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Original to Docket

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

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

September 25, 1953

WSM

Memorandum

To: C. O. Mittendorf, Administrator, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2007 (Tungsten)
Panamint Tungsten Mines
Bluestone, et al. claims
Inyo County, California

In many cases when a DMEA application is not approved, the applicant gets sore and leaves no stone unturned to broadcast that our engineers and geologists do not know their business and should not be on the Government payroll.

It is gratifying, therefore, to be able to report that on September 23 Mr. Walter W. Johnson, Manager, Panamint Tungsten Mines, called me on the phone to tell me that he had been planning for some time to phone me that insofar as his property was concerned, our engineers and geologists were right and their property was not worth Government help.

Mr. Johnson said that the ore was present only in "bunches" and did not go down more than 10 feet. His company spent $40,000.00 on the property and were able to hand-sort a shipment of only 45 tons. This shipment ran 1.8 per cent WO3 and was treated in the Catchell Mill with not too good results.

Copies of this memorandum are going to R. H. Bailey and to A. G. Johnson so they may let Geologists Team Tinkham and Don Ross, and Engineers Russell R. Trengove and Frank J. Kiesit know how right they were in not recommending a DMEA loan on this property.

H. C. MILLER
H. C. Miller
Executive Officer
DMEA Field Team, Region III

JB

Copy to: R. H. Bailey, DMEA
A. G. Johnson, Reno

400

Administrator, DMEA March 26, 1943

Iron and Ferro-Alloys Division, DMEA

Denial of application for exploration assistance in the amount of $64,275.00. Subject application was amended from the original $60,000.00 requested to $70,570.00 and then to the present $64,275.00.
Docket No. DMEA 2 07 - Tungsten
Panamint Tungsten Mines
Inyo County, California

The denial of the subject application by this Division is based on the following information:

1. An examination by the Field Team indicated the property has little merit.

2. The applicant proposed a series of exploration projects on small scattered occurrences of disseminated scheelite on the property of the Panamint Tungsten mines, near Skidoo, Inyo County, California. Some of the scheelite is fairly coarse grained, but much of the scheelite is fine-grained and locked in quartz and calcite. Three of the areas contain zones of quartz veins in limestone, and the fourth is traversed by a massive quartz vein along a fault.

3. Eighteen samples were taken by the examining engineers. Eliminating one sample of a 6-inch horizontal stringer of high-grade (2.73 percent WO_3), the remaining seventeen samples averaged 0.21 percent WO_3. Inferred reserves in the four areas are as follows: 745 tons containing 0.58 percent WO_3 and 11,200 tons containing not more than 0.20 percent WO_3.

4. It was the mining engineers' opinion, based on an ultra-violet lamp reconnaissance of the area, that the exploratory workings made to date are on the best of the showings. Because of the low tenor of the ore and the small tonnage indicated, there is little possibility of increasing the reserve appreciably by further exploration.

5. Ore dressing tests by the Hydro-metallurgical and Ore-Dressing Branch of the Bureau of Mines indicate that gravity concentration of the ore from the subject property would not be satisfactory.

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

400

1012 Flood Bldg.
870 Market St.
San Francisco 2, Calif.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 27 1953

March 26, 1953.

Memorandum

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

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2807 (Tungsten)
Panamint Tungsten Mines, Bluestone, et al. claims
Inyo County, California

The subject applicants have learned from some source that our report on the Panamint Tungsten property was not favorable and they are anticipating that their request for a loan will be denied. Mr. Walter W. Johnson, an official of the company, requested over the telephone yesterday that I write you, asking that you defer your final decision until some supplemental information can be supplied.

The company is going ahead with the sinking of an inclined shaft, which, so I was told, has reached a depth of 18 feet, showing a good width of ore which the superintendent telephoned lamps very well. A 20-lb. representative sample is coming to San Francisco for analysis by Abbot A. Hanks Laboratories.

Large samples taken at approximate location of sampling by Bureau-Survey team also are being assayed, as applicant and his consulting engineer are not satisfied with the results our examiners obtained. I am not siding in with the applicant, but if he can prove that we erred, I am willing to back up and ask another crew to go down and make another examination.

The applicant, of course, brings up the importance of time, stating that it will not be too long before operations in Death Valley will have to be recessed for the summer.

The supplemental information will probably be furnished me in about a week. I will send it to you on receipt, with any recommendations I may have.

H. C. MILLER

H. C. Miller, Executive Officer
DMEA Field Team, Region III

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

6. The Field Team recommended denial of the application.

7. The Commodity Division of the U. S. Geological Survey recommends denial.

8. The Commodity Division of the U. S. Bureau of Mines concurs in the denial.

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

cc: Docket
~~Code~~ 400
Admn. Read. File

FARutledge/hhb
3/26/53

400

MAR 30 1953

Mr. Walter [illegible] Johnson
[illegible]mmint Tungsten Mines
[illegible]10 Balfour Building
[illegible]1 California Street
San Francisco 4, California

Re: Docket [illegible] - Tungsten
[illegible]mmint Tungsten Mines
Inyo County, California

Dear Mr. Johnson:

Your application for aid for an exploration project and other data available to us [illegible] property have been reviewed.

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

Careful study of all our information, although showing a small amount of tungsten mineralization on your property, indicates to us that the probability of [illegible] minerals are increased by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

We thank you for your interest in the Defense Mine Aid Program and for bringing your property to our attention.

Sincerely yours,

C. O. Mittendorf

Administrator

cc: Docket
Field Team, Region 3
Code 400
Admin. Head. File
R. W. Grehan, DMA
E. [illegible] Lemmon, DMA

RHutledge/hmb
3/26/53

COPY

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

March 23, 1953

Memorandum

To: Mr. W. S. Martin, DMEA

From: R. W. Geehan

Subject: DMEA-2807 Tungsten - Panamint Tungsten Mines
Inyo County, California

The Field Team reports dated March 6 and March 11 recommend denial. I concur in this recommendation, as available information indicates that the amount of tungsten ore that might be expected to be located would not be significant in relation to the work proposed.

Robert W. Geehan

Copy retained

AIR MAIL

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
1012 Flood Building, 870 Market Street
San Francisco 2, California

APR 8 1953

Re: Docket No. DMEA 2807 (Tungsten)
Panamint Tungsten Mines
Bluestone, et al. claims
Inyo County, California

Dear Mr. Miller:

This acknowledges receipt of your letter of March 26, 1953, advising that the subject applicants have learned from some source that your report on the Panamint tungsten property was not favorable, that they are anticipating their request for a loan would be denied, and that they have asked you to request us to defer final decision on the application until supplemental information can be supplied.

Our denial had already been mailed under date of March 27 when your above-mentioned letter reached us. As a matter of record, after the recommendation for denial had been prepared, a Mr. Jackson, Washington representative of the applicants, telephoned to ask our Iron and Ferro-Alloys Division about the status of the application. Mr. Jackson was informed that denial had been recommended by that Division. He was not informed that your report was unfavorable.

We would be quite willing to have you send another field team to make a re-examination of the subject claims if the applicants bring you new evidence which in your judgment justifies sending another field team to the property. Our denials are regularly made on the basis of existing information and we are always willing to consider a new application whenever conditions warrant.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Approved:

J. H. Hodges

Member, Bureau of Mines

A. R. Kinkel, Jr.

Member, Geological Survey

CC: DOCKET
ADMN. READ. FILE
CODE 400
OPER. COMMITTEE
FIELD TEAM, REG. 3
D. M. LEMMON, USGS
R. W. GERRAN, USBM

WSMartin/ls 3/31/53

Office of
Executive Officer
DMEA Field Team
Region III

DEPA[illegible]
Defe[illegible]ministration
[illegible]
[illegible] 16 1953

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

March 11, 1953

Memorandum

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

WSM

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2807 (Tungsten)
Panamint Tungsten Mines, Bluestone, et al. claims
Inyo County, California

Reference is made to the letter, dated January 2, from Frank E. Johnson, requesting a field examination of the Panamint Tungsten Mines.

Attached are four copies of a report made on the property entitled "DMEA-2807, Panamint Tungsten Deposits, Inyo County, California," by Dean Rinehart and Don Ross, Geologists, U. S. Geological Survey, and Russell R. Trengove and Frank J. Wheelit, Mining Engineers, U. S. Bureau of Mines, dated March 4, 1953.

According to the report by the geologists and engineers, the property does not have sufficient merit to warrant exploration work with Federal funds. Eighteen samples were taken by Bureau of Mines engineers on all of the proposed project and with the elimination of one high-grade sample, the weighted average of the remaining samples was [illegible] percent WO_3. A composite of all eighteen samples contained only 0.25 percent WO_3. Ore dressing tests by the Ore-metallurgical and Ore-Dressing Branch indicate that gravity concentration of this ore would not be satisfactory.

The amended application which was submitted to this office by the applicant was given consideration when the cited report was prepared. The amended application had no effect in altering the opinions of the engineers and geologists on the exploration work on this property.

Mr. Bailey and I agree with the examining engineers and geologists that exploration with the aid of Government funds is not justified.

Reviewed by
DMEA OPERATING COMMITTEE
3-20-53
(Date)

In answer to paragraph ten of Mr. Frank E. Johnson's January 2 letter, Mr. Francis Frederick, Engineer for the Panamint Tungsten Mines, was disappointed with the results of our analyses of the samples taken during the field examination. Most of our results were lower than samples he took and in some instances lower by a large percentage. Mr. Frederick questioned the engineers' method of sampling and believes the rock is such that chip samples are not representative and that large machine cut samples are needed. He also questions our assays but Mr. J. E. Endre of our Hydrometallurgical & Ore Dressing Branch at Reno, where the samples were run, is of the opinion that his results are correct. Mr. Endre's office has yet to lose an umpire on Tungsten and only a short time ago when the Geological Survey had him recheck five samples pertaining to BMA-2750, the results checked previous work exactly.

Mr. Endre writes that the reason commercial assayers get higher results is because they do not use platinum crucible when digesting a sample with hydrofluoric acid and, therefore, some silica is weighed as WO_3. In every case that has been called to Mr. Endre's attention, the commercial assayers' results have been on the high side verifying that they are weighing up silica instead of tungsten. His office has never had a complaint where his result was on the high side.

H. C. MILLER

H. C. Miller
Executive Officer
BMA Field Team, Region III

Attachment

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-2807, Panamint Tungsten Deposits

Inyo County, Calif.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
MAR 16 1953

Dean Rinehart and Don Ross, Geologists
U. S. Geological Survey

Russell R. Trengove and Frank J. Wiebelt, Mining Engineers
U. S. Bureau of Mines

March 6, 1953

Reviewed by
DMEA OPERATING COMMITTEE
3-20-53
(date)

DMEA-2807, Panamint Tungsten Deposits

Inyo County, Calif.

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Docket No: DMEA-2807

Name and address of applicant: Walter W. Johnson, Manager
Panamint Tungsten Mines
910 Balfour Bldg.,
351 California Street
San Francisco 4, Calif.

Name and location of property: Panamint Tungsten Deposits
Inyo County, Calif.

SUMMARY, JOINT CONCLUSIONS, AND RECOMMENDATIONS

The U. S. Geological Survey and the U. S. Bureau of Mines examined the Panamint Tungsten deposits, situated 22.5 miles southwest of Stove Pipe Wells, Death Valley, California, in January 1953.

The purpose of the examination was to determine if the geological conditions and the grade of the mineralization were favorable to justify approval of an application for a Government loan. The total estimated cost, in the application dated December 22, 1952, is $78,870.91. However, on February 24, 1953, the applicant amended the original application to include exploration in the area of Project C only (see Plate I of the report), where several hundred feet of trenching and underground work is proposed. The inferred reserves in this area, however, are less than 400 tons of ore containing about 0.5 percent WO_3.

Eighteen samples were taken by Bureau of Mines engineers on all of the proposed projects. Eliminating one sample of a 6-inch horizontal stringer of high grade (2.73 percent WO_3), the remaining samples averaged 0.21 percent WO_3. A composite of all eighteen samples contained only 0.25 percent WO_3.

The ore mineral is scheelite; some fairly coarse-grained, but much of the scheelite is fine-grained and locked in quartz and calcite. A small amount of altered fine-grained pyrite was noted.

Ore-dressing tests made on the composite of the eighteen samples prove that gravity concentration is not satisfactory. Flotation, however, recovers 71.2 percent of the scheelite in a concentrate assaying 11.3 percent WO_3 representing 1.53 percent of the original weight of ore. Possibly, higher recoveries can be made in plant-scale operations.

Although the possibility of ore discovery on Project C is better than elsewhere on the property, the expected tonnage of minable ore is not commensurate with the cost of exploration, and Government participation in the program is not recommended.

INTRODUCTION

An application for a Government loan under sec. 302 of the Defense Production Act of 1950, was made by Walter W. Johnson, manager, Panamint Tungsten Mines. The loan is intended to be used in exploration by trenching and sinking two shafts.

An examination was made of the Panamint Tungsten deposits by geologists[1/] of the U. S. Geological Survey and engineers[2/] of the U. S. Bureau of Mines in January 1953. Representatives of the Panamint Tungsten Mines, who accompanied the examiners, are as follows:

Francis H. Frederick, mining geologist,
503 Market Street, San Francisco 5, Calif.

1/ Dean Rinehart and Don Ross.
2/ Russell R. Trengove and Frank J. Wiebelt.

George Hellerich, mining engineer and superintendent, and Thad C. Green, co-owner, who reside on the property.

The property, consisting of thirty-one unpatented mining claims, is owned by Thad C. and Jo L. Greene. Fifteen of these mining claims have been leased to the Panamint Tungsten Mines, a partnership consisting of Walter W. Johnson, 910 Balfour Building, 351 California Street, San Francisco 4, Calif., William M. Maxfield, 535 Russ Building, San Francisco 4, Calif., and George J. O'Brien, c/o Executive Offices, Standard Oil Co. of California, West Olympic Blvd., Los Angeles, Calif.

The Panamint Tungsten deposits are situated within the Death Valley National Monument, Inyo County, Calif., (fig. 1), in the Panamint range of mountains on the west rim of Death Valley at elevations ranging from 5100 to 6000 feet above sea level.

To reach the property from Stove Pipe Wells, the nearest source for meals, lodging and mail, travel southwest on State Highway No. 190 seven miles to the Park Headquarters Checking Station, turn left and follow hard-surfaced road a distance of eleven miles to the left turnoff which is a dirt road to the old gold camp of Skidoo. This road is followed three and one-half miles to the property.

Southerly the hard-surfaced road leads to Wildrose Station, 16 miles from the property, and thence to Trona and Argus in the northwest part of San Bernardino County, 56 and 57 miles respectively from the property. Trona and Argus are on a branch line of the Southern Pacific railroad and are the chief supply and shipping points.

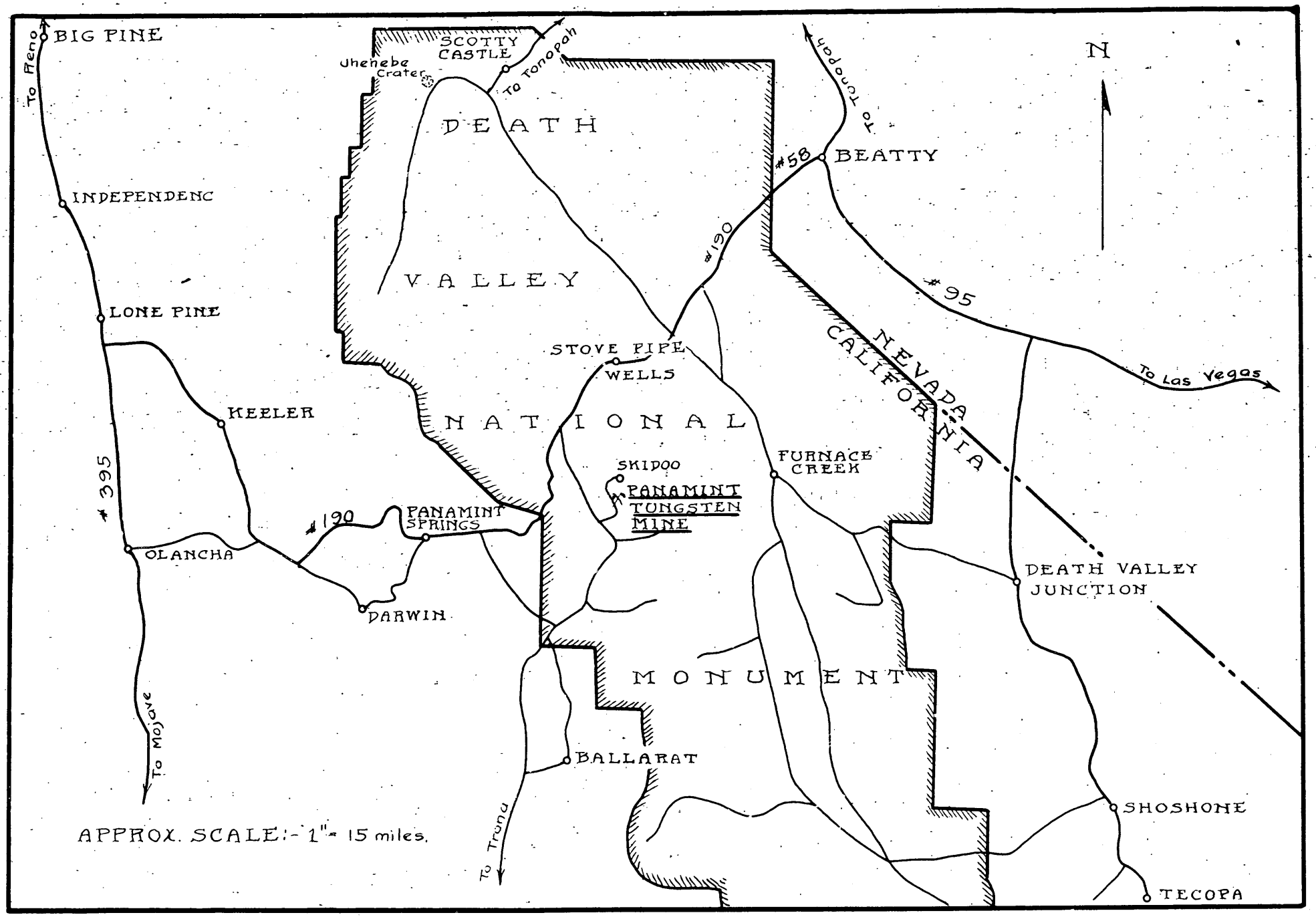

FIGURE 1. LOCATION MAP - PANAMINT TUNGSTEN MINE, INYO CO., CALIF.

