine can be found. There are through this country, besides the cinnabar outcrops, several outcrops of gold ore, on some of which prospecting is being done.

POLAR STAR MINE (also called Santa Clara, or Black Hawk). San Carpojo District. In Sec. 13, T. 25 S., R. 6 E. Owners, Public Administrator, G.E. Van Gordon, E.S. Rigdon, M.W. Minor, and R.A. Minor of Cambria; S.N. Hitchcock, C.D. Hitchcock, F.H. Little, and W. Little, of San Simeon; H.H. Carpenter, of San Luis Obispo; P.A.H. Arate of San Luis Obispo. (See Report State Mining Bureau of Cal., X, page 581; XII, page 366 -- Black Hawk.) This is an old mine; it has been worked sporadically since 1870 by different owners. There is a great amount of surface ore on the south sidehill of San Carpojo Creek, covering near the creek a distance of 250 feet, running 750 feet up the hillside and narrowing to about 40 feet at an altitude of 310 feet ~~xxxx~~ vertically above the creek; this surface zone is from 6 to 20 feet deep. Very rich ore has been found in this territory, but as yet the vein has not been exposed. Some exposures of what is probably the southern wall would indicate that the vein had an east and west trend. The country rock is almost exclusively highly silicified Franciscan sandstone. The property is equipped with a two retort furnace in good order.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

Copy

4. Physical Description
(a & c)

California State Mining Bureau
Ferry Building, San Francisco

Fletcher Hamilton
San Francisco

State Mineralogist
December, 1917

Report XV
of the
State Mineralogist

Mines and Mineral Resources
of portions of California
Chapters of State Mineralogist's Report
Biennial Period 1915-1916

California State Printing Office
Sacramento
1919

Polar Star Mine, comprises two claims, the Polar Star No. 1 and No. 2, located by A.L. Carpenter of San Luis Obispo. The property is in Sec. 13, T. 25 S., R. 6 E., in the canon of San Carpojoro Creek, 3 miles above its mouth and fifteen miles north of Port San Simeon. The property was worked in 1877 and later by Mexicans, and some good float ore was retorted. Between 1890 and 1900 it was worked by E.S. Riddon and others, who did some hydraulicking in an attempt to expose a vein. This has not yet been uncovered, although the surface dirt for several hundred feet up the steep hillside is said to carry cinnabar to the extent of 0.1%. The geology has been described in past reports. The writer found no ore in place, but in the creek bed in the center of the claims he found a boulder of over a ton in weight which shows prospects of cinnabar, and some pieces of the ore which were left by the last operators show good amounts of the sulphide. The rock in which the cinnabar makes its appearance is extremely hard being apparently a highly metamorphosed and silicified sandstone. The large boulder no doubt came from either hillside nearby.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

From December 2, 1941 to August 5, 1942, Mr. E.D. Rodgers and Carl Wing produced 51 flasks of quicksilver from approximately 75 tons of ore.

From September 9, 1943 to December 3, 1943, Polar Star Quicksilver Mine, 411 Felt Building, Salt Lake City, P.O. Box 2188 Zone 13, (Hoover People) L.K. Requa, managing partner, produced 175 flasks of quicksilver from approximately 1000 tons of ore.

From December 3, 1943 to May 29, 1944, 55 flasks of quicksilver from approximately 200 tons of ore.

From March 1, 1945 to March 1, 1946, J. Stokes and Mr. Mason of San Jose, California, are said to have produced 7 flasks of quicksilver from an unknown tonnage of ore.

Current production is now at a standstill, due to the dangerous condition of the main tunnel, and a cave in 42 feet from the portal. In March of this year, the applicant mined approximately 1500 lbs. of ore for assay purposes.

Mr. L.K. Requa stated in a progress report to his partners dated March 13, 1944 (charts and letter enclosed) "500 tons of 20 pound ore in sight and as much again in probable ore". Inspection in the main incline shaft at 42 feet shows that this ore has not been removed or further explored as to its exact size. 10 pounds of ore from this shoot was retorted by myself and proved to be 70 pound ore. 30 pounds of the same ore was sent to Twining Laboratories and assayed 71.2 pounds per ton.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

4. Physical Description
(d)

The mine is reached from State Highway 1 by private road, dirt and gravel, a distance of 2.4 miles. The San Carpojo Creek must be forded in 2 places. Travel by jeep presents no problem. During nine months of the year, by cleaning the road with a dozer, travel can be made by passenger car or heavy truck.

The closest rail shipping and supply is San Luis Obispo, 52 miles south.

Residence points and distance from mine are as follows:

San Simeon, 13.4 miles south
Cambria, 25.4 miles south
San Luis Obispo, 52 miles south.

4. Physical Description
(e)

If needed, manpower, materials, supplies, equipment and water would be no problem. Electric power is not available.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

The mine is located on the center of a ridge 750 feet from the canyon floor. This ridge rises to the right hand rim East 60° So. Because of the steepness of this ridge, the overburden has slid down from above and filled the open pit, covering the portal to incline shaft #2 as shown on enclosed mine map #1 (L.K. Requa) and will soon close off and cover the portal to our main incline shaft #1, the only shaft now accessible for inspection of the ore shoot which I wish to explore.

To eliminate this hazard and make exploration possible and more permanent, I propose to do the following:

1. Strip all overburden and loose rock now standing along the upper limits of the pit by bulldozing a 30 foot belt along the top of pit limit and pushing this material down the right and left side of the ridge.

2. 100 feet further up the ridge from this belt, I believe a trench should be cut in the overburden at least 20 feet wide and as deep as the overburden lies at this point. This trench should serve to trap further erosion, and keep water run-off from washing dirt, rock and brush on and in the mine workings.

3. The open pit should be cleaned out to floor level and at the same time and place, overburden over shaft #1, which threatens to close the portal, could be cleared. It will then be possible to explore downward and try to establish contact with the ore shoot now showing in #1 incline shaft at 42 feet - map #1 (marked cave in). When contact is made in the pit floor, it should then be easy to measure the shoot as to tonnage and quality at its top limit.

4. Due to the fact that ore showing in the shaft at 42 feet does not appear on the right side wall, but rich ore does show on the left side wall, it would appear to me that this ore shoot is much wider than L.K. Requa believed when the shaft was sunk and 90 tons of 10 lb ore mined at this point. Through a 3 inch crevice in the rock in the left sidewall, I can see good ore for at least 6 feet and have fished out samples with the aid of a long rod. For this reason, I believe further exploration is warranted by cutting the left side of the ridge at a depth calculated to contact the ore shoot at its known depth, which is now estimated at 30 feet below the floor of the pit. This could be done by bulldozing.

5. The portal to the 85 foot level tunnel is now caved in, due to mine dump covering same. This should be opened and the sloping dump should be step cut and benched to prevent future slides. This would permit inspection by DMEA field team. Said tunnel is supposed to show ore at the deepest known point, 85 feet vertically down from pit level.

6. The cave in, in tunnel #1 should be cleaned out and re-timbered at

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

5. Exploration project
(b)

this point. This would allow DMEA field team to inspect ore showing at 84 feet, the 26 foot level and the 41 foot level.
This work I had started to do with a mine dump car and using my 1951 jeep, cable and snatch block to pull car up and down incline shaft. After careful examination of timbering and the amount of overburden resting on roof of timbering, I decided it would be too dangerous to work until overburden is taken off of tunnel for at least 25 feet.

5. Exploration project
(d)

The applicant,who proposes to do all the work, would expect to be guided in all phases of this not too large or complicated operation by DMEA field men. I have operated dozers and heavy equipment, am an automotive mechanic and machinist by trade and most of my business career was in that field. During World War II,I served in the U.S.Navy as a Chief Machinist Mate in the 55th Construction Battalion.For over two and one-half years, I was U.S. Naval Representative in New Castle, N.S.W., Australia on an assignment calling for greater experience and effort than what I propose to do at Polar Star Mine; I intend to devote full time to this project.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

6. Estimate of costs

a.	- -	none
b.	Dozer operator and labor - - - - - - - -	$ 1452.00
c.	Diesel, fuel, gasoline, oil - - - - - -	290.00
d.	Caterpillar D-6 dozer, rental 30 days -	890.00
	Moving cat to & from mine, $12.50 per hr. average 20 m.p.h., San Francisco via Morro Bay to mine & return; two trips necessary - - - - - - - - - - - - - - -	800.00
	Jeep - - - - - - - - - - - - - - - - - - -	?
	Truck - - - - - - - - - - - - - - - - - - - 2½ ton flatbed	?
e.	- -	none
f.	- -	none
g.	estimated repairs - - - - - - - - - - - -	250.00
h.	rental rooter one mo. - - - - - - - - - -	142.00
	timber for incline shaft - - - - - - - -	150.00
	TOTAL COST	$ 3,974.00

7.

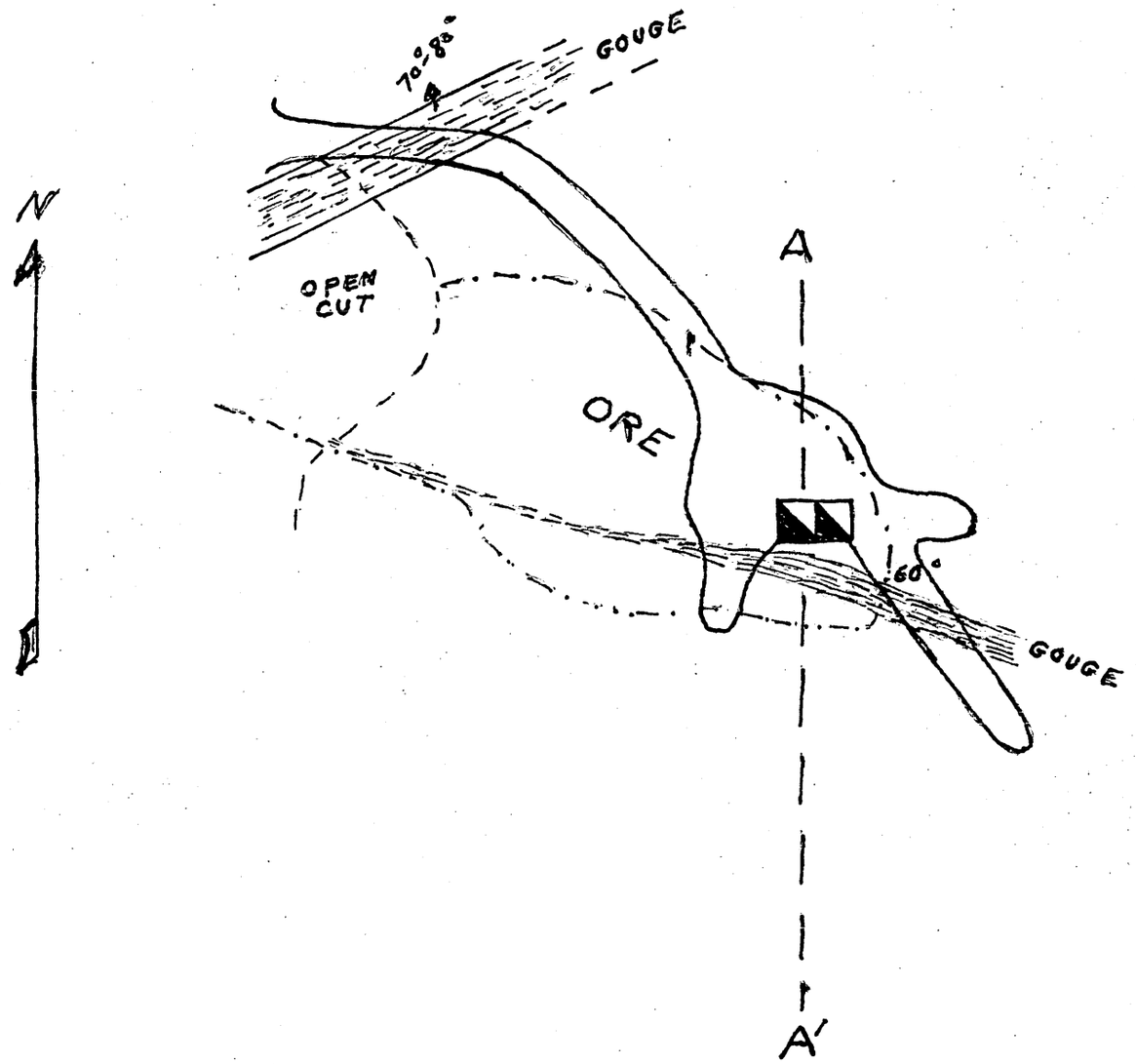
The allowance allowed for labor, dozer operator, and my equipment should more than cover my 25% share of the project.