Water for all uses must be obtained at Emigrant Springs about 10 miles distant. At present, water is hauled by truck in 50 gallon drums. Mr. Frederick stated that abundant water supply can be piped to the property by gravity from a supply about 18 miles distant and about 4,000 feet higher in elevation. It is estimated that a 4-inch line installed to furnish water from this latter source to the property would cost about $100,000.

There are no permanent structures on the property. The mine superintendent, the owner and the laborers live in trailers and tents.

Equipment on the property is as follows:

1 small tent
3 trailer houses
1 small portable compressor
1 D-7 Caterpillar tractor-dozer in poor shape
1 flat-bed truck

HISTORY AND PRODUCTION

In May 1952, Thad J. Greene prospected and then staked the first claims in this new tungsten district. The property was then known as the Greene's Tungsten Claims.

In November 1952, fifteen mining claims were leased to a newly formed mining company, The Panamint Tungsten Mines.

Except for about 50 tons of sorted ore obtained from a shallow pit on the Junction claims, there has been no production to date. This Junction claim has not been included in the loan application.

DEVELOPMENT

Exploration to date consists primarily of assessment work, such as blasting the outcrops and the building of truck trails. Several

small open cuts were made by drilling, blasting and mucking out by hand shovels. No attempt has been made to determine the downward extent of the outcrops.

GEOLOGY

Summary and Conclusions:

The area of the Panamint tungsten mines is underlain by metamorphosed sedimentary rocks, chiefly limestone, with lesser amounts of quartzite and phyllite; some plutonic igneous rocks are also present. Veins of quartz and calcite are common in the limestone and locally have been mineralized with scheelite.

The exploration proposed by the applicant includes trenching four separate areas containing scheelite. Three of the areas contain zones of quartz veins in limestone, and the fourth is traversed by a massive quartz vein along a fault.

Scheelite-bearing rock occurs locally but, with the exception of minor hot spots, is considerably below minable grade. Reserves inferred in the four areas are 745 tons containing 0.58 percent WO_3, and an additional 11,260 tons containing not more than 0.20 percent WO_3.

The inferred tonnage of minable ore is insufficient to warrant Government participation in an exploration program.

General Geology:

The area of the Panamint tungsten mines is underlain by metamorphosed sedimentary rocks and lesser amounts of plutonic igneous rocks (see Plate I). The predominant rock is gray to buff limestone that commonly is massive but locally is thin-bedded. Breccia is

common, and sandy and shaly layers are present locally in the limestone. The southeastern part of the property is underlain by phyllite and the northeastern corner of the mapped area is underlain by quartzite. In the southwest part of the property granitic rocks are exposed with mixed zones of schist, quartzite, and conglomerate. A central area is covered with alluvium.

The sedimentary rocks are tentatively correlated with the Lower Paleozoic sediments studied by Hopper (1947)[3] near Aguerreberry Point. The phyllite may correlate with part of the Johnnie formation of Cambrian age. The granitic rocks probably are part of a pluton described by Hopper as a correlative of the Sierra Nevada plutonics.

The regional dip of bedding is to the east, but local changes are common. A steep north-trending fault is coincident with the massive quartz vein in the Project D area (see Plate I). An east-trending fault with the north block downthrown is postulated along the south side of the alluvium.

Quartz veins and calcite veinlets are common in the limestones and most abundant in the area of Project B (see Plate I). Quartz veins are sparse in the phyllite, present and locally scheelite-bearing in the granitic rocks, and not present in the quartzite. The calcite veinlets are generally less than an inch wide, but the quartz veins range from less than one inch to 20 feet in width. The veins and veinlets locally contain scheelite that fluoresces a brilliant blue-white. Assays show that the scheelite contains not more than

3/ Hopper, R. H., Geologic section from the Sierra Nevada to Death Valley, California, Bull. Geol. Soc. American, Vol. 58, pp. 393-432, May 1947.

0.03 percent molybdenum.

Factors influencing estimation of grade:

Most of the scheelite, under ultra-violet light, shows subdued blue-gray halos and some patches give a foggy glow. The indistinct fluorescence may be the result of diffused light from fine grains of scheelite shining through quartz. An example of the danger of estimating grade from the foggy fluorescence is shown by sample No. 15 which was taken across a 6-inch vein zone that appeared to contain 25 percent WO_3. The sample assayed only 2.75 percent WO_3.

The operators contend that in the pits, the grade of ore has increased after one or two rounds of rock have been removed. They believe a combination of caliche coating and leaching of weathered outcrop conceals the true nature of the ore. The applicant's proposed trenching between the present pits is based on the premise that the pits reveal the true nature of the ore. The removal of weathered material between the pits is supposed to expose ore similar in grade to that now exposed in the pits.

Surface coating and weathering are not necessarily the causes of the marked change in grade within short distances. Sporadic scheelite localizations may be the reason. An example is provided by sample localities 1 and 11, which were examined in ultra-violet light and estimated to contain 0.2 to 0.4 percent WO_3. One round was shot, and the fresh faces were examined in ultra-violet light and sampled. Both faces appeared essentially barren, and assayed less than 0.01 percent WO_3. The Bond Street pit (east of the area of Project D -- see Plate I) provided another example of the sporadic

occurrence of scheelite. The pit was dug on two thin quartz veins that, near the surface, contained up to 20 percent WO_3 (according to F. Frederick). The pit has been extended 15 feet, and at the face the veins are barren.

Caliche coating, however, cannot be discounted as a factor in masking scheelite fluorescence. At some localities chipping revealed scheelite that previously did not fluoresce through the caliche skin. At other localities, however, the scheelite fluoresced through a caliche skin of comparable thickness.

In summary, the marked change of grade over short distances is believed to be due chiefly to sporadic mineralization. The pits represent exploration of the richest spots, as determined by examination in ultra-violet light, and are not random locations on a large rather uniform orebody. Continuity between the isolated occurrences or in depth cannot be expected.

Method of calculating reserves:

In computing reserves of inferred tonnages, the following practices were observed: (1) The length of an inferred block includes material that, under ultra-violet light, appeared comparable to the sample in grade; (2) the vertical depth assumed is one-half the length along which the material was exposed; (3) the sample width is the horizontal width of the inferred block. The calculated reserves include only those pods of ore exposed at the surface.

Areas of proposed exploration:

The exploration proposed by the applicant is in four separate areas. For purposes of discussion, the areas are referred to as

Projects A, B, C, and D, and are outlined on Plate I. The claim names used on Plate I are also used by the applicant to designate the project areas. The project boundaries are not claim boundaries.

Project A

The area which includes the proposed Project A (see Plate I) is underlain by massive limestone beds which strike northwest and dip southwest. The limestone is brecciated, silicified, and cut by many quartz veins. Most of the zones of silicification and quartz veins strike north and dip west from 30 to 90 degrees, but in some exposures exhibit no directional trend.

Three widely separated scheelite-bearing localities occur over a length of 750 feet along a north-trending line. Each locality has been explored by means of a small pit 4 to 6 feet deep. The scheelite is fine-grained and occurs in veinlets within the silicified zone.

The only minable ore found in the area of Project A is near the center pit where a mineralized zone 10 feet wide is exposed for a length of 20 feet. Assuming the ore continues to a depth of 10 feet, 200 tons of ore containing 0.5 percent WO_3 are inferred. Reserves inferred at the other two scheelite-bearing localities amount to about 60 tons containing not more than 0.14 percent WO_3.

Project B

The area of Project B (Plate I and II) is underlain by massive limestone beds that strike N. 50° to 90° southwest. Much of the limestone is transected by steeply dipping quartz veins that strike from slightly east of north to east, and range from a fraction of an

inch to about 2 feet in thickness. Many indistinct calcite veinlets are visible in the pits but they were not found in weathered outcrops. Although minor faults cut the limestone, very little breccia was observed.

Several scheelite-bearing localities spaced at regular intervals are aligned about N. 75° W. for a distance of 350 feet. In plan the mineralized areas form irregular patches with a maximum horizontal dimension of about 15 feet, with the exception of the easternmost locality which is 40 feet long and about 15 feet wide.

The greatest exposed vertical dimension in any of the localities is about 10 feet. Although exposures are abundant, no scheelite was seen between any of the mineralized areas shown on the map. The scheelite is generally fine-grained and is sporadically distributed through the quartz and calcite veinlets.

The only minable ore is exposed near the pit identified on the map by sample No. 6. The ore as exposed, is 10 feet long, 10 feet wide and has been explored for 10 feet vertically. Reserves inferred in this body are about 60 tons containing 0.5 percent WO_3. From the other scheelite-bearing localities an additional 950 tons containing not more than 0.19 percent WO_3 are inferred.

Project C

The area of Project C, as outlined on Plates I and II, is altered from the description in the original application to include part of the Junction claim as requested by the applicant's representative, Mr. F. H. Frederick. Massive limestone beds, striking northeast with

gentle dips, underlay most of the area and are the host for scheelite-bearing quartz veins. A north-trending contact between the limestone and granitic rock to the west coincides with the west boundary of the area of Project C. The alignment of the contact with a fault in the Project D area, and lack of silication of the limestone near the contact, suggests a fault contact.

Scheelite occurs at four widely spaced localities, designated on the map as C_1, C_2, C_3, and C_4, each of which has been explored by means of shallow pits or open cuts. At C_1, C_2, and C_4, scheelite is in thin discontinuous quartz veinlets which transect zones of silicified limestone breccia, but are too small to be shown individually on the map. At C_3 the scheelite is in quartz veins up to 4 inches thick, which cut unbrecciated limestone. The only ore-body showing a directional trend is at C_2.

C_1

The best scheelite showings in the area of Project C are at C_1 and have been explored by means of two small pits at the northeast edge of an irregularly shaped mineralized zone about 100 feet across. The scheelite is fine-grained, and occurs in criss-crossing quartz veinlets which transect silicified limestone breccia. The best showing is in the south pit where the ore is confined to a width of 5 feet along the north side of the pit, and is fairly uniform in grade to a depth of 8 feet. An 8-pound chip sample (No. 16) of this material contained 0.89 percent WO_3. Elsewhere, the material in the mineralized zone appears to be considerably below minable grade. A stockpile con-

taining about 50 tons of selected ore taken from the south pit has a weighted average grade of about 1.40 percent WO_3, according to assay data submitted by Frederick who took samples totaling 330 pounds.

C_2

At C_2 the scheelite is fine-grained and is distributed in small, crisscrossing quartz veinlets along a silicified zone. Scattered exposures indicate that the zone is 10 to 20 feet wide and extends for about 120 feet along a set of northeast-trending joints. The joints dip 50°-60° southeast and may represent sheeting along a fault zone, as the rock in which the scheelite occurs has been brecciated and silicified. Pods of quartz 3 to 6 feet wide and 10 to 20 feet long are common in the zone. No data concerning the dip of the mineralized body was found. Inasmuch as it parallels the strike of the joints, however, it is possible that it may also parallel the dip.

The best showings, at the northeast end of the zone, have been explored by means of a pit 30 feet long, 15 feet wide, and 3 feet deep. Elsewhere along the zone, the ore appears to be considerably below minable grade. In the pit, scheelite is distributed across a width of 9.5 feet, but ultra-violet light shows that the better grade material is confined to a width of 5.5 feet along the northwest side of the zone. Sample No. 10-A represents the material of better grade and contains 0.54 percent WO_3, whereas sample No. 10-B represents the low-grade material on the southwest side of the zone and contains less than 0.01 percent WO_3.

C_3

A small pit at C_3 is in a zone of criss-crossing scheelite-bearing quartz veins ranging from a fraction of an inch to 4 inches in thickness. The area containing scheelite is 12 feet long, 2 feet wide, and is exposed to a depth of 3 feet. Scheelite is finely disseminated through the quartz and in ultra-violet light, some veins fluoresce as though entirely composed of scheelite. A 6-inch zone containing three of these veins was estimated to contain 25 percent WO_3, whereas a sample of this zone (No. 15) containing only a small amount of country rock, assayed only 2.73 percent WO_3.

C_4

At C_4, 600 feet N. 60° E. of C_3, an irregular area about 10 feet across contains small veinlets of fine-grained scheelite in silicified and brecciated limestone. Sample No. 9 represents a chip sample taken across 5 feet of the best showings and contained 0.20 percent WO_3. The only working at C_4 is a 12-foot shaft which explores an east-trending vertical quartz vein 7 feet thick. Examination in ultra-violet light revealed no scheelite in the vein.

Reserves, Project C

The only appreciable reserves that can be inferred in the project C area are at localities C_1 and C_2. At C_1, the exposed ore body is 25 feet long, 5 feet wide, and is exposed to a depth of 8 feet. The reserves inferred in this body are about 100 tons containing 0.89 percent WO_3. From 2000 to 5000 tons of material containing no more than 0.10 percent WO_3 could probably be mined from the area adjacent

to the pit.

The exposed ore body at C_2 is 35 feet long, 5.5 feet wide, but is exposed vertically for only 3 feet. Reserves inferred in this body are about 525 tons containing 0.54 percent WO_3. In the remaining portion of the mineralized area, 4500 tons of material containing not more than 0.10 percent is inferred.

The reserves inferred at C_3 are 10 to 20 tons containing 0.5 percent WO_3. Reserves in the small body at C_4 are inferred at less than 50 tons containing 0.20 percent WO_3.

Project D

The purpose of Project D (see Plate I) is to explore a quartz vein on the Doggy claim, which occurs along a fault zone that is as much as 50 feet wide. The fault is between a gray limestone and a layer of black conglomerate. The quartz vein strikes approximately north and dips steeply to the west. It is 8 feet in maximum width and can be traced as discontinuous pod-like bodies for over 2200 feet. Locally, the bodies end abruptly; elsewhere they thin to quartz stringers within a few inches. The quartz on the Doggy claim is similar to the quartz veins on the other claims, but is more abundant.

Scheelite occurs locally as disseminated grains and veinlets in the quartz, but with minor exceptions is not found in the silicified breccia. Eleven scheelite occurrences were located by the use of ultra-violet light along the 2250 foot length. The only ore of minable grade is near sample locality No. 12. A chip sample of a 2-foot width across the quartz vein for a length of 20 feet assayed 0.63 per-

cent WO_3. The three other samples shown on the map assayed not more than 0.15 percent WO_3 for widths of 3 to 4.5 feet. Two pits have been dug in the massive quartz. The most southerly pit, which is 10 by 15 feet and 10 feet deep, is entirely in mineralized rock, but sample No. 14 contained less than 0.01 percent WO_3. The north pit is 10 by 20 feet and 20 feet deep, and reveals only traces of scheelite.

Slopewash covers much of the hillside along the Doggy claim, but the quartz vein, being more resistant, is well exposed in most places. The quartz contains scheelite only locally, and the occurrences are commonly low in grade. The vein at depth will probably be no more mineralized than are the surface exposures.

Chip sample No. 12 is from the only minable ore body in the quartz vein. The sample width is 2 feet and the maximum length of scheelite-bearing rock is 20 feet. By assuming a depth of 10 feet, 40 tons of ore containing 0.63 percent WO_3 is inferred. From the remaining scheelite-bearing localities, an additional 700 tons containing not more than 0.15 percent WO_3 is inferred.

SAMPLING

Eighteen samples were taken by the Bureau engineers[2/]. Sampling of the mineralized highly silicified limestone was very difficult. Chip samples were cut by using moils and also by breaking off pieces with a single jack.

For location of samples taken see Plate I.

Project "A":

Exploration work has been proposed for the Walter J. and the

adjacent George D. claims. The George D. claim was examined with an ultra-violet light on two successive nights. No mineralization was found. Therefore, the proposed work on the George D claim will be removed from the exploration program.

Three exposures were sampled on the Walter claim as follows:

Sample No.	%, WO_3	%, Mo	Description	Remarks
1	*0.01	*0.01	Outcrop 6.5 feet thick.	This lamped poorly. It was blasted the day after the sample was taken, and lamping the following night showed that the blasting eliminated all mineralization.
2A	0.76	0.03	5-foot thickness of best mineralization.	Mineralization exposed in shallow open cut.
2B	0.22	0.01	5-foot thickness of poorer mineralization.	
3	0.14	*0.01	3-foot thickness.	Exposed 5 feet along strike in open cut.

Project "B":

Six samples were taken on the Steep Hill claim which is at the extreme east end of the property. Mineralization is exposed in four shallow side hill cuts and one outcrop. Results of the sampling are as follows:

Sample No.	%, WO_3	%, Mo	Description	Remarks
				Cross fractures exposed at right angles to general strike. Shallow side hill cuts.
4A	0.07	*0.01	6-foot thickness)	
4B	0.02	*0.01	3.5-foot thickness)	Length of exposure 15 feet.
5	*0.01	*0.01	4-foot thickness	" " " 10 "
6	0.51	0.02	10-foot thickness	" " " 21 "
7	0.19	0.01	9-foot thickness H.G.	" " " 9 "
8	0.11	*0.01	3-foot outcrop	" " " 15 "

*Less than.

Project "C":

Four samples were taken on the Blue Stone claims which are near the south boundary of the property. Results of the sampling are as follows:

Sample No.	%, WO_3	%, Mo	Description	Remarks
9	0.20	*0.01	5-foot thickness	Shallow pit shows mineralization for 9 feet along strike.
10A	0.54	*0.02	5.5 feet thickness.	Split sample in same shallow cut.
10B	*0.01	*0.01	4-foot thickness	
15	2.73	0.03	6-inch stringer	Shallow open cut,-stringer exposed for 8 feet along strike.

Project "D":

Four samples were taken in two shallow open cuts and two outcrops on the Doggy claim which is north of the Blue Stone claim. Results of the sampling are as follows:

Sample No.	%, WO_3	%, Mo	Description	Remarks
11	*0.01	0.01	4-foot thickness	Open cut
12	0.63	0.02	2-foot outcrop	Exposed 2 feet along strike.
13	0.15	*0.01	3-foot outcrop	Exposed 36 feet along strike.
14	*0.01	*0.01	4-foot thickness	Open cut exposed 16-feet along strike.

*Less than.

ORE DRESSING TESTS[4/]

A composite of 18 small samples was tested. This material contained only 0.25 percent WO_3, but since preliminary examination indicated possibilities of satisfactory concentration of the scheelite,

4/ Hydrometallurgical & Ore-Dressing Branch, Reno, Nev.

standard gravity concentration and flotation tests were made.

The ore contained some fairly coarse grains of scheelite, but much of the scheelite was fine-grained and locked in quartz and calcite. A small amount of altered fine-grained pyrite was noted.

For gravity concentration on the shaking table, the ore was crushed to minus 10-mesh and hydraulically classified into three sand products and slimes. Each was separately tabled. It had been expected to make low-grade tailings in each size range, and thus produce an enriched concentrate product for retreatment and possibly a small amount of high-grade concentrates. Analyses of the table products demonstrated that it was not until the minus 65-mesh range was reached that tailings containing as little as 0.03 percent WO_3 were obtained. Consequently, treatment by gravity concentration would not be practical since neither good concentrates nor satisfactory tailings for discard were produced. Grinding the entire ore to minus 65-mesh would produce a large proportion of slimes too fine for gravity concentration. The alternate treatment was flotation.

The flotation feed was stage-ground to minus 100-mesh. The small WO_3 content of the ore made it difficult to obtain satisfactory concentrates in the laboratory operations. However, sufficient information was obtained to indicate that the ore could be treated by this method, providing such treatment would be economical.

The rougher stage of flotation was conducted using soda ash, sodium silicate, and quebracho for conditioning reagents, and oleic acid as collector with Dowfroth. The rougher concentrates from

several charges were combined and cleaned in several stages. The cleaner concentrates contained 11.3 percent WO_3, representing 71.2 percent recovery in 1.53 percent of the original weight of ore. The rougher tailings contained 0.025 percent WO_3, representing a loss of 9.5 percent of the total WO_3 in the original ore. The remainder of the WO_3 was in the cleaner tailings. In plant operation, it might be possible to produce flotation concentrates of marketable grade with perhaps 80 percent recovery of the original scheelite. Detailed data of this test are as follows:

Flotation test - Panamint Tungsten Mines Company Ore

Product	Weight, percent	WO_3, percent	Distribution WO_3, percent
Concentrates	1.53	11.29	71.2
Cleaner tailings	5.67	.83	19.3
Rougher tailings	92.80	.025	9.5
	100.00	0.24	100.0

The flotation reagents used were, in pounds per ton of ore:

	Rougher	Cleaners
Soda ash	2.5	0.25
Sodium silicate	2.0	0.30
Quebracho	0.3	0.15
Oleic acid	0.3	-
Dowfroth	0.1	-

CONCLUSIONS AND RECOMMENDATIONS

Geologist's conclusions: Total ore reserves of minable grade inferred in the property are 745 tons containing a weighted average of 0.58 percent WO_3. In addition, a total of 11,260 tons of sub-marginal ore

containing not more than 0.20 percent WO_3 is inferred, the largest blocks of which occur at C_1 and C_2. Reserves inferred in each individual locality are tabulated in Table 2; assay data and sample widths are given in Table 1.

These reserves are either too low in grade or of insufficient tonnage to warrant Government participation in an exploration program.

The applicant has amended the original exploration proposal in a recent letter to Mr. H. C. Miller, Executive Officer, DMEA, Region III. The amended proposal is limited to the Project C area, at localities C_1 and C_2, where several hundred feet of trenching and underground work is proposed. The applicant bases this exploration upon his belief that the actual scheelite content of the rock is masked by a coating of caliche and that trenching will reveal ore of minable grade beneath the present surface. This belief is not shared by the writers. He agrees, however, that under ultra-violet light, the scheelite-bearing rock in the areas of proposed exploration, excluding that exposed in the pits, does not appear to be of minable grade.

Engineer's conclusions: In the opinion of the Bureau examining engineers, this property is not attractive for capital investment. Because of the low tenor of the ore and the small tonnage indicated, there is little possibility of increasing the reserve appreciably by further exploration.

JOINT RECOMMENDATIONS

Although the possibility of ore discovery is better at localities C_1 and C_2, than elsewhere on the property, the expectable tonnage of minable ore is not commensurate with the cost of exploration, and Government participation is not recommended.

TABLE 1

Table of Assays

	Sample No.	%, WO_3	%, Mo	Sample width in feet
Project A	S-1	*0.01	*0.01	6.5
	S-2A	0.76	0.05	5.0
	S-2B	0.22	0.01	5.0
	S-3	0.14	*0.01	3.0
	S-4A	0.07	*0.01	6.0
	S-4B	0.02	*0.01	3.5
Project B	S-5	*0.01	*0.01	4.0
	S-6	0.51	0.02	10.0
	S-7	0.19	0.01	9.0
	S-8	0.11	*0.01	3.0
	S-9	0.20	*0.01	5.0
	S-10A	0.54	*0.02	5.5
Project C	S-10B	*0.01	*0.01	4.0
	S-15	2.73	0.03	0.5
	S-16	0.89		5.0
	S-11	*0.01	0.01	4.0
Project D	S-12	0.63	0.02	2.0
	S-13	0.15	*0.01	3.0
	S-14	*0.01	*0.01	4.0

*Less than.

TABLE II

Table of Inferred Reserves

	Minable Ore Tons	%, WO_3	Sub-marginal Ore Tons	%, WO_3
Project A	200	0.50	60	0.14 and less
Project B	60	0.50	950	0.19 " "
Project C_1	100	0.89	5,000	0.10 " "
Project D_2	325	0.54	4,500	0.10 " "
Project C_3	20	0.50		
Project C_4			50	0.20 " "
Project D	40	0.63	700	0.15 " "
	745		11,260	

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

March 23, 1953

400

Memorandum

To: W. S. Martin, DMEA

From: D. M. Lemmon, USGS

Subject: Field Report
Panamint Tungsten Mines
Bluestone Claims
Inyo County, California

DMEA-2807
Tungsten

The Bluestone claims were examined in January 1953, by Rinehart and Ross of the Geological Survey, and Trengove and Wiebelt of the Bureau of Mines. Their joint report, dated March 6, recommends denial of the exploration application because the cost of exploration is high and the potential tonnage is low. Eighteen samples across widths of 2 to 10 feet assayed from a trace to 0.89 percent WO_3, and one sample across 0.5 feet assayed 2.73 percent.

I concur with the Field Team recommendation that the application be denied.

D. M. Lemmon

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400

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 9 1953

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

1012 Flood Bldg.
870 Market St.
San Francisco 2, Calif.

March 5, 1953

WSM

Memorandum

To: Defense Minerals Exploration Administration,
Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA-2807 (Tungsten)
Panamint Tungsten Mines, Bluestone, et al. claims
Inyo County, California

Attached are two copies of a letter, dated March 2, 1953, from Mr. Walter W. Johnson, Manager, Panamint Tungsten Mines, by means of which he is submitting a revised program of exploration for his company's property.

The property was examined recently by our engineers and geologists on the basis of the applicant's original application, but now that the company has revised its program and has included in it certain claims which had been excluded from the original application, the report being prepared on the results of the examination will consider the company's latest proposal.

H. C. MILLER

H. C. Miller
Executive Officer, DMEA Field Team
Region III

Attachment

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration

PANAMINT TUNGSTEN MINES
351 California Street
San Francisco 4, California

March 2, 1953

Mr. H. C. Miller
Regional Director
U. S. Bureau of Mines
1004 Flood Building
San Francisco 2, California

RE: DMEA Docket No. 2807
Panamint Tungsten Mines

Dear Mr. Miller:

Recent mapping, sampling, and exploration work done at the Panamint Tungsten Mines since the date of our original application indicate that we should confine the first intensive work to the Bluestone, Bluestone Fraction, Junction, and Junction Fraction mining claims. We are therefore submitting herewith a revised application for a loan from DMEA to explore for tungsten in the area of Project C, which is now extended to include the above mentioned claims. The property owners, from whom we have a lease, have agreed to sign a lien form including those claims.

The New Project C is to be composed of two (2) stages. First stage is to be a maximum of 1600 feet of trenching in bedrock, trenches to be 3 feet wide and 3 feet deep into bedrock, work is to be done by drilling with air hammers, blasting, and cleaning out the trenches by hand shoveling. Two (2) air hammers and two (2) compressors will be used. One (1) small (105) compressor is operator owned; the other, a 210, is to be rented (or equivalent at 210 rental rate). Trenching is to be in three (3) separate areas of the total project area. Stage 2 is to be the sinking of two (2) shafts, each to a maximum depth of 100 feet, to a lesser depth if progress evidence so indicates, and then there is to be 100 feet of lateral work from each shaft at places to be determined after completion of the shaft work. The specific shaft sites are to be determined after the completion of part, or all, of Stage 1. Trenching work will require 2½ months elapsed time with 5 workmen plus the superintendent. The shaft and lateral underground work will require 5½ months elapsed time for 8 men plus the superintendent.

Trench Area C-1 - North central part of Bluestone Fraction claim, including the site of DMEA sample mark 10A. Area to be explored is 300 feet long southwesterly and 100 feet wide. Trenches to be 40 feet apart and 25 to 100 feet long across the estimated trend of the ore, a total of 400 feet of trenching. A shaft in Stage 2 is to be sunk at some favorable place indicated by the trenching. Two (2) test pits, each 10 feet deep, have been recently put down in ore in this area. One pit is at DMEA mark 10A, the other pit is about 70 feet southwesterly.

Trench Area C-2 - West part of Junction claim and including the area of the location cuts made prior to December 1952. Area to be explored is 300 feet by 300 feet in plan in the limestone formation, just easterly of the granitic complex and includes the area of DMEA sample No. 16. Trenches to be 40 to 50 feet apart and 50 to 300 feet long, across the estimated trend of the ore, a total of 1000 feet of trenching. A shaft is to be sunk at some favorable place to be indicated by the trenching. A stockpile of about 40 tons of ore has been made from one of the cuts. A 100-pound sample from the pile assayed 1.95% WO_3. A 270-pound sample taken at another time assayed 1.26% WO_3. Two (2) smaller samples taken from the area before the stockpile was completed assayed 14.3% and 8.7% WO_3.

Trench Area C-3 - West part of Bluestone claim near the discovery work for that claim. Area to be explored is 120 feet by 50 feet and includes the area of DMEA sample #15. There are to be four (4) trenches each 50 feet long and 40 feet apart, cutting across the estimated trend of the ore, a total of 200 feet of trenching.

Stage 2

Shaft C-1 - Bluestone Fraction Claim.

The shaft is to be sunk at the most favorable appearing place after completion of the trenching, or part of the trenching. Shaft to be sunk down on the vein following it as well as possible, to be 4'x 7' inside the 6"x 6" timber sets. It is currently estimated that the vein, or ore zone, dips so steeply that the shaft may be vertical. The shaft will be started as a pit to as deep as possible without hoisting equipment, possibly 10 feet deep. By that time it will be fairly well known what the inclination of the shaft and headframe can be. Cost estimates are based on the assumption that the shaft will be vertical and will have to be lagged throughout to protect workers from the possible fall of small rock fragments. The headframe is to be minimum height for efficient working conditions for the exploration work, probably about 16 feet high. Rock will be dumped directly into a mine car at the shaft collar and no bin will be constructed. One hundred (100) feet of lateral work as drifts and crosscuts, all in ore as much as possible, are to be run from the shaft at horizons and in directions to be determined as the work progresses. Rock from the lateral work will be shoveled into small portable hoisting buckets transported to and from the shaft on small dolly trucks on mine track of 18" gauge. Weight of rail to be used will be whatever is available at the most economical price per foot of track, delivered at the mine.

Recent work at the Bluestone area shows that the vein zone is in excess of 6 feet in width in some places.

The drifts and crosscuts are to be 5 feet wide by 7 feet high, and it is expected that almost no timbering will be required in the drifts and crosscuts.

Shaft C-2 - Junction Claim.

Same conditions as Shaft C-1 but with respect to the Trenching at C-2.

Both shaft areas are to be worked simultaneously; two (2) hoists and two (2) compressors are to be rented from the outside. There will be a total of eight (8) men plus the superintendent at the property. Two (2) men will be underground at each shaft, one (1) hoistman at each shaft, and two (2) other top men to attend to timber framing, hauling water, sharpening bits, attending to machinery, and tramming muck from the shafts.

Work done with a smaller crew would involve more elapsed and working time and would cost as much, or more, than if done as planned.

Information under the item numbers in the original application apply unless amended below.

3.(a) Thirty-six (36) claims are now held by lease. All claims can be included in the contract. The lien Form MF 203 signed recently includes 18 claims and includes the Bluestone, Bluestone Fraction, Junction, and Junction Fraction claims

3.(a) continued

and covers all of the area of interest in this revised application and a considerable area surrounding the areas of proposed exploration. The claims held are shown on the attached property map, which is the result of a new transit survey and an amending of the original claims.

The claims marked with brown at the claim names are included in the recently signed lien form.

3.(d) There have been minor changes in the lease agreement by which the royalty free period is extended and the minimum royalty payments reduced.

5.(b) Proposed work at the revised Project C is described in the attached letter and is indicated on the new attached map.

6.(b) The Superintendent's salary as far as the Government contract is concerned will be $600 per month. Recent work at the mine shows that all wages will have to be $2.00 per hour. It may be possible to pay $1.90 per hour to some unskilled labor but it is expected that $2.00 will have to be paid to get able men. Estimates are based on an average $2.00 rate.

Work will be on a 6-day per week basis which, at $2.00/hr., averages $17.33 per man shift.

6.(c) Operating materials and supplies.

Two (2) small pits, or shafts, recently sunk in the Bluestone area indicate that the shafts might have to be lightly timbered for the full depth of the shafts to conform to California State law, as it now appears that some of the ground spalls lightly after blasting and exposure. To avoid harmful fall of small rock fragments, the shafts may have to be lagged. For the estimates it has been assumed that the shafts will have to be timbered with 6"x 6" sets, and lagged with 2"x 12" lagging, and that the shafts will probably be vertical and be lined with 1"x 12" boards in the hoisting compartments. Small hoisting buckets will be used, and in the drift work it is planned to use the same portable buckets on dolly trucks. If the shafts can be inclined, then skids will be used and the shaft lining can be omitted and the amount of lagging probably reduced.

6.(d) Depreciation of operator owned equipment.

See Sheet 12 of original application.

The Tractor-Dozer will not be extensively used in the DMEA work and is therefore to be only on company account. The 105 Compressor and Truck will be used and are to be depreciated as shown in the new tabulation, which is at 1/60th of the estimated value per month.

The two (2) hoists and two (2) larger compressors will be rented from outside owners in order to keep down the total cost of the exploration work. Costs are shown in the tabulation.

PANAMINT TUNGSTEN MINES
351 California Street
San Francisco 4, California

Mr. H. C. Miller - Page 4
Regional Director
U. S. Bureau of Mines

March 2, 1953

6.(f) New buildings, etc.

The cookhouse-boardinghouse is to be 24'x 12' in plan, wood frame construction, 1" wood walls, craft paper lined against the inside of the wood walls, corrugated metal roofing, 6 windows, 2 doors. Equipped with small cook stove, board table, benches. Estimated cost includes labor, about 25% of the total estimated $3,000 cost. There are two (2) trailer houses, company owned, at the camp now. A total of five (5) will be needed. A small change house-washroom-shower facility is necessary. The change house will be partitioned into two (2) rooms, will be 10'x 20' in plan, and same construction as the boardinghouse.

Very truly yours,

PANAMINT TUNGSTEN MINES

Walter W. Johnson

Walter W. Johnson
Manager

WWJ:C
Enc.