Kenneth Emigh
Polar Star Quicksilver Mine
550 Meder St.
Santa Cruz, Calif.

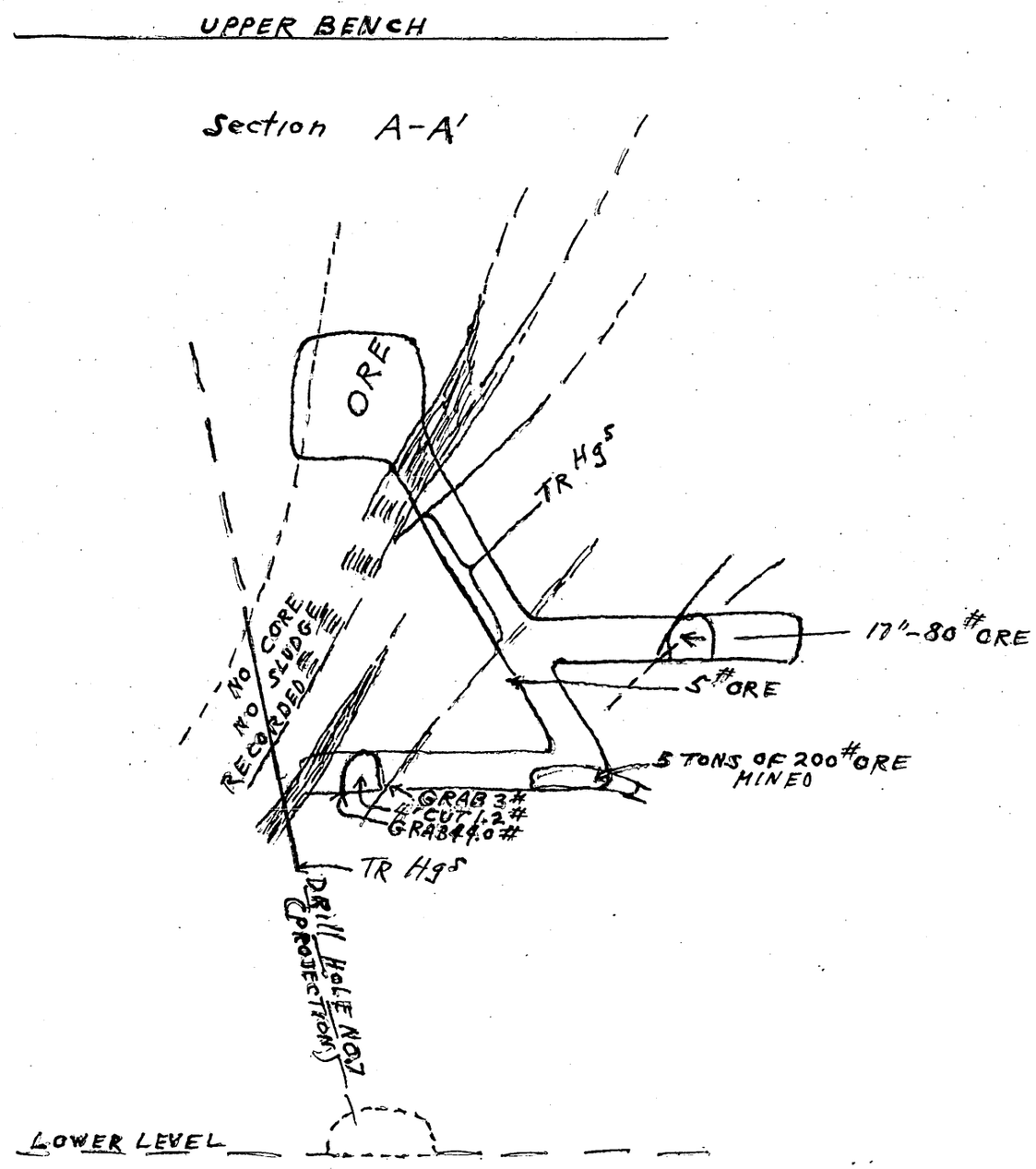
Map no 7

4 Physical description Polar Star Quicksilver Mine

(a) (c)



SCALE 1" = 20'