		1ST STAGE	2ND STAGE	
	TOTALS	TRENCHING	SHAFT SINKING	DRIFTING
Wages, Salaries, & Feed		1600 ft. 5-man crew	200 ft. 8 men	200 ft. 8 men
Calendar Shifts	187	54	106	27
Elapsed time - days	223	65	126	32
Man shifts	1,334	270	848	216
$ Wages @ $17.33/shift including overtime	$23,020	$4,580	$14,696	$3,744
Superintendent 8 mos. @ $600	4,800	1,200	3,000	600
Consulting Geologist & Engineer	2,000	500	1,250	250
	$29,820	$6,280	$18,946	$4,594
Supplies				
Explosives, wire	$ 2,700	$1,000	$ 1,000	$ 700
Fuel: compressors, hoists & truck (gasoline)	2,500	600	1,500	400
Steel & bits (T. Carbide)	474	160	200	114
Bit sharpening wheels	60	15	30	15
6 Picks, 12 shovels	80	22	47	11
Batteries for U.V. Light	56	16	32	8
Timber @ $125/M bd.ft.	3,200	0	2,870	330
Hanging rods, nuts & W	100	0	100	0
Nails & spikes, 300#	32	0	32	0
Miscellaneous: ropes & blocks, pipe fittings & valves, Jim Crow, 3/4-ton pull lift hoist, pinch bars, 2 single jacks, docking saw, xcut saw, Diston adjustable saw, misc. small tools	200	20	140	40
	$ 9,402	$1,833	$5,951	$1,618

	TOTALS	1ST STAGE TRENCHING	2ND STAGE SHAFT SINKING	2ND STAGE DRIFTING
Equipment				
Depreciation on				
105 Compressor - operator owned valued at $2,400	$ 320	$ 100	$ 160	$ 60
Truck - operator owned valued at $600	80	25	40	15
Rental - from outside				
1 - 210 compressor @ $7.50/day	1,710	525	945	240
1 - ditto	1,185	0	945	240
2 - gasoline driven hoists with cables	750	0	600	150
Purchase				
1 - rock drill w. handles & legs	375	375	0	0
1 - ditto	375	0	375	0
Bit sharpener	185	0	185	0
400 ft. 2" blk. pipe @ 50¢/ft.	200	50	75	75
400 ft. 1" blk. pipe @ 25¢/ft.	100	0	50	50
4 - 50-ft. 1" air hoses w. fittings @ $50	200	100	100	0
4 - 50-ft. 3/4" water hoses w. fittings @ $40	160	0	80	80
2 - water pressure tanks w. hoses and fittings @ $50	100	0	50	50
2 - air line oilers @ $55	110	40	40	30
1 - electric blasting machine	57	0	57	0
600 ft. 20# rail for 300 ft. track w. spikes, fish plates, bolts	338	0	113	225
2 - hoisting buckets @ $100	200	0	200	0
2 - dolly trucks & 2 buckets	300	0	0	300
2 - mine cars at shaft collars	250	0	250	0
2 - head frames - welded or timber, installed	400	0	400	0
	$7,395	$1,215	$4,665	$1,515

	TOTALS	1ST STAGE TRENCHING	2ND STAGE SHAFT SINKING	2ND STAGE DRIFTING
Miscellaneous				
Maintenance: truck, 3 compressors, 2 hoists, 3 drilling machines (outside work & parts)	$ 300	$ 50	$ 200	$ 50
Accounting, reports, etc. San Francisco office	1,000	280	580	140
Liability insurance	30	8	18	4
Compensation insurance	3,060	636	1,946	478
Pay-roll taxes	1,168	243	743	182
Boardinghouse op. loss	2,000	0	1,600	400
Contingencies	2,000	600	1,100	300
	9,558	1,817	6,187	1,554
Grand Total	$56,175	$11,145	$35,749	$9,281

New Buildings, Installations *(Includes labor)*

Boardinghouse-kitchen equipped	$ 3,000
Change house, washroom, shower, w. fixtures	2,200
3 Trailer houses, to make total of 5 at mine	2,400
	~~XX,600~~
	~~$63,775~~
Storage shed for tools, supplies, equipment, 12'x 14'x 8' high	500
	8,100
	$64,275

Code 400

400

JAN 2 1953

Mr. H. C. Miller
Executive Officer, DMEA Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA 2807 - Tungsten
Panamint Tungsten Mines
Bluestone, et al. claims
Inyo County, California

Dear Mr. Miller:

On December 18, 1952, we referred the subject docket to your office for a field examination, and we are sending you, under separate cover, supplemental data on the same project. These data are contained in sheets A through D3 and a map scaled 400 feet to the inch.

The Operator's covering letter gave us the following information:

> "The size of the drifts are not mentioned in the application but they will be 5' wide by 7' high. The size of the shafts will be 5' wide by 5' long in plan with a possible maximum size of 6' by 8'. As far as we can tell, the ground stands very well and requires little timbering."

As you will note immediately, the project as proposed will require revision. The items mentioned below need investigation:

(1) We would approve a supervisor's salary up to $600.00 per month if the superintendent worked only on the exploration project, or up to that rate for the proportion of his time worked on the project if he were also engaged in supervising other operations. Any salary beyond $600.00 per month should be for the sole account of the Operator.

(2) With a superintendent earning $600.00 per month, the consulting geologist should not be required more than once a week. Expenses above $15.00 per day would not ordinarily be approved for a consultant at $50.00 per day.

(3) Equipment devoted to the project by the Operator can be charged against the project on a depreciation basis of 1/60 (one sixtieth) of its fair value per month and should not be shown as rental.

(4) To the extent that the installations are shared between men on project work and men on production work, the costs of such installations should be pro-rated.

(5) The "Miscellaneous" and "Contingencies" items appear to be out of line with the scale of the project and should be adjusted to suit the size of the project that the field examination finds is warranted.

(6) Project "C" is unacceptable inasfar as it contemplates sinking a shaft close to the boundary of a claim excluded from the exploration project. Please make clear to the Operator that DMRA cannot aid projects of work prosecuted primarily for mining or preparation for mining. Trenching to a depth of 20 feet with a dozer looks more like mining than exploration.

(7) Project "F" should be undertaken only if the Operator's independent exploration on the Junction claim indicates that the ore in the southwestern part of that claim might extend into the Frederick. In that event we would also have to consider whether trenching through 15 feet of overburden and an additional 5 feet of bedrock would not be mining rather than exploration.

(8) Project "E" with its network of cross and longitudinal trenches, including one trench with a nearly vertical face of 25 feet at the upper end, also seems more like mining than exploration.

(9) In all probability you will find that the project, if warranted, should be planned in stages. Possibly Stage I would consist of enough dozer work to determine whether the shaft of Project "A" is justified. Then Stage II might include sinking on Project "A" and dozer work on Projects "D" and "E" to determine whether a second shaft is justified.

(10) We are particularly interested in knowing promptly how closely you can check the WO_3 assays given in Mr. F. H. Frederick's report of December 1, 1952, which was attached to the subject application.

Sincerely yours,

Frank E. Johnson

Chairman, Operating Committee

Approved:

J. H. Hedges

Member, Bureau of Mines

A. R. Kinkel, Jr.

Member, Geological Survey

WSMartin:lm 12/24/52

CC: Docket
Adm. Rand. File
Field Team, Reg. 3
Code 400

CC: D. M. Lemmon, USGS
R. W. Cooban, USBM
Operating Committee

Dmea 2807

402

Supplemental information - Form MF-103 - Sheet 4

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DEC 22 1952

2807

Item No.

6.(a). Independent Contracts. - None

(b). Labor, supervision, consultants.

4 Miners @ $2.00/hr.
2 Laborers @ $1.75/hr.
1 Tractor operator-Truck Driver-Mechanic-Compressor Operator @ $2.25/hr.
1 Superintendent @ $750 per month
Part time Consulting Geologist @ $50/day plus expenses. Estimated total fee and expenses to project's completion is $3,000.

Note: Total wages, salaries and fees and distribution to the 6 projects is shown on another sheet attached hereto.

(c). Operating materials and supplies are listed on attached sheet showing cost distribution to the 6 separate projects.

(d). Operating Equipment. - Rental and purchase costs of equipment is shown on an attached sheet showing distribution cost to the 6 separate projects.

(e). Rehabilitation and Repairs. - None

(f). New Buildings, Improvements, Installations. - Room and board facilities will have to be provided for the working crew. House trailers for sleeping two men each can be purchased for $800 each trailer and will have considerable value at the time of completion of the project. Three house trailers costing a total of $2400 will house 6 men. A cook house with boarding table and complete equipment can be constructed and equipped for $3000. These items are listed on the attached distribution and totals sheet. Other camp facilities and accommodations will be supplied at operators expense.

(g). Miscellaneous.

Estimated costs of repairs and maintenance of the compressors, tractor-dozer, truck, and drilling machines is shown on the attached distribution and totals sheet.

Estimated costs of assays, accounting costs, office preparation of reports to the DMEA, compensation insurance, liability insurance, payroll taxes and boarding house operating losses are shown on the attached distribution and totals sheet.

Supplemental information - Form MF-103 - Sheet 5

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Item No.

6.(h). Contingencies.

A total of $ 3,500.00 is estimated to cover possible contingencies due to possible breakdown of equipment, unforeseen overtime pay, poor labor and miner work, higher pay to keep men on the job if wage rates rise elsewhere, and due to unforeseen conditions in the condition of the rock to be drilled and blasted - such as loose, gravelly ground, or extremely hard drilling rock.

7.(a). Yes.

Supplemental information - Form MF-103 - Sheet 6

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Project A:

The purpose of this project is to make a series of surface trenches in areas of ore now exposed at the surface in the George D. and Walter J. claims to see if there is an ore shoot in the area, and then to sink a shaft 100 feet deep on a high grade ore showing in a shallow trench now existing at the place of the location work in the Walter J. claim.

In the George D. claim the trench work is to be done by drilling and blasting. There are to be 6 trenches 25 to 50 feet long across the limestone beds, 5 to 10 feet wide, and 3 to 5 feet deep. If ore is found by that work then there are to be two trenches in the best ore areas at right angles to the first 6 trenches, each to be 50 feet long, 5 to 10 feet wide, and 3 to 5 feet deep in the ore zone defined by the first 6 trenches. Work in the George D. claim is to be confined to a known ore area in the south west part of the claim, covering about 550 feet in length, roughly parallel to the side lines.

Surface work in the Walter J. claim is to be 8 trenches made by drilling and blasting in the known ore areas, and by trenching with the tractor-dozer down slope to the east and to the south of the known ore areas, along extensions of the strike lines of the two visible ore leads. The dozer trenches to be 75 to 100 feet long, and 10 to 15 feet wide. The drilled and blasted trenches are to be in presently exposed bed rock and in bed rock exposed by the dozer trenches to expose ore for lamping and sampling. Six of the drilled and blasted trenches are to be 10 to 20 feet long crossing the ore leads and two of the trenches are to be 100 feet long each, along the ore leads, depth to be 3 to 5 feet.

Crude access roads will be built to the two areas of surface work by the dozer and a limited amount of drilling and blasting. Road work will require 8 days with the dozer, and 3 days drilling and blasting by two men.

Surface trenching by the dozer will require 3 days. Drilling and blasting in the trenches will require 20 days for 3 men, including moving time with equipment to separate trenching places on the project.

A shaft is to be sunk in the high grade showing at the Walter J. claim in the approximate center of the area to be trenched, as indicated on the attached property map. The shaft is to be 100 feet deep, with 50 feet of lateral work to be done on ore showings, near the bottom of the shaft. Total manpower for the shaft and drifting work and related preparation of headframe and hoist will be 70 shifts each for 3 men.

Estimated total elapsed time for project A: 5 months. Total cost and breakdown shown on accompanying tabulation sheets.

Supplemental information - Form MF-103 - Sheet 7

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Project B:

The purpose of Project B is to determine the surface extent of ore exposed in 5 open cuts now existing in the Steep Hill claim. Ore and surface indications are exposed over an area about 100 feet wide by 600 feet long as indicated on the attached property map. Trenches are to be made by dozer work in two trenches 100 feet long each, at the lower end of the ore zone, and by drilling and blasting into the bed rock in the bottoms of the proposed dozer trenches and by extending into the bed rock from the ends of the dozer trenches, and at 4 other trench areas, in bed rock, making a total length of drilled and blasted trenches of 1250 feet. The blasted trenches to be 5 feet deep; one trench will be run more like an open cut with a nearly vertical face of 25 feet at the upper end.

A crude tractor road will be built with 2 days work with the dozer and two days work by two miners drilling and blasting.

The trench and open cut work will require 2 days with the dozer and 40 days for two men (one miner and one helper). Total elapsed time for the project: 2 months. Total cost and breakdown shown on accompanying tabulation sheet.

Project C:

To explore the surface and underground for continuation of known tungsten ore in the Blue Stone Claim and to explore the surface for tungsten ore in certain other areas of the Blue Stone, Bond Street Extension No. 1, and Doggy Extension No. 1 Claims where geological indications for tungsten ore discoveries are very good.

Surface trenching by tractor-dozer, for 2 days, in known areas of scheelite mineralization is to total 900 feet in 6 crosscut trenches and two trenches along the general strike of the exposed veinlets of quartz, as indicated on the map in the Blue Stone claim. The dozer trenches are to be from 2 to 5 feet deep to expose the bed rock. Then the dozer trenches are to be deepened 3 to 5 feet by drilling and blasting at any ore showings exposed by the dozing. Other ore showings at bed rock areas now exposed are also to be trenched by drilling and blasting to make trenches 3 to 5 feet deep. A total of 20 shifts each for a miner and helper will be required in the drilling and blasting work.

A shaft is to be sunk at a good grade ore showing now exposed in the Blue Stone Claim where there is now a shallow trench and small ore dump. The location of the proposed shaft is marked on the property map attached herewith. The shaft is to be 100 feet deep and is to follow the ore which dips steeply. A level is to be run from the shaft, near the proposed bottom of the shaft, in NE and SW directions along the ore zone a total distance of 200 feet. A total of 100 shifts each for 2 miners and one helper-hoistman will be required.

Supplemental information - Form MF-103 - Sheet 8

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco, California

Project C: (Cont'd)

Additional dozer trenching is to be done in loose valley fill or alluvium at 3 separate places as designated on the property map in the NW part of the Blue Stone claim and the southerly parts of the Doggy Extension No. 1 and Bond Street Extension No. 1 claims. Each trench to be 300 feet long, and to find bed rock, probably at 10 to 20 feet from the present surface. The trenches are to be 200 to 250 feet apart. If ore showings are found in the dozer trenches then some drilling and blasting into the bed rock should be done to more thoroughly expose the ore for sampling and lamping. Such drilling and blasting should total one weeks work for one miner and a helper. Road construction to the areas of Project C can be done by a total of one day with the tractor-dozer.

Total work required will be 223 miner-shifts, 123 helper shifts, and 18 dozer operator shifts. Total elapsed time will be 6 months.

Project D:

Purpose is to explore for surface and downward extension of tungsten mineralization in the Doggy quartz vein in certain places in the Doggy claim and in the north end of the Doggy Extension No. 1 Claim, and to explore other tungsten ore showings in the silicified limestone formation at three other areas in the Doggy and Doggy Extension claims.

Work in the Doggy Extension claim will be done by tractor-dozer trenching to clear away the loose material at the foot of the ridge, in preparation for trench work by drilling and blasting at the same trenches. Dozing will be done in three trenches about 100 feet apart, each trench to be about 150 feet long and to bed rock which should be about 10 to 15 feet fromthe present surface. Eight shifts with the dozer should do that work.

Other dozer work will be to clear loose surface material away from 10 other spots on the vein where drilling and blasting of the bed rock is to be done to make small trenches and test pits. About two shifts with the dozer should do all such clearing work. The dozer will be used to make crude roads to the various areas where the compressor will be used for drilling and blasting. Road work will require three days with the dozer and 4 days for oneminer and one helper drilling and blasting. Nine drilling and blasting trenches in the Doggy quartz vein, about 50 to 100 feet apart, are planned. Eleven other trenches are planned in the project in the other areas of ore showings. Each of those 20 trenches is to be 3 to 5 feet deep into bedrock and about 6 to 15 feet long across the strike of the vein showings. The length of the trenches being dependent upon the width of the tungsten mineralization. About 20 shifts each for a miner and a helper will be used in this work.

A shaft is to be sunk 100 feet deep on the Doggy quartz vein near the south end of the claim at the place designated on the property map. A total of 200 feet of lateral workings (drifts) is to be run from the shaft along the vein near the bottom of the proposed shaft. A total of 100 shifts each for two miners

Applicant: Panamint Tungsten Mines
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351 California Street
San Francisco 4, California

Project D: (Cont'd)

and one helper-hoistman will be used in the shaft sinking and drifting work. The total number of shifts for the entire Project D will be 13 days for the dozer operator, 224 miner shifts, and 124 miner's helper shifts. Total elapsed time should be approximately 5 months.

Project E:

Purpose of this project is to explore for lateral extension of tungsten ore between two ore showings known at the surface in the Windy Gap-1 and 2 claims, and to explore for extension on the same northerly-southerly strike beyond the two showings. Exploration to be done by trenching with the tractor-dozer to clear away loose surface material on the hill slopes and in the valley wash area, and by drilling and blasting into bed rock at the bottom of the dozer trenches. Work to be done in 10 trenches from 50 to 100 feet long at 50 to 100 feet apart, and 2 to 15 feet deep by dozing, and 3 to 5 feet deep by drilling and blasting in the bottoms of the dozer trenches.

Total time for tractor-dozer work will be 10 days for the trenching, and 3 days for road building. Other manpower requirements will be 27 days each for one miner and one helper on the trenching, and 3 days each on road building. Total elapsed time will be 1.5 months.

Project F:

Purpose of this project is to explore for the southerly extension of the ore zone exposed in the Junction claim along the fault zone or near the contact zone. Exploration to be done in the Frederick claim by 4 dozer cuts in the alluvium covered slopes and valley, and by drilling and blasting in the bottoms of the dozer trenches on any ore indications discovered. The trenches are to be 4 in number, varying in length from 150 to 300 feet, in depth from 5 to 15 feet by dozer work and 3 to 5 feet into bedrock at the bottoms of the dozer trenches where ore indications may be discovered by the proposed dozer work. Width of the dozer trenches is to be 8 to 12 feet, width of the drilling and blasting trenches to be 3 to 5 feet. Total combined length of all the dozer trenches is to be 800 feet. No road construction is required on this project. Dozer operating time will be about 6 days, drilling and blasting time for one miner and one helper will be about 20 days. Elapsed time for the project will be about one month.