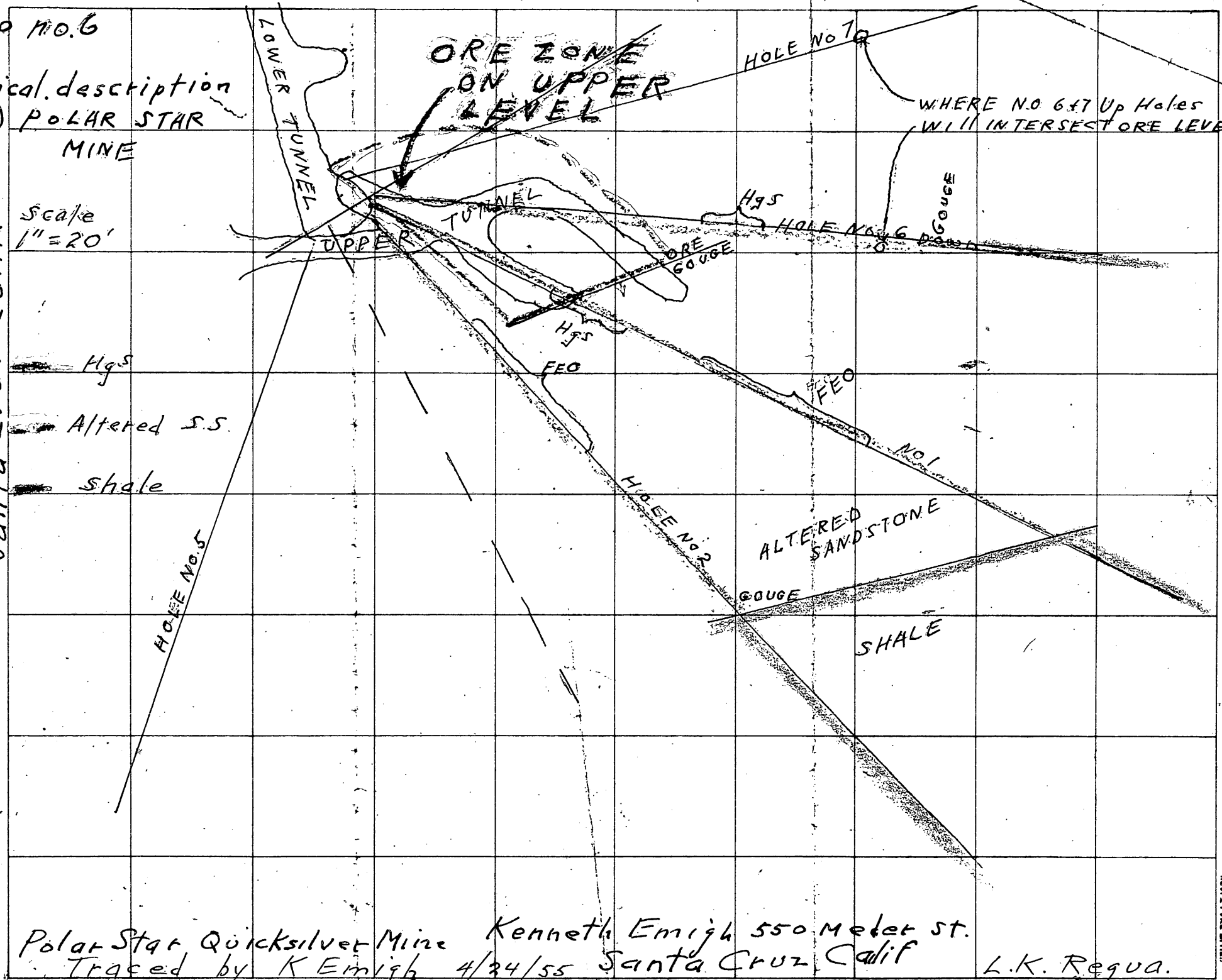


Kenneth Emigh 550 Meder St
Santa Cruz Calif.

Traced by K. Emigh Mar. 23. 1954 Original?

Map no.6
4.
Physical description
(a) (c) POLAR STAR
MINE

Scale
1" = 20'



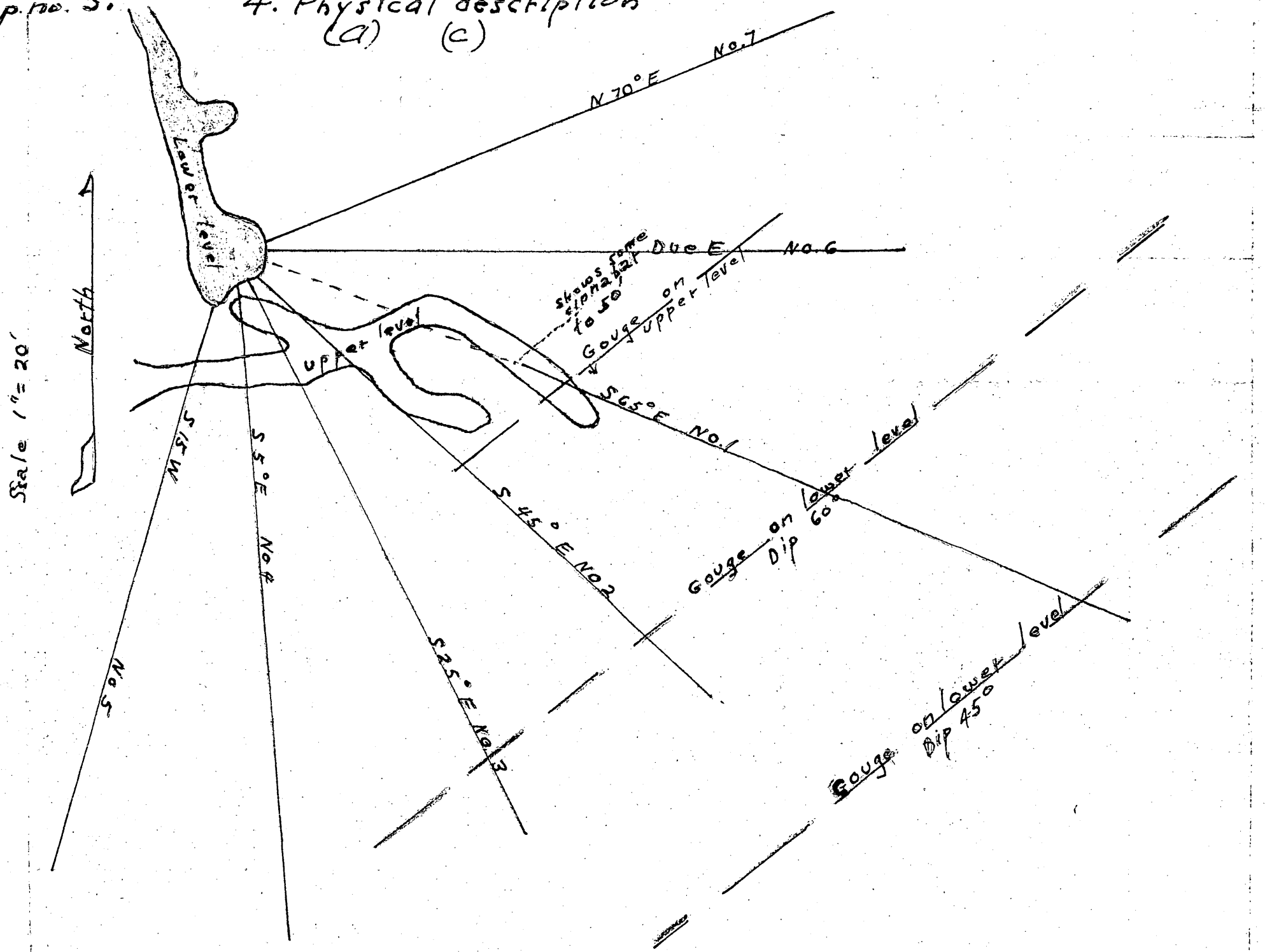
Polar Star
Quicksilver MINE

Kenneth Emigh
550 Meder st
Santa Cruz Calif.

Polar Star Quicksilver Mine Kenneth Emigh 550 Meder st.
Traced by K Emigh 4/24/55 Santa Cruz Calif L.K. Regua.

Map no. 5.

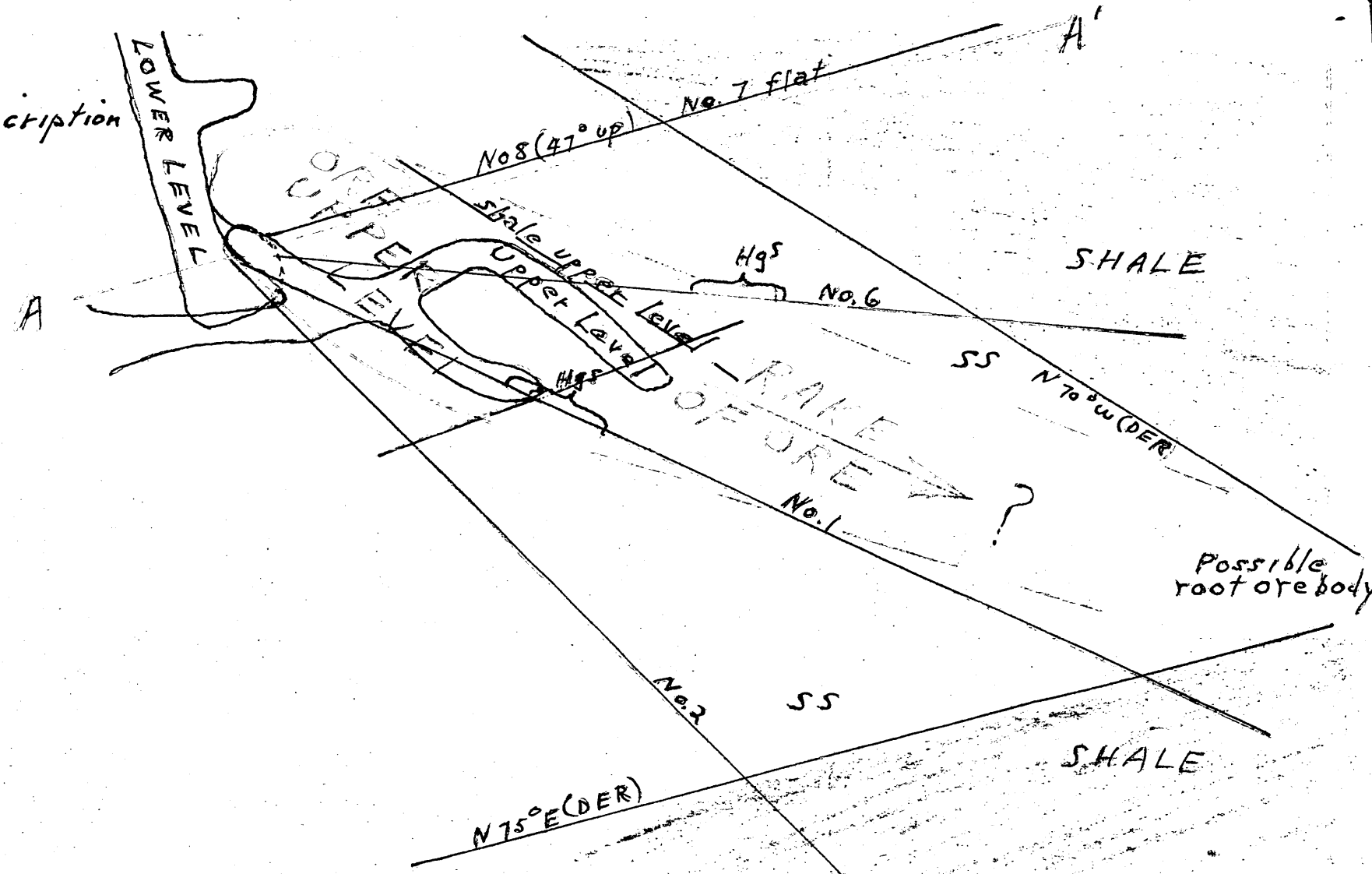
4. Physical description
(a) (c)



Polar Star Quicksilver Mine Kenneth Emigh 550 Meder St Santa Cruz Calif
Traced by K.R. Emigh 2/7/54 Traced From Map made by L Requa 11/16/42

Map No 4

4. Physical description
(a) (c)



PLAN LOWER LEVEL
Upper Level Superimposed

Scale 1" = 20'

Polar Star
Quicksilver MINE

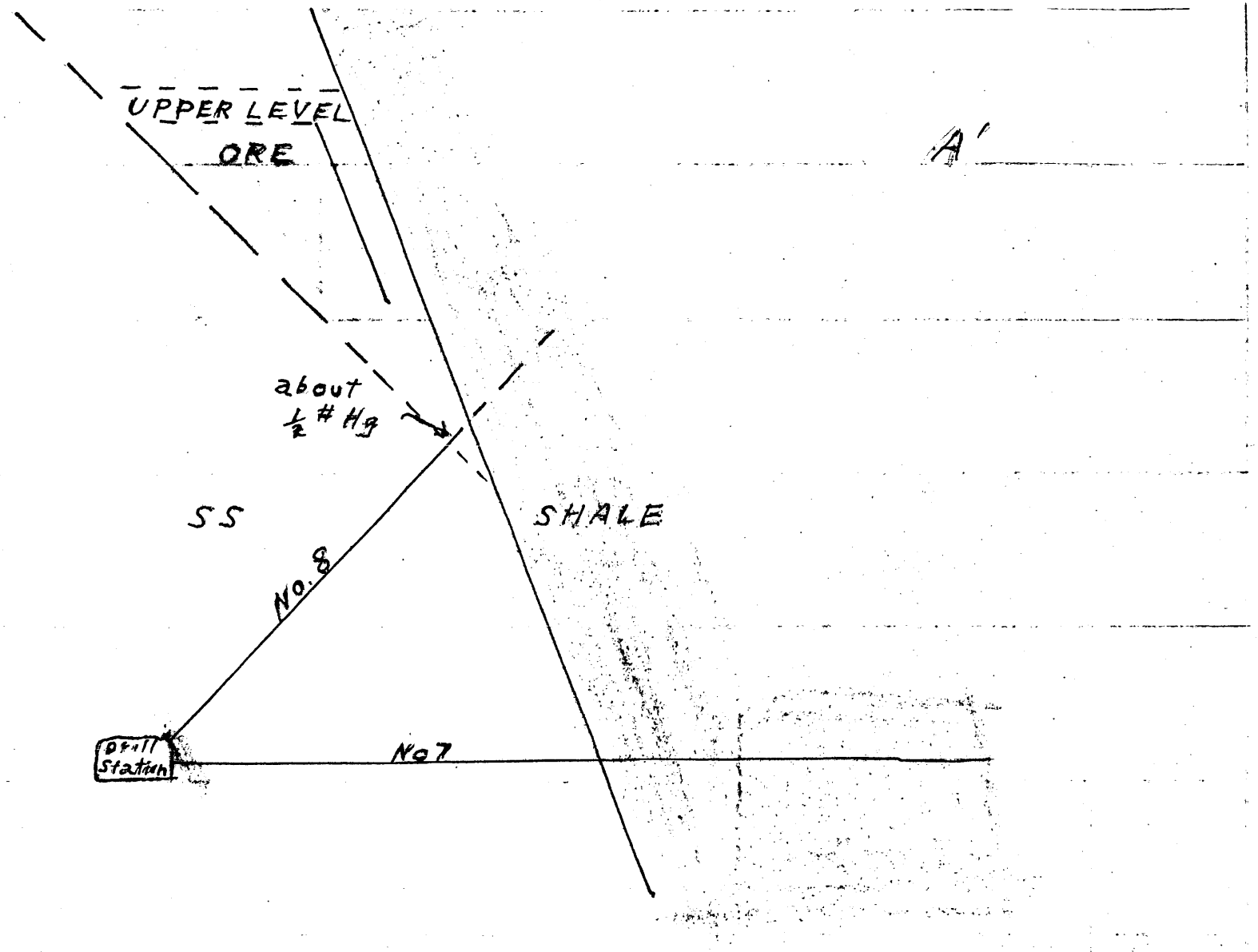
Kenneth Emrich
550 Meder St.
Santa Cruz Calif.