Supplemental information - Form MF-103 - Sheet 10

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

	Totals		Project A		Project B		Project C		Project D		Project E		Project F	
	Shifts	$	Shifts	$	Shifts	$	Shifts	$	Shifts	$	Shifts	$	Shifts	$
6.(b) Wages, Salaries, Fees.														
* Miners @ $2.00/hr.	725	$12,564.28	183	$3,171.39	42	$ 727.86	226	$3,916.58	224	$3,881.92	30	$ 519.93	20	$ 346.60
* Laborers (helpers @ $1.75/hr.	435	6,598.95	93	1,410.81	42	637.14	126	1,911.42	124	1,881.08	30	455.10	20	303.40
* Tractor, Truck, Compressor Operator @ $2.25/hr.	200	3,900.00	55	1,072.50	10	195.00	55	1,072.50	55	1,072.50	15	292.50	10	195.00
Superintendent		5,600.00		1,400.00		800.00		1,400.00		1,400.00		300.00		300.00
Consulting Geologist		3,000.00		700.00		400.00		700.00		700.00		300.00		200.00
		31,663.23		7,754.70		2,760.00		9,000.50		8,935.50		1,867.53		1,345.00
6.(c) Supplies.														
Explosives		7,300.00		1,600.00		900.00		1,900.00		1,800.00		600.00		500.00
Fuel: Tractor-Dozer, Diesel		400.00		100.00		30.00		100.00		100.00		40.00		30.00
Compressors, Gasoline		2,000.00		450.00		100.00		550.00		700.00		100.00		100.00
Truck, Gasoline		280.00		80.00		20.00		80.00		80.00		10.00		10.00
Steel and Bits		240.00		60.00		20.00		70.00		70.00		10.00		10.00
Sharpening Wheels (stones)		50.00		12.00		8.00		12.00		12.00		3.00		3.00
6 Picks, 6 Shovels		60.00		10.00		10.00		10.00		10.00		10.00		10.00
2 Wheelbarrows		98.00		40.00		40.00		10.00		8.00		-		-
Batteries for U.V. lights		80.00		20.00		10.00		20.00		20.00		5.00		5.00
Timber: Mine and Ties		850.00		250.00		-		300.00		300.00		-		-
Head Frames		120.00		40.00		-		40.00		40.00		-		-
Ladders		210.00		70.00		-		70.00		70.00		-		-
Pipe Fittings and Wrenches		100.00		30.00		4.00		30.00		30.00		3.00		3.00
		11,788.00		2,762.00		1,142.00		3,192.00		3,240.00		781.00		671.00
6.(d) Equipment.														
Rentals - Operator Owned:														
* D-7 Tractor-Dozer		1,200.00		300.00		90.00		300.00		300.00		120.00		90.00
* 105 Sullivan Compressor		320.00		70.00		20.00		90.00		110.00		15.00		15.00
* GMC Truck		100.00		25.00		15.00		25.00		25.00		5.00		5.00
Purchases:														
2-210 Compressors, Used, Gasoline		7,200.00		2,000.00		400.00		2,100.00		2,200.00		300.00		200.00
2-Copco Rock Drill Machines & Legs		750.00		210.00		40.00		220.00		230.00		30.00		20.00
1-Bit Sharpener		185.00		50.00		10.00		55.00		60.00		5.00		5.00
2" Black Pipe- 1400 ft. @ 50¢		700.00		200.00		50.00		200.00		200.00		25.00		25.00
1" Black Pipe- 1000 ft. @ 25¢		250.00		70.00		20.00		70.00		70.00		10.00		10.00
3-50 ft. lgths 1" Air Hose w/ftngs		150.00		40.00		10.00		40.00		40.00		10.00		10.00
3- " " 3/4" Water " "		120.00		30.00		10.00		30.00		30.00		10.00		10.00

Supplemental information - Form MF-103 - Sheet 11

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

	Totals $	Project A $	Project B $	Project C $	Project D $	Project E $	Project F $
6.(d) Equipment. (Cont'd)							
Rail for 400 ft. Mine Track (plus spikes & fish plates) 2 tons @$180	$ 450.00	$ -	$ -	$ 225.00	$ 225.00	$ -	$ -
* 2- Mine Hoists, Gasoline, w/Cable	2,000.00	600.00	-	700.00	700.00	-	-
* 2- Hoisting Buckets	300.00	100.00	-	100.00	100.00	-	-
* 4- Mine Cars, 18 cu.ft.	500.00	160.00	-	170.00	170.00	-	-
	14,220.00	3,855.00	660.00	4,325.00	4,460.00	530.00	390.00
6.(f) New Buildings, Installations.							
Boarding House - Kitchen, equipped (25% labor)	3,000.00	900.00	150.00	900.00	900.00	90.00	60.00
3 House Trailers	2,400.00	650.00	110.00	750.00	800.00	50.00	40.00
Water Tank, 1000 gal., installed	250.00	75.00	15.00	75.00	75.00	5.00	5.00
	5,650.00	1,625.00	275.00	1,725.00	1,775.00	145.00	105.00
6.(g) Miscellaneous.							
Maintenance:							
Compressor, repairs, etc.	200.00	60.00	10.00	60.00	60.00	5.00	5.00
Tractor-Dozer, repairs, etc.	2,400.00	600.00	180.00	600.00	600.00	240.00	180.00
Truck, repairs, etc.	100.00	25.00	15.00	25.00	25.00	5.00	5.00
Assays	1,100.00	250.00	100.00	300.00	300.00	75.00	75.00
Accounting, San Francisco Office	800.00	210.00	60.00	220.00	220.00	50.00	40.00
DMEA Reports, Preparation	800.00	210.00	60.00	220.00	220.00	50.00	40.00
Compensation Insurance	3,197.74	831.54	259.60	902.33	905.90	172.42	125.95
Liability Insurance	31.97	8.31	2.60	9.02	9.06	1.72	1.26
Payroll Taxes (4.2%)	1,219.97	317.50	99.12	344.53	345.89	64.84	48.09
Boarding House Operating Loss	2,000.00	600.00	100.00	600.00	600.00	50.00	50.00
	11,849.68	3,112.35	886.32	3,280.88	3,285.85	713.98	570.30
6.(h) Contingencies.	3,500.00	1,000.00	300.00	1,000.00	1,000.00	100.00	100.00
Totals	$78,570.91	$20,109.05	$6,023.32	$22,523.38	$22,696.35	$4,037.51	$3,181.30

Supplemental information - Form MF-103 - Sheet 12

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

* Foot Notes:

Item No.

6.(b) Wages, Salaries, Fees: Work will be on a 6 day per week basis. Project and totals figures include overtime.

6.(d) Rentals:

The operator owns 3 pieces of equipment that will be rented to the projects for the time period of the projects, as follows:

A D-7 Caterpillar Tractor, with dozer blade.
Value $9,000. Rental for 8 months $1200.00.

A Sullivan 105 cu. ft./min., gasoline driven air compressor.
Value $2400.00. Rental for 8 months: $320.00.

A GMC truck for hauling water and general use.
Value $600.00. Rental for 8 months: $100.00.

Total rental of the above equipment for the estimated 8 months operation on the projects is $1620.00. Distribution between the 6 projects is shown on the cost estimate sheets.

Purchases:

Purchase cost of two mine hoists with cables, and hoisting buckets, and purchase cost of 4 mine cars for use at the 3 shaft sinking and underground levels exploration projects are distributed between the 3 projects in proportion to the estimated amount of use at each project, not more than two underground operations will be run at one time.

Supplemental information - Form MF-103 - Sheet 13

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Distribution of Labor to Headings

	Project A		Project B		Project C		Project D		Project E		Project F	
	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts
Drifting	50	40M 20H	-	-	200	100M 50H	200	100M 50H	-	-	-	-
Shafts	100	100M 50H	-	-	100	100M 50H	100	100M 50H	-	-	-	-
Dozer Trenching	1,000	3D	200	2D	1,800	17D	750	10D	750	10D	800	6D
Trenching	1,320	40M 20H	1,250	40M 40H	1,400	26M 26H	500	20M 20H	500	27M 27H	500	20M 20H
Roads	1,500		800		600		1,000		1,200		-	
Dozer		8D		2D		1D		3D		3D		-
Drill and Blast		3M 3H		2M 2H		- -		4M 4H		3M 3H		- -
Truck Driver-Compressor Operator		44D		6D		37D		42D		2D		4D
Totals		183M 93H 55D		42M 42H 10D		226M 126H 55D		224M 124H 55D		30M 30H 15D		20M 20H 10D

Notes: M - At Miners Wage Rate
H - At Helpers Wage Rate
D - At Tractor-Truck-Compressor Operator Wage Rate

Supplemental information - Form MF-103 - Sheet 13

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Distribution of Labor to Headings

	Project A		Project B		Project C		Project D		Project E		Project F	
	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts
Drifting	50	40M 20H	-	-	200	100M 50H	200	100M 50H	-	-	-	-
Shafts	100	100M 50H	-	-	100	100M 50H	100	100M 50H	-	-	-	-
Dozer Trenching	1,000	3D	200	2D	1,800	17D	750	10D	750	10D	800	6D
Trenching	1,320	40M 20H	1,250	40M 40H	1,400	26M 26H	500	20M 20H	500	27M 27H	500	20M 20H
Roads	1,500		800		600		1,000		1,200		-	
Dozer		8D		2D		1D		3D		3D		-
Drill and Blast		3M 3H		2M 2H		- -		4M 4H		3M 3H		- -
Truck Driver-Compressor Operator		44D		6D		37D		42D		2D		4D
Totals		183M 93H 55D		42M 42H 10D		226M 126H 55D		224M 124H 55D		30M 30H 15D		20M 20H 10D

Notes: M - At Miners Wage Rate
H - At Helpers Wage Rate
D - At Tractor-Truck-Compressor Operator Wage Rate

DEC 18 1952

Mr. Walter W. Johnson
Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Re: Docket No. DMeA 2807 - Tungsten
Panamint Tungsten Mines
Inyo County, California

Dear Mr. Johnson:

Your application for assistance in exploring the referenced property near Skidoo in Inyo County, California, has been reviewed by the Iron and Ferro-Alloy Division of the Defense Minerals Exploration Administration and has been referred to Mr. L. C. Miller, Executive Officer, DMeA Field Team, Region III, 1012 Flood Building, 870 Market Street, San Francisco 2, California, for a field examination.

The Regional Office will contact you at an early date in regard to the examination of your property. Any assistance that you can render the field team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

FARutledge:ls 12/17/52

CC: Docket
Admn. Read. File
Field Team, Reg. 3
F. A. Rutledge
H. C. Selfridge
D. M. Lemmon, USGS
R. W. Geehan, USBM

DEC 18 1952

Mr. H.C. Miller
Executive Officer, DMaA Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMMA 2807 - Tungsten
Emmamint Tungsten Mines
Inyo County, California

Dear Mr. Miller:

Reference is made to the subject docket which is being referred to your office for a field examination.

The application does not contain the cost data necessary to prepare an exploration contract. In addition, two claims, the Junction and Blue Stone Fraction, are not included in the exploration program because the applicant plans to start production of tungsten from the deposits on these claims.

The examining field team will need to discuss the program of exploration with the operators and obtain more definite information on the location, type, and amount of work proposed for each area. All of the data required for the preparation of Exhibit "A" of a contract should be obtained during the examination and representative samples taken.

A memorandum from Mr. M.D. Crittenden, U. S. Geological Survey, is enclosed for your information.

Sincerely yours,

(signed) FRANK E. JOHNSON
Chairman, Operating Committee

Enclosures

Approved:

J. E. Hedges
Member, Bureau of Mines

A. R. Kinkel, Jr.
Member, Geological Survey

Copy to: Docket
Admn. Read. file
Field Team, Reg. 3
Oper. Committee
F. A. Rutledge
G. C. Selfridge
D. M. Lemmon, USGS
R. W. Geehan, USBM

FARutledge/ls 12/17/52

IN REPLY REFER TO:

G-MD-CF

400

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

December 15, 1952

Memorandum

To: G. C. Selfridge

From: K. D. Crittenden

Subject: DMEA 2807 (Tungsten)
Panamint Tungsten Mines
Room 910, 351 California Street
San Francisco, California

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DEC 1952

The Property

The applicants are lessee-operators of a group of 31 claims known as the Panamint Tungsten Mines or Greene Scheelite Mines, in Inyo County, California. The property is about 4 miles south of the abandoned mining camp of Skidoo, and is less than a mile distant (but apparently entirely separate) from the Red Rock claims which were the subject of DMA 2194X.

The Proposal

The applicants propose to spend a total of $60,000 to do extensive surface prospecting and a smaller amount of underground exploration on 6 claims on which there are either surface showings in prospect pits, or favorable geological indications. In addition, they propose to develop the most promising claims without assistance.

The details of the work to be done in the 6 areas are given on pp. 5 to 8 of the report by Francis H. Frederick that is attached to the docket. Some of the prospecting suggested seems like rather a long shot, and may be unsuitable for assistance. Other projects should undoubtedly be prepared in two stages, if at all.

Geology and Recommendation

The property to be explored is in an area of faulted limestones cut by numerous silicified zones or quartz veins containing scheelite.

The Geological Survey has no information about these claims, and suggests the docket be referred to the field.

M. D. Crittenden

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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-2807
Metal or Mineral
Date Received 12/10/52
Estimated Cost
Participation (Government %)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 10 1952

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: Walter W. Johnson, Mgr., Panamint Tungsten Mines, Room 910, 351 California Street, San Francisco 4, California, a partnership. Partners: Walter W. Johnson, George J. O'Brien, William M. Maxfield. (Addresses on attached sheet, (item 1.d)

(*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 Thirty-one mining claims held by a lease in a new tungsten district in Inyo County, California, in the Panamint Range of mountains. Details given on attached sheet, Item 3.(a).

(*b*) State any mine name by which the property is known. Panamint Tungsten Mines

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Lessee.

(*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. Herewith, item 3.(d)

(*e*) If you own the land, describe any liens or encumbrances on it Not owned.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. All claims are unpatented, see attached sheet, item 3.(a).

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 Tungsten in the mineral scheelite.

(*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 10 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)?

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

[X] Money [X] 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 December 9, 1952

Panamint Tungsten Mines
(Applicant)

By Walter W. Johnson
Walter W. Johnson, Mgr. & Partner

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

Supplemental information - Form MF-103 - Sheet 1

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Item No.

1. Applicant is a partnership.

The names and addresses of all the partners are as follows:

Walter W. Johnson, 910 Balfour Building, 351 California Street, San Francisco 4, California.

William M. Maxfield, 535 Russ Building, San Francisco 4, California.

George J. O'Brien, c/o Executive Offices, Standard Oil Co. of California, West Olympic Blvd., Los Angeles, California.

3.a. Thirty-one mining claims are held by a lease from the owners who hold the claims by location. The claims are in the Death Valley National Monument in the Panamint Range of mountains, Inyo County, California, about 4 miles by graded road, toward the old mining camp of Skidoo, from the paved road running between Wildrose Station and Stovepipe Wells. The following list of claims is the complete list of claims held at the present time. By the time this application is processed there may be additional claims held but not necessarily a part of this application. The claims in the following list marked out by underscoring are not to be included in the exploration contract.

Inyo County Official Records

Claim	Book No.	Page No.
Blue Stone Fraction	65	448
Junction	65	181
Blue Stone	65	205
Blue Stone Extension	65	447
Bond Street	65	133
Bond Street Extension	65	185
Bond Street Extension #1	65	207
Doggy	65	135
Doggy Extension	65	183
Doggy Extension #1	65	203
George D	65	449
Grover K.	65	451
Steep Hill	64	579
Walter J.	65	453
White Star No. 1	65	103
White Star No. 2	65	105

Supplemental information - Form MF-103 - Sheet 2

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Inyo County Official Records (Continued)

Claim	Book No.	Page No.
Bond Street Fraction	to be recorded	
Bosky	" " "	
Boxer	" " "	
David	" " "	
Douglas	" " "	
Frederick	" " "	
Kitty	" " "	
Long Pull	" " "	
Milicent	" " "	
Molly	" " "	
Steep Hill No. 1	" " "	
William M.	" " "	
Windy Gap No. 1	" " "	
Windy Gap No. 2	" " "	
Winnie M.	" " "	

Item No.

3.(d). See attached white photostats of lease agreement.

4.(a). The mine area is a new tungsten district not previously explored for tungsten. A new camp is now being established by the applicant at the property. A limited amount of surface work has been done, mostly amounting to location work of the mining claims. A few of the claims have been open cut additionally along ore zones by means of drilling and blasting. There has been no production from the property. Facilities for mining and exploration are being established now. A portable compressor is at the property, a D-7 Caterpillar tractor dozer has been ordered and is to be delivered early in December, 1952. Two Company owned trailer houses are ordered for early December delivery at the mine, and cabins will be constructed as needed.

(b). There has been no production from the property held. Ore reserves are indicated and inferred only, there is no knowledge of depth of ore in the area. The deepest workings on the property is 15 feet below surface. Assays of ore exposed in the various cuts range from 0.2%WO_3 to 14%WO_3. Estimated grade of possible ore bodies to be subject of exploration contract range from 0.4%WO_3 to 1.0%WO_3 for open cut mining at widths of 6 to 30 feet. Lengths and depths of those ore areas are unknown and are to be explored by the work proposed in this application.

The property and workings are fully and easily accessible for complete examination. Snow does fall in the area but it is rare, and it does not lie on the ground for more than two or three days if it should snow. Elevation is 5,100 feet in an arid region.

Supplemental information - Form MF-103 - Sheet 3

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Item No.

4.(c). Geologic features and reasons for wishing to explore are covered in the separate report by our consulting geologist, Francis H. Frederick. Report attached to this application. Property map showing geology and project areas is attached to the report.