Tracing by K.R.E. 2/7/54

2/3/43
L.K.R.

Map No 3

4.
Physical description
(a) (c)



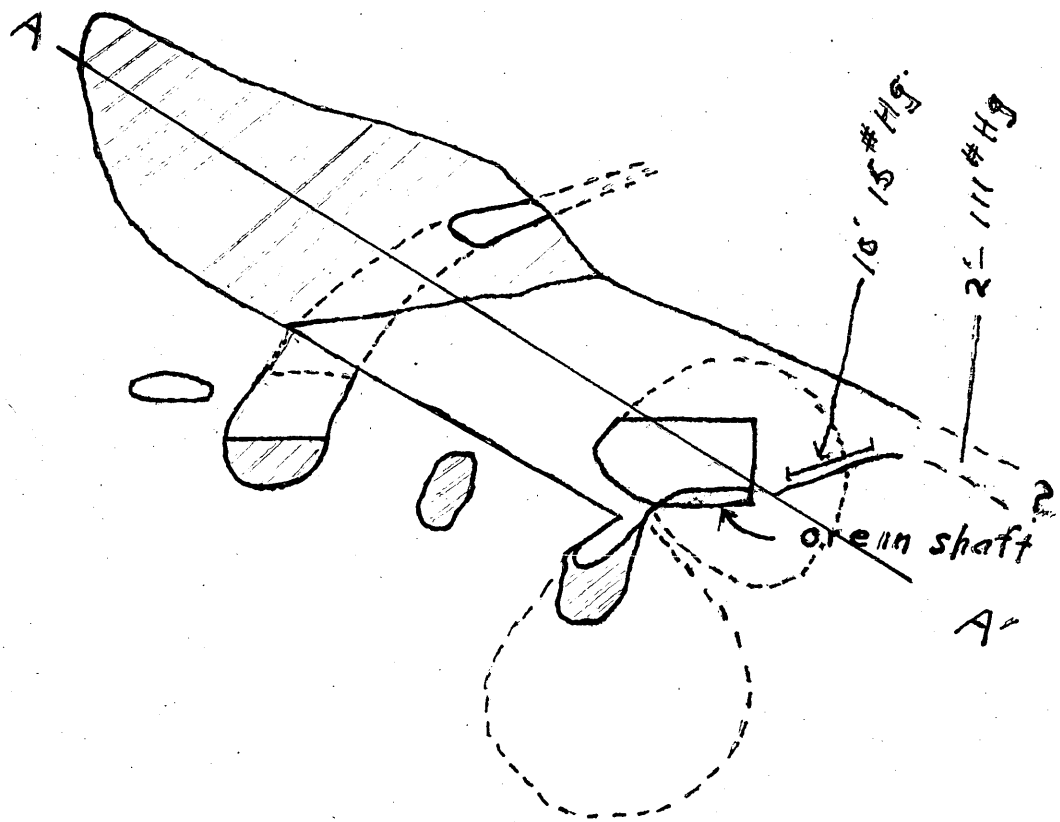
Section A-A'
Scale 1" = 20'

Polar Star Quicksilver Mine Kenneth Emigh 550 Bledet St 2/3/43
Tracing by K.R.E. 2/7/54 Santa Cruz Calif. LKR

Map No 2

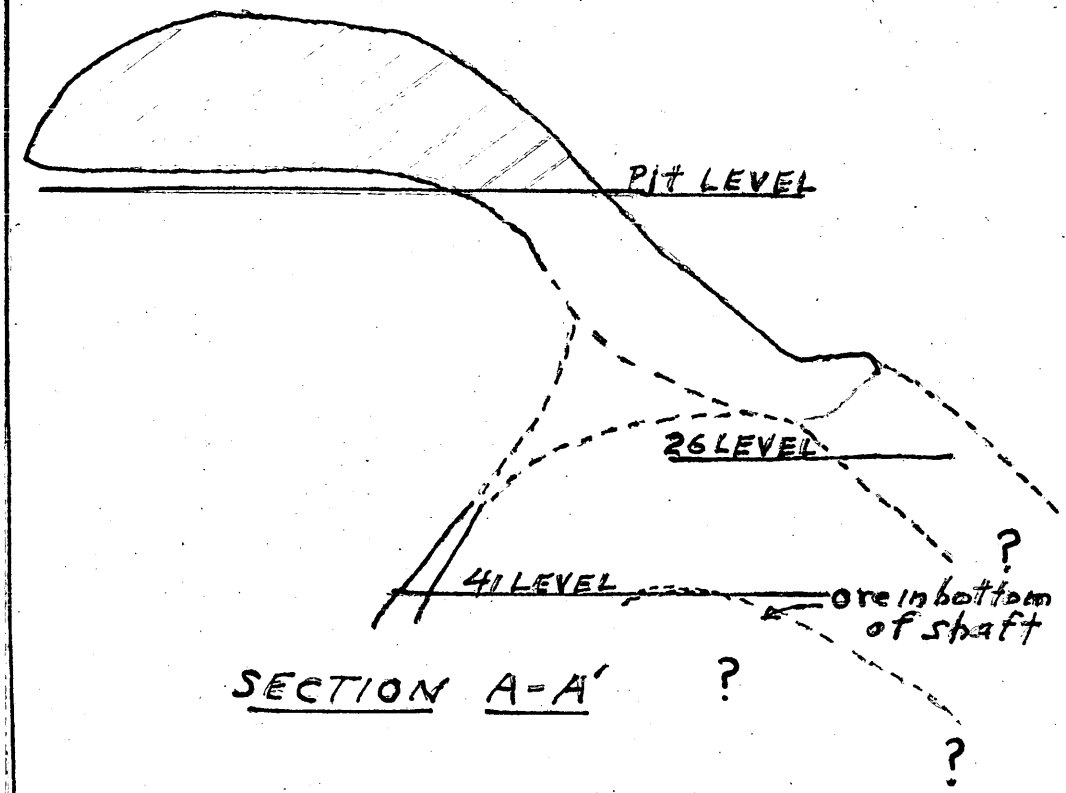
4 Physical description

(a) (c)



PLAN

ORE SHOOT PROJECTED TO HORIZONTAL PLANE



SECTION A-A'

mined

Proven Ore

Probable Ore

Polar Star Quicksilver MINE

Kenneth Emigh 550 Meder St
Santa Cruz Calif

Scale 1" = 20'

Tracing by K Emigh

LKR

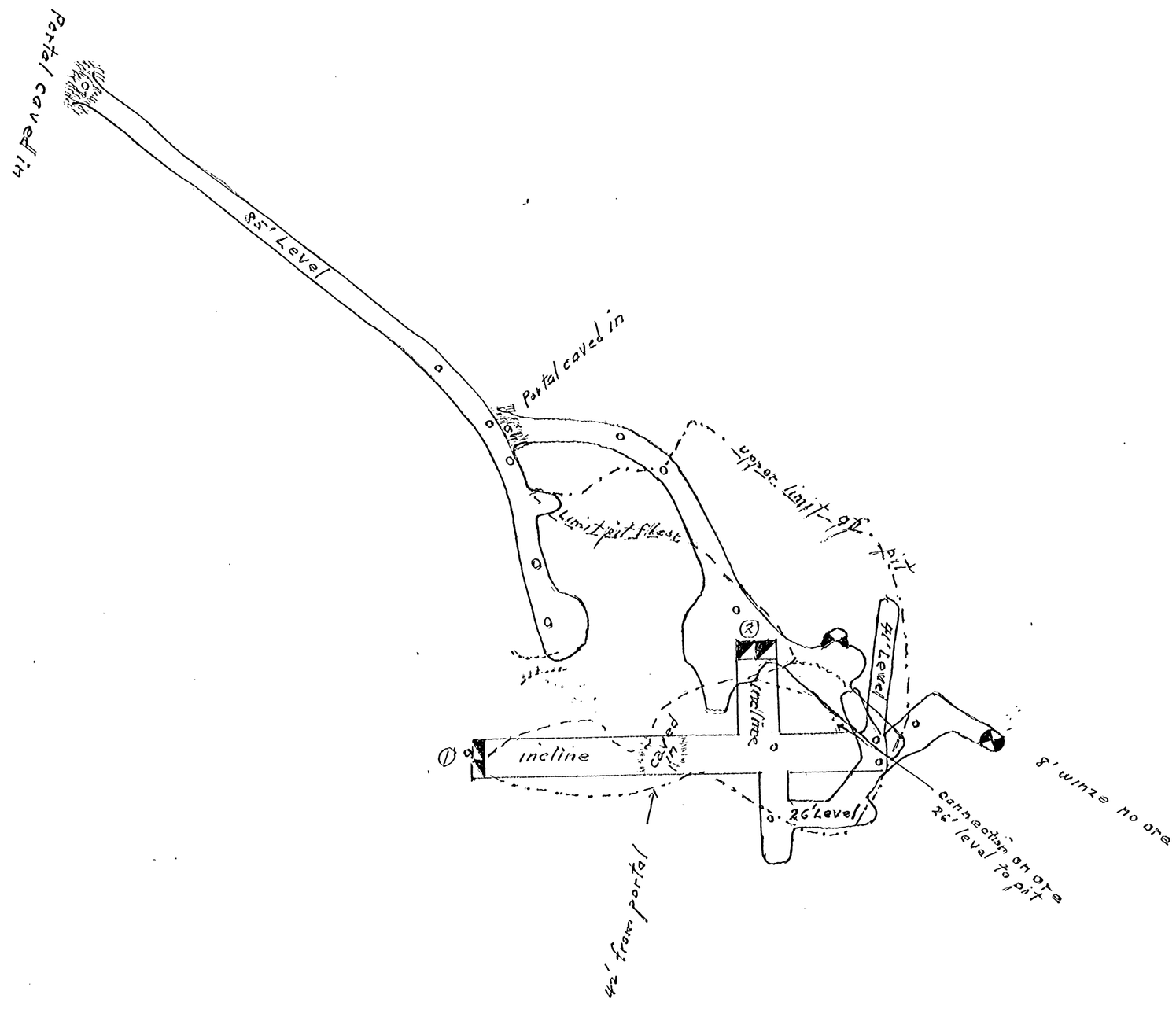
Donald P. McHugh, Esquire
821 - 15th Street, N.W.
Washington 5, D.C.

Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D.C.