(d). Roads to the property are excellent. Oiled road to within 4 miles of the property. No steep grades. Nearest convenient shipping and supply point is Argus or Trona, 56 and 57 miles, respectively, southerly in the northwest corner of San Bernardino County. Residence points are not conveniently located and are being established at the property.

(e). Manpower is available for the work planned. Power will be diesel and gasoline power, fuel to be hauled from supply points.

Water is currently and permanently available from Emigrant Springs, 10 miles by good road from the mine camp. Water will be hauled by tank truck and used from storage tanks. Water for possible future milling operations may be piped in from a higher elevation source 18 miles distant from the mine area. Small scale milling may be done at custom mills from 15 to 170 miles distant, depending upon the grade of ore and size of ore bodies developed.

5.(a). Exploration will be for tungsten ore which is present as the mineral scheelite.

(b). Proposed work is described in the attached geological report by Francis H. Frederick. Projects A to F inclusive. A property map is submitted with that report, showing the general geology andthe location of the projects.

(d). The applicant company is a partnership, the operation of which is under the management of Walter W. Johnson, one of the three partners. Walter W. Johnson is an experienced placer and lode mine manager and administrator. He is now, and has for many years, been head of the Walter W. Johnson Company of San Francisco which has successfully operated mining properties in the western United States, Canada, and Alaska. Mr. William M. Maxfield, a partner, is vice president in charge of operations of the Original Sixteen to One Mine, Inc., a successful gold mine operation at Alleghany, California. The superintendent of the applicant company, Panamint Tungsten Mines, is Mr. George Hellerich, graduate of a recognized mining college, and experienced in responsible operation of lode, placer, and dredge operation for about 30 years. The consulting geologist, Francis H. Frederick, San Francisco, California has been steadily engaged in mining geological work since 1930 in the western United States and has had considerable experience in scheelite-tungsten mining.

FRANCIS H. FREDERICK
MINING GEOLOGIST

503 MARKET STREET
SAN FRANCISCO 5, CALIFORNIA
PHONE SUTTER 1-7982

RESIDENCE:
2715 STUART STREET
BERKELEY 5, CALIFORNIA
PHONE ASHBERRY 3-7651

December 1, 1952

Mr. Walter W. Johnson
Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Dear Mr. Johnson:

This letter is a summary report of the information available, and of my recommendations in connection with operation of Panamint Tungsten Mines near Skidoo, Inyo County, California. It is proposed that some of the exploratory work be done with Government assistance in the form of a DMEA loan for 75% of the costs for certain projects. One area, the Junction and Blue Stone Fraction claims, is expected to be productive as soon as camp and operating facilities are established, and is therefore not considered for a DMEA project.

LOCATION, ROADS, and FACILITIES

The property is located in the Panamint Range of mountains on the west rim of Death Valley at about midway between the north and south limits of Death Valley National Monument. It is in the Monument in Inyo County, California. The center of the property is reported to be at West Longitude 117° 06' 02.5" and North Latitude 36° 24' 21.7" as indicated by a notation at a monument said to have been established by the USGS. Elevations on the property range from 5100 to 6,000 feet above sea level. The old gold camp of Skidoo is 3 or 4 miles northerly by road from the property. The location of Skidoo, Emigrant Spring, Wildrose Spring (now Wildrose Station), and other pertinent information are shown on the USGS topographic sheet, Ballarat (1911-1913). Good graded road to Skidoo passes through the property at 4 miles from paved road. The paved road runs northerly and southerly and connects in both directions with State and Federal highways. Northerly, at 15 miles from the mine, it connects with State highway 190 running between U.S. Highway 395 to the west and Death Valley, Death Valley Junction in California, and U.S. Highway 95 in Nevada to the east. Southerly the paved road runs to Wildrose Station at 16 miles from the property, and thence to Trona and Argus in the northwest part of San Bernardino County at 56 and 57 miles, respectively, from the property. Trona and Argus are currently the most convenient mail, telephone, telegraph, supply, and shipping points.

There is no water at the property. Water for all uses is available at Emigrant Springs about 10 miles distant by road. Work at the mine, to date, has been done by hauling water in 50 gallon drums. Water hauling and storage facilities at the mine are being improved. Abundant water supply

can be piped to the property by gravity from a supply at about 18 miles distant and about 4,000 feet higher in elevation. It is estimated that a 4 inch line installed to carry water to the mine from that source might cost about $100,000.

At the present time there are three trailer houses and one small tent on the property. Other housing facilities are to be constructed, and possibly some additional trailer houses will be moved in. A small portable compressor, a flat-bed truck, and a D-7 Caterpillar tractor-dozer owned by the Company are available for performing work on the property.

HISTORY, PRODUCTION, MINE WORKINGS

The property is now a total of 31 claims, totaling about 590 acres, held by location by Thad C. and Jo L. Greene and leased from them by your Company. The area is a new tungsten district and most or all of the claims held for tungsten ore were located in 1952. The Panamint Tungsten Mines is a new name for this area and was adopted in November, 1952. Earlier this year the property was referred to as Greene's mine.

There has been no tungsten production to date from the district. There is a stock pile of about 50 tons of ore containing about 2% WO_3 at a small open cut on one of the claims. Assays of samples from the pile range from 1.95% to 14.0% WO_3.

The workings on the 31 claims are currently limited to small open cuts made by drilling and blasting and mucking out by hand shovels, and a few shafts about 6 to 8 feet deep. There is a total of 16 cuts and small shafts, all showing tungsten ore varying in content from 0.3% to 14.0% WO_3.

A complete list of the claim names is given in Item 3.(a). of the DMEA Application Form MF-103 attached to this report. The claims are all in one block and cover a north-south axis of about 6,000 feet length, and east-west axis of about 9,000 feet. A property map submitted with this report shows all of the claims to date.

GEOLOGY

The tungsten ore is scheelite in quartz veins, quartz seams, and in silicified zones and silica cemented limestone breccias, all in limestone formations. The limestone formations of the area vary considerably in bedding characteristics, color, and dip. Some of the limestone beds are interbedded with shale and quartzite and vary from 3 to 20 feet thick. Other limestone beds are more massive and may be several hundred feet thick without interruption by interbeds of other material. In the northern part of the property area the bedding planes dip southerly at 10 to 20 degrees. In the southerly part of the property there appears to be folding and buckling of the beds near faults and near possible intrusives of aplite and granite. The important mineralization observed to date has been in the general vicinity of the faulted and buckled areas. In the southwest part of the property there is a mass of granite, apparently intrusive into a quartzite and quartz conglomerate formation. Limestone is observed to be in a low angle probable bedding contact on top of the quartzite, and

also in contact with both the granite and quartzite formation at a steep dipping fault. The most important mineralization observed to this time is in a silicious zone in the limestone within a few hundred feet of the fault. That fault appears to strike about N 10° W and is named the Junction Fault as it appears to be importantly related to the high grade ore known to exist in the Junction Claim.

It is possible that the low angle dipping sedimentary formations in the northeast part of the property are much younger in age than the sedimentary formations in the south and west parts where the dips are steeper and the formations may be thicker bedded. In the southeast area of the property there is a rather extensive exposure of schists and phyllites which may overlie the ore bearing limestones to the west along the Junction Fault. Apparently the steep dipping schist formation is separated from the low angle limestones to the north by an E-W fault in the valley between the areas. This E-W fault is termed the East Valley Fault as it apparently runs thru the approximate center line of the east valley wash and then on east thru the Steep Hill Claims. That fault may be closely related to the brecciation, silicification, and mineralization in the Steep Hill and Walter J. Claims.

Most of the mineralization in the area is in small quartz seams or breccia filling in the limestone with the scheelite grain size ranging from 100 mesh to 1/4 inch diameter. One notable exception is the mineralization in the Doggy claim where the scheelite is in a quartz vein 6 feet wide and dipping steeply westerly. The vein is exposed in a number of places thruout the full length of the Doggy claim although it appears to be interrupted and non-existent in a few places along its strike. Scheelite occurs in it as disseminated grains in certain bands in the quartz vein. Scheelite grains are up to 1/4 inch in diameter. A sample of the full 6 feet of vein at one place assayed 0.65% WO_3. In the Bond Street claim, and not far from the Doggy vein, are two narrow veins, 2 inches and 4 inches wide, striking almost at right angle to the Doggy vein and containing from 10 to 20% WO_3 in coarse scheelite crystals.

There is none of the usual tactite type of ore at the property and there appears to be no molybdenum, either as molybdenite or in the scheelite. The scheelite fluoresces blue-white. A few of the silicified breccia spots containing ore are rusty colored and it is possible that work at depth may show some pyrite. It is believed that the pyrite or iron content will not be serious for milling or custom treatment because of the slight amount of iron stain observed.

There is no substantial evidence suggesting the possible depth extent or depth limits of tungsten ore in the district. Certain work is here proposed to attempt to determine the depth possibilities in certain areas, to attempt to show substantial ore reserves and, at the same time, to gain some general knowledge about the depth possibilities of the area as a whole.

The Junction and Blue Stone Fraction claims show high grade ore and additional high grade ore possibilities so it is proposed that the production work be started in those two claims and the ore so produced be

shipped to custom mills or sold to U. S. Vanadium Company at Pine Creek, near Bishop, California. Exploration work should be carried on at 6 areas of important ore showings to attempt to prove a substantial reserve of ore to justify piping water to the property and installing a mill at the property.

It is currently estimated that exploration, development and mine plant costs might amount to $75,000 or $100,000 by the time sufficient ore is measureable to justify spending an additional $200,000 for water and mill at the property. It is believed that 30,000 tons of 0.6 to 0.8% WO_3 ore, or 40,000 tons of 0.4 to 0.6% WO_3 ore would be justification for a complete operation at the property. Study of the property indicates that possibilities are better than the above requirements. Indications are that some shipping grade ore, for treatment at a custom mill or for sale as crude ore, will be found in the course of the exploratory work. Ore containing as little as 0.8% WO_3 would be profitable if mined by open cut methods and treated at a possible custom mill within a $5.00 truck haul. The Company may choose to build a small mill near water at one of several mill sites where water can be made available. Total cost of water and a mill at such a site would be about $100,000. Trucking cost to such a possible mill would be about $2.00 per ton. Under such conditions, ore containing as low as 0.4% WO_3 could be profitably mined and milled.

PROPOSED MINING AND EXPLORATION

OPERATORS PRODUCTION PROJECT

Production of shipping grade ore should be undertaken at the Junction claim open cuts. At the present time there is a stock pile of about 50 tons that contains not less than 2% WO_3, plus an additional pile of about 20 tons containing about 1% WO_3. That 70 tons has come from two shallow open cuts. One cut is 12 feet wide x 18 feet long, the other cut is 6 feet wide x 20 feet long. Both cuts are about 4 feet deep at the centers tapering to the edges. Ore widths represented for the ore grade estimated is 8 and 4 feet respectively. Samples of the ore piles from the open cuts at three stages were as follows: 14.3%, 8.7%, 1.95% WO_3. It is not possible to accurately sample the coarse ore piles at this time as no crushing equipment is available at the property. Judging by U.V. light the 70 tons appears to average better than 2%. Work in the Junction claim should be an extension of the surface open cuts along the ore length and across the width for the full limit of the ore grade material as it is found by the proposed work. Scheelite shows for about 800 feet of distance parallel to the fault zone in the Junction and Blue Stone Fraction claims and over a general width of 50 to 100 feet. Drilling and blasting should be done at all places where scheelite shows by U.V. light because experience at the property shows that the scheelite is often better just below the weathered surface than right at the surface. The best areas found after preliminary clearing with the dozer and preliminary drilling and blasting should be made into open cuts for small scale production. The fissuring, quartz seams, and mineralized breccia in the limestone appears to strike in two directions - parallel to the fault and also at right angle to it. Some attempt should be made to determine the strike and dip of the best ore zones. The open cut work should later be concentrated at one place in an attempt to learn a little about the vertical

extent or behaviour of the ore. None of the work in these two claims, Junction and Blue Stone Fraction, is to be a subject of the possible DMEA contract, by request of the owners of the claims.

PROJECT A

The Walter J. and George D. claims lie side by side just north of the inferred East Valley Fault and have important ore showings. The areas outlined in green on the 400 scale property map submitted with this report show the areas of interest for the proposed work.

The George D. claim has not been sampled but by fluorescent light shows interesting amounts of scheelite in vertical silica seams cutting across the low angle bedding planes of the limestone. A length of about 500 feet, in one particular bed in the limestone, shows scheelite of possible ore grade and should be explored by a series of small open cuts. Work can be done by jackhammer drilling and blasting. Size of ore body to be found by exploration could be anywhere from 1000 tons to 20,000 tons of low grade ore. Proposed work is preliminary in nature as not enough is known in this claim area to warrant proposal of a large program. Mineralization might extend easterly thru the ridge to the Walter J. claim which shows less tonnage but higher grade ore. Work in the George D. claim project might take 20 days of actual work, plus 2 days by the dozer for road work and to move the compressor to convenient points. Total cost will be about $1,000.00 not including geology and supervision.

The Walter J. claim, on the opposite side of the ridge from the proposed work in the George D., shows some high grade ore at a shallow open cut in the steep side hill. The mineralization appears to be in silicious seams at a fault, or fault zone, or fissure zone crossing. The silicious seams strike west into the ridge toward the George D. showing. The fissure zone strikes almost due north. Two samples of ore from the pile obtained from the small, shallow open cut assayed 3.42% and 4.02% WO_3. The high grade spot represented by the samples is about 5 x 5 feet in plan. The grade of the ore is less away from the 5 x 5 spot but ore grade material shows east and west, and north and south in the veins and fissures near the high grade spot. Work proposed is to attempt to extend the area of known ore at the surface by a series of open cuts and then to sink a shaft about 100 feet on the best ore found, and then to drift about 25 feet each way in two directions on the best ore found in the shaft near its proposed bottom. If the ore showing stops in the shaft before 100 feet depth is reached then a level should be run at some higher point to attempt to find or follow the ore there. Preliminary open cut work can be started by the D-7 Caterpillar dozer in certain areas where bed-rock is covered. If important mineralization extends for several hundred feet along either fissure system - either down the slope to the east, or down the slope to the south - then it may be best to run an exploratory adit along the ore showing instead of sinking a shaft. The depth gained would not be as great but the length of ore exposed could be greater and the information would be less expensive and could be just as useful. Estimated total direct cost of Walter J. project: $10,000.00. Total direct cost for Project A: $11,000.00 plus supervision and geology and engineering. Estimated operating time: 5 months.

PROJECT B

The Steep Hill claim at the extreme east end of the property contains an area of silicious seams in limestone between two faults or fissures about 100 feet apart. The quartz seams run about N 30° E up and down the steep hill and are at a considerable strike angle to the possible bounding faults which strike about east and west. The mineralized area is about 100 feet wide and about 400 feet long. It has been opened up by 5 small open cuts from 6 to 8 feet wide and 10 to 15 feet long, each along different groups of the cross seams. Four samples of the material moved from the open cuts, representing the full widths of the 6 feet and 8 feet wide cuts, assayed as follows: 0.34%, 0.67%, 0.77%, and 0.84% WO_3. The present workings expose about 20% of a total length of 80 feet along the mineralized zone between the faults, and 10 to 15 feet of width of a possible 50 or 100 feet width of ore. In order to show a substantial ore possibility in this claim a large area will have to be opened up by means of many shallow cuts in the 100 by 400 feet block. Then a number of cuts should be run well into the steep hillside to establish a high vertical face to show some depth extent. Some of the open cuts might show ore of high enough grade for treatment at a custom mill. If the entire mineralized area proves to be low grade, about 0.4% WO_3, and even if the depth is only 25 or 50 feet there would be 100,000 or 200,000 tons of ore that could be mined on a low cost open cut basis and profitably treated at a possible local mill constructed for such a purpose. Present indications are that a minimum of 10,000 tons of low grade ore will be found here. Estimated direct cost of Project B: $4,000.00. Total time for completion of project: 2 months.

PROJECT C

The inferred East Valley Fault and the inferred Junction Fault should join somewhere in an area just north of the Blue Stone claim where there are some ore showings. The intersection may be in the Doggy Extension No. 1 claim. Some of the ore exposures in the Blue Stone claim are a northerly extension along the inferred Junction Fault zone of the mineralization in the Blue Stone Fraction and Junction claims. It is quite possible that the ore is better under the valley fill where it is believed the two faults join. At about 700 feet south of the possible intersection area the Blue Stone claim shows ore in silicious lime breccia. At about 700 feet north of the possible intersection area the Doggy quartz-scheelite ore vein probably intersects the Junction fault zone. It is believed that the fault intersection area may be highly brecciated, silicified, and mineralized. Exploration should be started with the tractor-dozer because the area is in a basin and is covered with desert valley alluvium. Bedrock might be about 25 feet deep. If it can be exposed by dozer work and if it is that deep it may become necessary to do the bed rock exploration by shaft sinking or by churn drilling or diamond drill core drilling. Lack of water is a problem in the area and drilling may be difficult and costly. If bed rock is too deep for dozer work at the site selected then work can be done both north and south of that site closer to the hills and closer to the bedrock. Project C also includes exploration along the Junction fault and contact zone in the Blue Stone claim. Work can start there, right in the limestone bed rock and proceed northerly into the valley filling until the use of the dozer there becomes undesirable.

There are two other important areas of scheelite exposed in bedrock in the Blue Stone claim 500 and 900 feet east of the Junction fault zone. Part of the work of Project C should be to enlarge the present open cuts at those places and attempt to extend the size of the known ore areas. The main cut in the Blue Stone claims is about 8 feet wide and 30 feet long. A four feet wide band of ore in the center of the length of the cut looks very good. A sample of all of the ore from the north side of the cut, representing a band 4 feet wide by about 30 feet long, assayed 0.70% WO_3. A sample of the waste pile from the same cut, representing the south band of 4 feet width by 30 feet length, assayed 0.2% WO_3. This cut lies in a flat area near the local valley floor and can only be fully explored by means of a shaft and lateral workings from the shaft. After the general area has been prospected by additional open cuts then a shaft should be sunk 50 or 100 feet at one of the best ore areas. Then a level should be run at the bottom of the shaft, on ore bands, for a total lateral distance of 200 feet if the ore showings at that time will justify that amount of work.

Total estimated direct cost of Project C: $15,000.00
Estimated time: 4 months.

PROJECT D

There are two characters of ore in this project. The Doggy claim contains a quartz vein, 6 feet wide, dipping steeply westerly and showing scheelite mineralization thruout its length of over 1,000 feet. The Doggy and the Doggy Extension claims both show, as well, the usual ore of the district - silicious breccia and seams in the limestone formations. All areas showing scheelite in the claim, in the quartz vein and in the breccia and limestone, should be drilled and blasted by trenching in bed rock or by making a series of open cuts. Dozer work at the south end of the claim should be used to expose as much length as possible along the Doggy quartz vein under the valley fill. A shaft should be sunk somewhere near the south end of the exposed vein in one of the best showings of ore. The shaft should be 100 feet deep, and then at least 200 feet of lateral workings should be run near the bottom of the shaft if the ore indications are then as good as they are now at the surface and in the present open cuts and shallow shafts. A sample taken from the dump at one of the 6 feet deep shafts across the full 6 feet width of the vein assayed 0.65% WO_3. The south part of the vein exposed at the surface appears to be better than the north part so it is proposed that the vein be explored more thoroughly at the south part than at the north. Present indications are that the shaft should be placed as far south as operating conditions permit.

Estimated cost of Project D: $15,000.00
Estimated time of operation: 4 months

PROJECT E

There are some showings in the Windy Gap-1 and Windy Gap-2 claims that should be investigated further. No samples have been taken there but by U.V. light it is seen that mineralization could lead to ore discoveries. The limestone of the area is close to contact with the quartzite to the west which may underlie the limestone as well as appearing at the surface

west of the limestone. A series of open cuts should be made in the limestone where scheelite shows. If a substantial showing of ore is found it should be explored further by a large open cut. The southerly part of Windy Gap-1, where the bedrock is covered by valley fill, should be explored and opened up for exploration by means of the Caterpillar-dozer.

Estimated direct cost of Project E: $1,000.00
Estimated operating time: One month

PROJECT F

A new claim, the Frederick, has been located just south of the Junction claim and it should be explored by dozer work along the Junction ore zone extended southerly. If good ore showings are exposed by the dozer work then a shaft or shallow pits will probably have to be made and used to explore the area as it is relatively level and largely covered by valley fill or a thin layer of desert alluvium.

Estimated direct cost of Project F: $1,000.00
Estimated operating time: One month

Summary of Projects

The total time of the exploration projects, if only one project were carried on at a time, would be 17 months. If the three main time consuming projects are carried on at the same time and the other smaller jobs were done as convenient the total time would be reduced to 6 months and the crew would have to be a total of 11 workmen, one dozer operator, and one superintendent. A smaller crew composed of 6 men (miners and muckers), a tractor operator, and a superintendent could do all the proposed work in 10 months. There is probably sufficient margin in the above estimates to allow some time with the same crew for some production work at the Junction area, especially so if the projects are timed to run for 12 months. It will be necessary to install living quarters of some kind for the anticipated crew.

The total estimated direct cost for the 6 DMEA projects is $47,000 not including supervision and consulting geological work. Supervision, geology, housing facilities, purchase or rental of equipment, and contingencies could amount to a total additional $13,000.00. The DMEA application should therefore show a total estimated project cost of about $60,000.00. The DMEA loan would then amount to 75% of that, or $45,000, if all projects were approved as is.

Respectfully submitted,

Francis H. Frederick

Francis H. Frederick

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

Department of the Interior
Defense Minerals Administration
RECEIVED
SEP 25 1953

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

September 25, 1953

Memorandum

To: C. O. Mittendorf, Administrator, DMEA, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2807 (Tungsten)
Panamint Tungsten Mines
Bluestone, et al. claims
Inyo County, California

In many cases when a DMEA application is not approved, the applicant gets sore and leaves no stone unturned to broadcast that our engineers and geologists do not know their business and should not be on the Government payroll.

It is gratifying, therefore, to be able to report that on September 23 Mr. Walter W. Johnson, Manager, Panamint Tungsten Mines, called me on the phone to tell me that he had been planning for some time to phone me that insofar as his property was concerned, our engineers and geologists were right and their property was not worth Government help.

Mr. Johnson said that the ore was present only in "bunches" and did not go down more than 10 feet. His company spent $40,000.00 on the property and were able to hand-sort a shipment of only 45 tons. This shipment ran 1.8 per cent WO_3 and was treated in the Getchell mill with not too good results.

Copies of this memorandum are going to E. H. Bailey and to A. C. Johnson so they may let Geologists Dean Rinehart and Don Ross, and Engineers Russell R. Trengove and Frank J. Wiebelt know how right they were in not recommending a DMEA loan on this property.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

FILE COPY
SURNAME:

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

Martin
Selfridge
Kirkham
Whittenberg

AIR MAIL

Mr. H. C. Miller, Executive Officer
DMEA Field Team, Region III
1012 Flood Building, 870 Market Street
San Francisco 2, California

APR 2 1953

Re: Docket No. DMEA 2807 (Tungsten)
Panamint Tungsten Mines
Bluestone, et al. claims
Inyo County, California

J.C. 4-1-53

Dear Mr. Miller:

This acknowledges receipt of your letter of March 26, 1953, advising that the subject applicants have learned from some source that your report on the Panamint tungsten property was not favorable, that they are anticipating their request for a loan would be denied, and that they have asked you to request us to defer final decision on the application until supplemental information can be supplied.

Our denial had already been mailed under date of March 27 when your above-mentioned letter reached us. As a matter of record, after the recommendation for denial had been prepared, a Mr. Jackson, Washington representative of the applicants, telephoned to ask our Iron and Ferro-Alloys Division about the status of the application. Mr. Jackson was informed that denial had been recommended by that Division. He was not informed that your report was unfavorable.

We would be quite willing to have you send another field team to make a re-examination of the subject claims if the applicants bring you new evidence which in your judgment justifies sending another field team to the property. Our denials are regularly made on the basis of existing information and we are always willing to consider a new application whenever conditions warrant.

Sincerely yours,

Warren C. Selfridge (GHS)

Chairman, Operating Committee

Approved:

Dr. H. Ledoux (GHS)

Member, Bureau of Mines

A. R. Kinzel, Jr. (GHS)

Member, Geological Survey

CC: DOCKET
ADMN. READ. FILE
CODE 400
OPER. COMMITTEE
FIELD TEAM, REG. 3
D. M. LEMMON, USGS
R. W. GEEHAN, USBM

WSMartin/ls 3/31/53

400 FILE COPY
SURNAME:

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

Rutledge
Martin
Kinkel
Hedges
Settridge
Hefsmann

Mr. Walter W. Johnson
Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

MAR 30 1953

68

Re: Docket No. DMEA 2807 - Tungsten
Panamint Tungsten Mines
Inyo County, California

Dear Mr. Johnson:

B.C. 3/30/53

Your application for aid for an exploration project and other data available to us in Washington concerning the subject 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 all our information, although noting a small amount of tungsten mineralization on your property, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

We wish to thank you for your interest in the Defense Minerals Program and for bringing your property to our attention.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

cc: Docket
Field Team, Region 3
Code 400
Admn. Read. File
R. W. Geehan, USBM
D. M. Lemmon, USGS

FARutledge/hhb
3/26/53

Docket

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

1012 Flood Bldg.
870 Market St.
San Francisco 2, Calif.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 27 1953

March 26, 1953

Memorandum

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

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2807 (Tungsten)
Panamint Tungsten Mines, Bluestone, et al. claims
Inyo County, California

Our denial was mailed Friday 3/27 per Hazel Perry L.S.

The subject applicants have learned from some source that our report on the Panamint Tungsten property was not favorable and they are anticipating that their request for a loan will be denied. Mr. Walter W. Johnson, an official of the company, requested over the telephone yesterday that I write you, asking that you defer your final decision until some supplemental information can be supplied.

The company is going ahead with the sinking of an inclined shaft, which, so I was told, has reached a depth of 18 feet, showing a good width of ore which the superintendent telephoned lamps very well. A 20-lb. representative sample is coming to San Francisco for analysis by Abbot A. Hanks Laboratories.

Large samples taken at approximate location of sampling by Bureau-Survey team also are being assayed, as applicant and his consulting engineer are not satisfied with the results our examiners obtained. I am not siding in with the applicant, but if he can prove that we erred, I am willing to back up and ask another crew to go down and make another examination.

The applicant, of course, brings up the importance of time, stating that it will not be too long before operations in Death Valley will have to be recessed for the summer.

The supplemental information will probably be furnished me in about a week. I will send it to you on receipt, with any recommendations I may have.

H. C. Miller, Executive Officer
DMEA Field Team, Region III

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Administrator, DMEA DATE: March 26, 1953

FROM : Iron and Ferro-Alloys Division, DMEA

SUBJECT: Denial of application for exploration assistance in the amount of $64,275.00. Subject application was amended from the original $60,000.00 requested to $78,570.00 and then to the present $64,275.00.
Docket No. DMEA 2807 - Tungsten
Panamint Tungsten Mines
Inyo County, California

The denial of the subject application by this Division is based on the following information:

1. An examination by the Field Team indicated the property has little merit.

2. The applicant proposed a series of exploration projects on small scattered occurrences of disseminated scheelite on the property of the Panamint Tungsten mines, near Skidoo, Inyo County, California. Some of the scheelite is fairly coarse grained, but much of the scheelite is fine-grained and locked in quartz and calcite. Three of the areas contain zones of quartz veins in limestone, and the fourth is traversed by a massive quartz vein along a fault.

3. Eighteen samples were taken by the examining engineers. Eliminating one sample of a 6-inch horizontal stringer of high-grade (2.73 percent WO_3), the remaining seventeen samples averaged 0.21 percent WO_3. Inferred reserves in the four areas are as follows: 745 tons containing 0.58 percent WO_3 and 11,260 tons containing not more than 0.20 percent WO_3.

4. It was the examining engineers' opinion, based on an ultra-violet lamp reconnaissance of the area, that the exploratory workings made to date are on the best of the showings. Because of the low tenor of the ore and the small tonnage indicated, there is little possibility of increasing the reserve appreciably by further exploration.

5. Ore dressing tests by the Hydro-metallurgical and Ore-Dressing Branch of the Bureau of Mines indicate that gravity concentration of the ore from the subject property would not be satisfactory.

6. The Field Team recommended denial of the application.

7. The Commodity Division of the U. S. Geological Survey recommends denial.

8. The Commodity Division of the U. S. Bureau of Mines concurs in the denial.

W S Martin

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

FILE COPY
SURNAME:

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

Administrator, DMEA

March 26, 1953

Rutledge
Martin

Iron and Ferro-Alloys Division, DMEA

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

cc: Docket
Code 400
Admn. Asst. File
Operating Committee
FARutledge/hhb
3/26/53

Docket

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

March 23, 1953

Memorandum

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 24 1953

To: Mr. W. S. Martin, DMEA

From: R. W. Geehan

Subject: DMEA-2807 Tungsten - Panamint Tungsten Mines
Inyo County, California

The Field Team reports dated March 6 and March 11 recommend denial. I concur in this recommendation, as available information indicates that the amount of tungsten ore that might be expected to be located would not be significant in relation to the work proposed.

Robert W. Geehan

Robert W. Geehan

Copy retained 400

COPY

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

March 23, 1953

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BUREAU OF MINES
Washington 25, D. C.

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Robert W. Geehan

IN REPLY REFER TO:

G-MD-CF

Gadlet

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

March 23, 1953

W509

Memorandum

To: W. S. Martin, DMEA

From: D. M. Lemmon, USGS

Subject: Field Report
Panamint Tungsten Mines
Bluestone Claims
Inyo County, California

DMEA-2807
Tungsten

The Bluestone claims were examined in January 1953, by Rinehart and Ross of the Geological Survey, and Trengove and Wiebelt of the Bureau of Mines. Their joint report, dated March 6, recommends denial of the exploration application because the cost of exploration is high and the potential tonnage is low. Eighteen samples across widths of 2 to 10 feet assayed from a trace to 0.89 percent WO_3, and one sample across 0.5 feet assayed 2.73 percent.

I concur with the Field Team recommendation that the application be denied.

DM Lemmon

D. M. Lemmon

Copy retained 400

IN REPLY REFER TO:

G-MD-CF

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

March 23, 1953

Memorandum

To: W. S. Martin, DMEA

From: D. M. Lemmon, USGS

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Panamint Tungsten Mines
Bluestone Claims
Inyo County, California

DMEA-2807
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D. M. Lemmon

IN REPLY REFER TO:

G-MD-CF

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

March 23, 1953

Memorandum

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From: D. M. Lemmon, USGS

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Panamint Tungsten Mines
Bluestone Claims
Inyo County, California

DMEA-2807
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D. M. Lemmon

Docket

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

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration
MAR 16 1953

March 11, 1953

Memorandum

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

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-2807 (Tungsten)
Panamint Tungsten Mines, Bluestone, et al. claims
Inyo County, California

Reference is made to the letter, dated January 2, from Frank E. Johnson, requesting a field examination of the Panamint Tungsten Mines.

Attached are four copies of a report made on the property entitled "DMEA-2807, Panamint Tungsten Deposits, Inyo County, California," by Dean Rinehart and Don Ross, Geologists, U. S. Geological Survey, and Russell R. Trengove and Frank J. Wiebelt, Mining Engineers, U. S. Bureau of Mines, dated March 6, 1953.

According to the report by the geologists and engineers, the property does not have sufficient merit to warrant exploration work with Federal funds. Eighteen samples were taken by Bureau of Mines engineers on all of the proposed project and with the elimination of one high-grade sample, the weighted average of the remaining samples was 0.21 percent WO_3. A composite of all eighteen samples contained only 0.25 percent WO_3. Ore dressing tests by the Hydrometallurgical and Ore-Dressing Branch indicate that gravity concentration of this ore would not be satisfactory.

The amended application which was submitted to this office by the applicant was given consideration when the cited report was prepared. The amended application had no effect in altering the opinions of the engineers and geologists on the exploration work on this property.

Mr. Bailey and I agree with the examining engineers and geologists that exploration with the aid of Government funds is not justified.

Reviewed by
DMEA OPERATING COMMITTEE
3-20-53
(date)

reviewed by Oper. Com. 3-20-53

In answer to paragraph ten of Mr. Frank E. Johnson's January 2 letter, Mr. Francis Frederick, Engineer for the Panamint Tungsten Mines, was disappointed with the results of our analyses of the samples taken during the field examination. Most of our results were lower than samples he took and in some instances lower by a large percentage. Mr. Frederick questioned the engineers' method of sampling and believes the rock is such that chip samples are not representative and that large machine cut samples are needed. He also questions our assays but Mr. J. B. Zadra of our Hydrometallurgical & Ore Dressing Branch at Reno, where the samples were run, is of the opinion that his results are correct. Mr. Zadra's office has yet to lose an umpire on Tungsten and only a short time ago when the Geological Survey had him recheck five samples pertaining to DMEA-2750, the results checked previous work exactly.

Mr. Zadra writes that the reason commercial assayers get higher results is because they do not use platinum crucible when digesting a sample with hydrofluoric acid and, therefore, some silica is weighed as WO_3. In every case that has been called to Mr. Zadra's attention, the commercial assayers' results have been on the high side verifying that they are weighing up silica instead of tungsten. His office has never had a complaint where his result was on the high side.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachment

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-2807, Panamint Tungsten Deposits

Inyo County, Calif.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 16 1953

Dean Rinehart and Don Ross, Geologists
U. S. Geological Survey

Russell R. Trengove and Frank J. Wiebelt, Mining Engineers
U. S. Bureau of Mines

March 6, 1953

Reviewed by
DMEA OPERATING COMMITTEE
3-20-53
(date)

DMEA-2807, Panamint Tungsten Deposits

Inyo County, Calif.

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Docket No: DMEA-2807

Name and address of applicant: Walter W. Johnson, Manager
Panamint Tungsten Mines
910 Balfour Bldg.,
351 California Street
San Francisco 4, Calif.

Name and location of property: Panamint Tungsten Deposits
Inyo County, Calif.

SUMMARY, JOINT CONCLUSIONS, AND RECOMMENDATIONS

The U. S. Geological Survey and the U. S. Bureau of Mines examined the Panamint Tungsten deposits, situated 22.5 miles southwest of Stove Pipe Wells, Death Valley, California, in January 1953.

The purpose of the examination was to determine if the geological conditions and the grade of the mineralization were favorable to justify approval of an application for a Government loan. The total estimated cost, in the application dated December 22, 1952, is $78,570.91. However, on February 24, 1953, the applicant amended the original application to include exploration in the area of Project C only (see Plate I of the report), where several hundred feet of trenching and underground work is proposed. The inferred reserves in this area, however, are less than 400 tons of ore containing about 0.5 percent WO_3.

Eighteen samples were taken by Bureau of Mines engineers on all of the proposed projects. Eliminating one sample of a 6-inch horizontal stringer of high grade (2.73 percent WO_3), the remaining samples averaged 0.21 percent WO_3. A composite of all eighteen samples contained only 0.25 percent WO_3.

The ore mineral is scheelite; some fairly coarse-grained, but much of the scheelite is fine-grained and locked in quartz and calcite. A small amount of altered fine-grained pyrite was noted.