627176

INTERIOR DEPT.
APR 29 1955
SECRETARY'S
MAIL CENTER

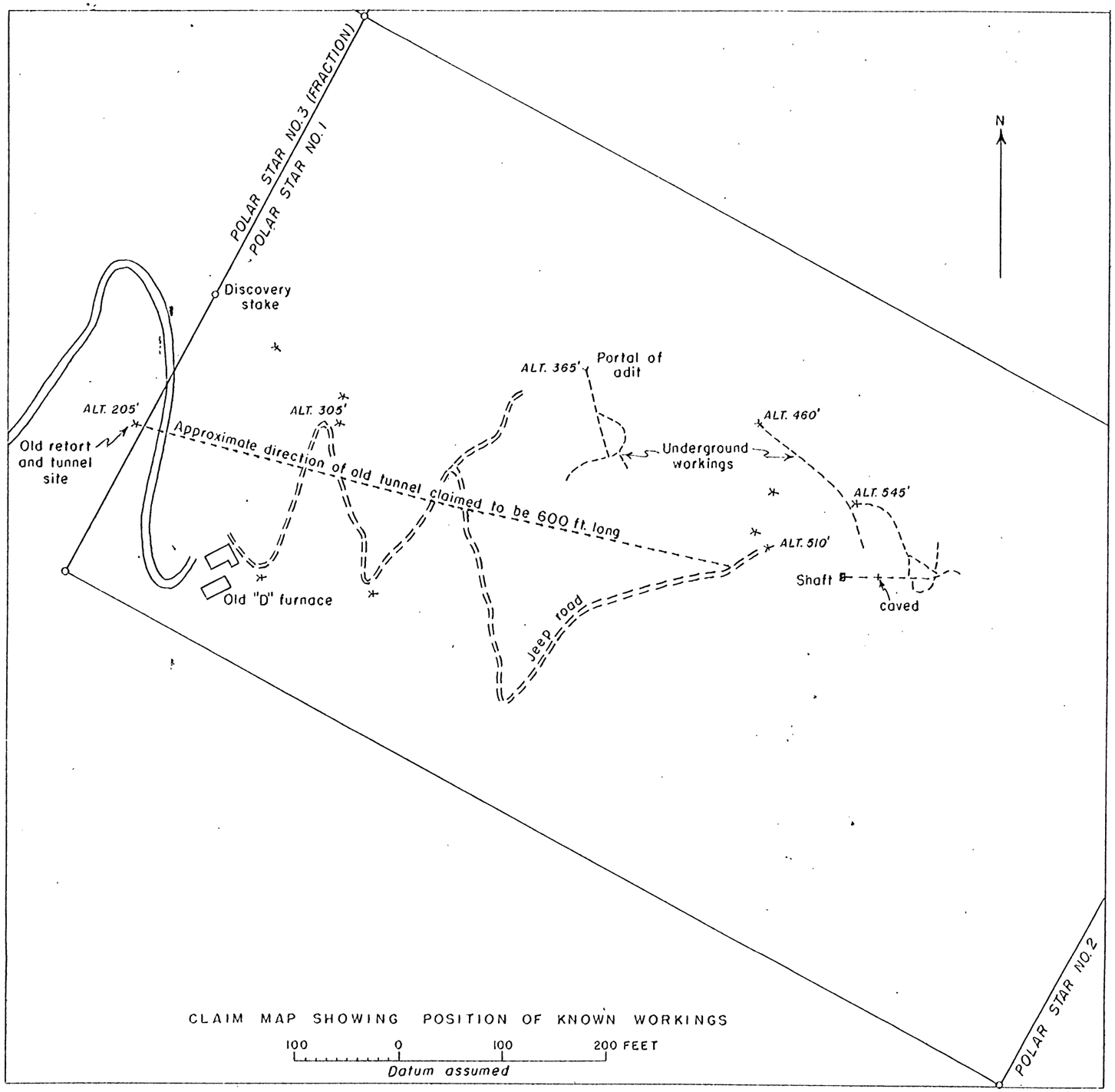
4. Physical description Map no. 1. Polar Star Quicksilver Mine
(a) (c)

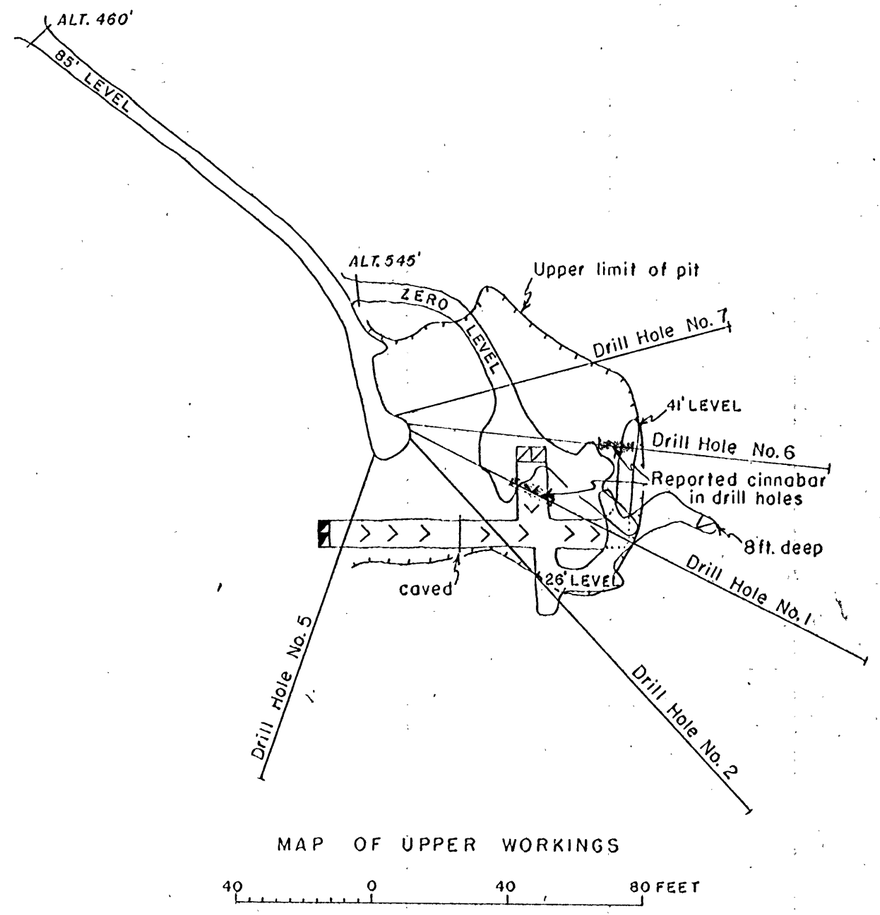


Scale 1" = 20'

Kenneth Emigh 550 Meder St.
Santa Cruz Calif

Traced by K Emigh 4/26/55





EXPLANATION

Portal of caved adit

Shaft at surface

Inclined workings
(Chevrons point down)

Head of raise or winze

Base map by L. K. Requa and others
Compiled 1955

POLAR STAR QUICKSILVER MINE, SAN LOUIS OBISPO COUNTY, CALIFORNIA

Figure 2