Ore-dressing tests made on the composite of the eighteen samples prove that gravity concentration is not satisfactory. Flotation, however, recovers 71.2 percent of the scheelite in a concentrate assaying 11.3 percent WO_3 representing 1.53 percent of the original weight of ore. Possibly, higher recoveries can be made in plant-scale operations.

Although the possibility of ore discovery on Project C is better than elsewhere on the property, the expected tonnage of minable ore is not commensurate with the cost of exploration, and Government participation in the program is not recommended.

INTRODUCTION

An application for a Government loan under sec. 302 of the Defense Production Act of 1950, was made by Walter W. Johnson, manager, Panamint Tungsten Mines. The loan is intended to be used in exploration by trenching and sinking two shafts.

An examination was made of the Panamint Tungsten deposits by geologists[1/] of the U. S. Geological Survey and engineers[2/] of the U. S. Bureau of Mines in January 1953. Representatives of the Panamint Tungsten Mines, who accompanied the examiners, are as follows:

Francis H. Frederick, mining geologist,
503 Market Street, San Francisco 5, Calif.

1/ Dean Rinehart and Don Ross.
2/ Russell R. Trengove and Frank J. Wiebelt.

George Hellerich, mining engineer and superintendent, and Thad C. Green, co-owner, who reside on the property.

The property, consisting of thirty-one unpatented mining claims, is owned by Thad C. and Jo L. Greene. Fifteen of these mining claims have been leased to the Panamint Tungsten Mines, a partnership consisting of Walter W. Johnson, 910 Balfour Building, 351 California Street, San Francisco 4, Calif., William M. Maxfield, 535 Russ Building, San Francisco 4, Calif., and George J. O'Brien, c/o Executive Offices, Standard Oil Co. of California, West Olympic Blvd., Los Angeles, Calif.

The Panamint Tungsten deposits are situated within the Death Valley National Monument, Inyo County, Calif., (fig. 1), in the Panamint range of mountains on the west rim of Death Valley at elevations ranging from 5100 to 6000 feet above sea level.

To reach the property from Stove Pipe Wells, the nearest source for meals, lodging and mail, travel southwest on State Highway No. 190 seven miles to the Park Headquarters Checking Station, turn left and follow hard-surfaced road a distance of eleven miles to the left turnoff which is a dirt road to the old gold camp of Skidoo. This road is followed three and one-half miles to the property.

Southerly the hard-surfaced road leads to Wildrose Station, 16 miles from the property, and thence to Trona and Argus in the northwest part of San Bernardino County, 56 and 57 miles respectively from the property. Trona and Argus are on a branch line of the Southern Pacific railroad and are the chief supply and shipping points.

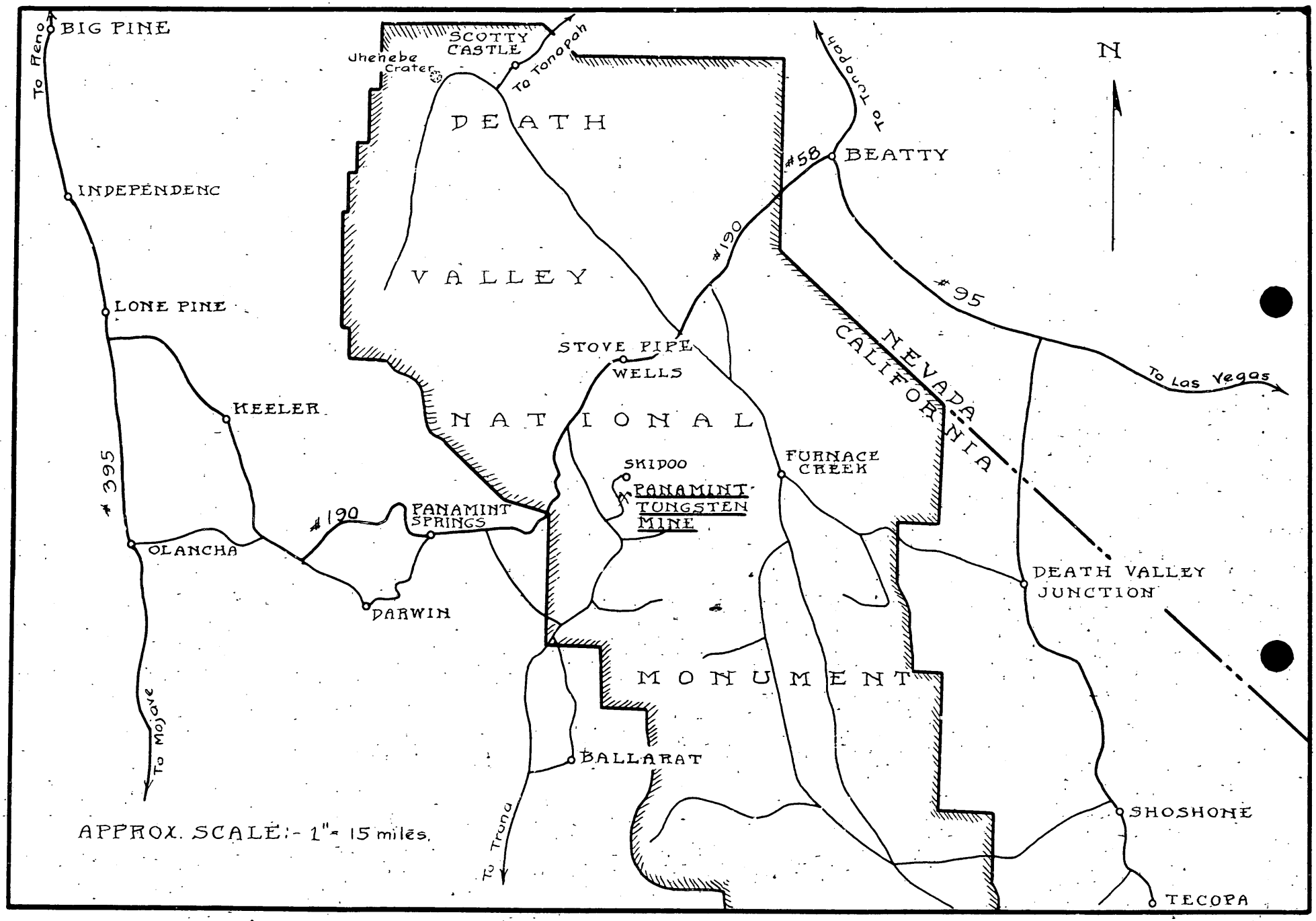

FIGURE 1. LOCATION MAP - PANAMINT TUNGSTEN MINE, INYO CO. CALIF.

Water for all uses must be obtained at Emigrant Springs about 10 miles distant. At present, water is hauled by truck in 50 gallon drums. Mr. Frederick stated that abundant water supply can be piped to the property by gravity from a supply about 18 miles distant and about 4,000 feet higher in elevation. It is estimated that a 4-inch line installed to furnish water from this latter source to the property would cost about $100,000.

There are no permanent structures on the property. The mine superintendent, the owner and the laborers live in trailers and tents.

Equipment on the property is as follows:

1 small tent
3 trailer houses
1 small portable compressor
1 D-7 Caterpillar tractor-dozer in poor shape
1 flat-bed truck

HISTORY AND PRODUCTION

In May 1952, Thad C. Greene prospected and then staked the first claims in this new tungsten district. The property was then known as the Greene's Tungsten Claims.

In November 1952, fifteen mining claims were leased to a newly formed mining company, The Panamint Tungsten Mines.

Except for about 50 tons of sorted ore obtained from a shallow pit on the Junction claims, there has been no production to date. This Junction claim has not been included in the loan application.

DEVELOPMENT

Exploration to date consists primarily of assessment work, such as blasting the outcrops and the building of truck trails. Several

small open cuts were made by drilling, blasting and mucking out by hand shovels. No attempt has been made to determine the downward extent of the outcrops.

GEOLOGY

Summary and Conclusions:

The area of the Panamint tungsten mines is underlain by metamorphosed sedimentary rocks, chiefly limestone, with lesser amounts of quartzite and phyllite; some plutonic igneous rocks are also present. Veins of quartz and calcite are common in the limestone and locally have been mineralized with scheelite.

The exploration proposed by the applicant includes trenching four separate areas containing scheelite. Three of the areas contain zones of quartz veins in limestone, and the fourth is traversed by a massive quartz vein along a fault.

Scheelite-bearing rock occurs locally but, with the exception of minor hot spots, is considerably below minable grade. Reserves inferred in the four areas are 745 tons containing 0.58 percent WO_3, and an additional 11,260 tons containing not more than 0.20 percent WO_3.

The inferred tonnage of minable ore is insufficient to warrant Government participation in an exploration program.

General Geology:

The area of the Panamint tungsten mines is underlain by metamorphosed sedimentary rocks and lesser amounts of plutonic igneous rocks (see Plate I). The predominant rock is gray to buff limestone that commonly is massive but locally is thin-bedded. Breccia is

common, and sandy and shaly layers are present locally in the limestone. The southeastern part of the property is underlain by phyllite and the northeastern corner of the mapped area is underlain by quartzite. In the southwest part of the property granitic rocks are exposed with mixed zones of schist, quartzite, and conglomerate. A central area is covered with alluvium.

The sedimentary rocks are tentatively correlated with the Lower Paleozoic sediments studied by Hopper (1947)[3] near Aguerraberry Point. The phyllite may correlate with part of the Johnnie formation of Cambrian age. The granitic rocks probably are part of a pluton described by Hopper as a correlative of the Sierra Nevada plutonics.

The regional dip of bedding is to the east, but local changes are common. A steep north-trending fault is coincident with the massive quartz vein in the Project D area (see Plate I). An east-trending fault with the north block downthrown is postulated along the south side of the alluvium.

Quartz veins and calcite veinlets are common in the limestones and most abundant in the area of Project B (see Plate I). Quartz veins are sparse in the phyllite, present and locally scheelite-bearing in the granitic rocks, and not present in the quartzite. The calcite veinlets are generally less than an inch wide, but the quartz veins range from less than one inch to 20 feet in width. The veins and veinlets locally contain scheelite that fluoresces a brilliant blue-white. Assays show that the scheelite contains not more than

3/ Hopper, R. H., Geologic section from the Sierra Nevada to Death Valley, California, Bull. Geol. Soc. American, Vol. 58, pp. 393-432, May 1947.

0.03 percent molybdenum.

Factors influencing estimation of grade:

Most of the scheelite, under ultra-violet light, shows subdued blue-gray halos and some patches give a foggy glow. The indistinct fluorescence may be the result of diffused light from fine grains of scheelite shining through quartz. An example of the danger of estimating grade from the foggy fluorescence is shown by sample No. 15 which was taken across a 6-inch vein zone that appeared to contain 25 percent WO_3. The sample assayed only 2.73 percent WO_3.

The operators contend that in the pits, the grade of ore has increased after one or two rounds of rock have been removed. They believe a combination of caliche coating and leaching of weathered outcrop conceals the true nature of the ore. The applicant's proposed trenching between the present pits is based on the premise that the pits reveal the true nature of the ore. The removal of weathered material between the pits is supposed to expose ore similar in grade to that now exposed in the pits.

Surface coating and weathering are not necessarily the causes of the marked change in grade within short distances. Sporadic scheelite localizations may be the reason. An example is provided by sample localities 1 and 11, which were examined in ultra-violet light and estimated to contain 0.2 to 0.4 percent WO_3. One round was shot, and the fresh faces were examined in ultra-violet light and sampled. Both faces appeared essentially barren, and assayed less than 0.01 percent WO_3. The Bond Street pit (east of the area of Project D -- see Plate I) provided another example of the sporadic

occurrence of scheelite. The pit was dug on two thin quartz veins that, near the surface, contained up to 20 percent WO_3 (according to F. Frederick). The pit has been extended 15 feet, and at the face the veins are barren.

Caliche coating, however, cannot be discounted as a factor in masking scheelite fluorescence. At some localities chipping revealed scheelite that previously did not fluoresce through the caliche skin. At other localities, however, the scheelite fluoresced through a caliche skin of comparable thickness.

In summary, the marked change of grade over short distances is believed to be due chiefly to sporadic mineralization. The pits represent exploration of the richest spots, as determined by examination in ultra-violet light, and are not random locations on a large rather uniform orebody. Continuity between the isolated occurrences or in depth cannot be expected.

Method of calculating reserves:

In computing reserves of inferred tonnages, the following practices were observed: (1) The length of an inferred block includes material that, under ultra-violet light, appeared comparable to the sample in grade; (2) the vertical depth assumed is one-half the length along which the material was exposed; (3) the sample width is the horizontal width of the inferred block. The calculated reserves include only those pods of ore exposed at the surface.

Areas of proposed exploration:

The exploration proposed by the applicant is in four separate areas. For purposes of discussion, the areas are referred to as

Projects A, B, C, and D, and are outlined on Plate I. The claim names used on Plate I are also used by the applicant to designate the project areas. The project boundaries are not claim boundaries.

Project A

The area which includes the proposed Project A (see Plate I) is underlain by massive limestone beds which strike northwest and dip southwest. The limestone is brecciated, silicified, and cut by many quartz veins. Most of the zones of silicification and quartz veins strike north and dip west from 30 to 90 degrees, but in some exposures exhibit no directional trend.

Three widely separated scheelite-bearing localities occur over a length of 750 feet along a north-trending line. Each locality has been explored by means of a small pit 4 to 6 feet deep. The scheelite is fine-grained and occurs in veinlets within the silicified zone.

The only minable ore found in the area of Project A is near the center pit where a mineralized zone 10 feet wide is exposed for a length of 20 feet. Assuming the ore continues to a depth of 10 feet, 200 tons of ore containing 0.5 percent WO_3 are inferred. Reserves inferred at the other two scheelite-bearing localities amount to about 60 tons containing not more than 0.14 percent WO_3.

Project B

The area of Project B (Plate I and II) is underlain by massive limestone beds that strike N. 50° to 90° southwest. Much of the limestone is transected by steeply dipping quartz veins that strike from slightly east of north to east, and range from a fraction of an

inch to about 2 feet in thickness. Many indistinct calcite veinlets are visible in the pits but they were not found in weathered outcrops. Although minor faults cut the limestone, very little breccia was observed.

Several scheelite-bearing localities spaced at regular intervals are aligned about N. 75° W. for a distance of 350 feet. In plan the mineralized areas form irregular patches with a maximum horizontal dimension of about 15 feet, with the exception of the easternmost locality which is 40 feet long and about 15 feet wide.

The greatest exposed vertical dimension in any of the localities is about 10 feet. Although exposures are abundant, no scheelite was seen between any of the mineralized areas shown on the map. The scheelite is generally fine-grained and is sporadically distributed through the quartz and calcite veinlets.

The only minable ore is exposed near the pit identified on the map by sample No. 6. The ore as exposed, is 10 feet long, 10 feet wide and has been explored for 10 feet vertically. Reserves inferred in this body are about 60 tons containing 0.5 percent WO_3. From the other scheelite-bearing localities an additional 950 tons containing not more than 0.19 percent WO_3 are inferred.

Project C

The area of Project C, as outlined on Plates I and II, is altered from the description in the original application to include part of the Junction claim as requested by the applicant's representative, Mr. F. H. Frederick. Massive limestone beds, striking northeast with

gentle dips, underlay most of the area and are the host for scheelite-bearing quartz veins. A north-trending contact between the limestone and granitic rock to the west coincides with the west boundary of the area of Project C. The alignment of the contact with a fault in the Project D area, and lack of silication of the limestone near the contact, suggests a fault contact.

Scheelite occurs at four widely spaced localities, designated on the map as C_1, C_2, C_3, and C_4, each of which has been explored by means of shallow pits or open cuts. At C_1, C_2, and C_4, scheelite is in thin discontinuous quartz veinlets which transect zones of silicified limestone breccia, but are too small to be shown individually on the map. At C_3 the scheelite is in quartz veins up to 4 inches thick, which cut unbrecciated limestone. The only ore-body showing a directional trend is at C_2.

C_1

The best scheelite showings in the area of Project C are at C_1 and have been explored by means of two small pits at the northeast edge of an irregularly shaped mineralized zone about 100 feet across. The scheelite is fine-grained, and occurs in criss-crossing quartz veinlets which transect silicified limestone breccia. The best showing is in the south pit where the ore is confined to a width of 5 feet along the north side of the pit, and is fairly uniform in grade to a depth of 8 feet. An 8-pound chip sample (No. 16) of this material contained 0.89 percent WO_3. Elsewhere, the material in the mineralized zone appears to be considerably below minable grade. A stockpile con-

taining about 50 tons of selected ore taken from the south pit has a weighted average grade of about 1.40 percent WO_3, according to assay data submitted by Frederick who took samples totaling 330 pounds.

C_2

At C_2 the scheelite is fine-grained and is distributed in small, crisscrossing quartz veinlets along a silicified zone. Scattered exposures indicate that the zone is 10 to 20 feet wide and extends for about 120 feet along a set of northeast-trending joints. The joints dip 50°-60° southeast and may represent sheeting along a fault zone, as the rock in which the scheelite occurs has been brecciated and silicified. Pods of quartz 3 to 6 feet wide and 10 to 20 feet long are common in the zone. No data concerning the dip of the mineralized body was found. Inasmuch as it parallels the strike of the joints, however, it is possible that it may also parallel the dip.

The best showings, at the northeast end of the zone, have been explored by means of a pit 30 feet long, 15 feet wide, and 3 feet deep. Elsewhere along the zone, the ore appears to be considerably below minable grade. In the pit, scheelite is distributed across a width of 9.5 feet, but ultra-violet light shows that the better grade material is confined to a width of 5.5 feet along the northwest side of the zone. Sample No. 10-A represents the material of better grade and contains 0.54 percent WO_3, whereas sample No. 10-B represents the low-grade material on the southwest side of the zone and contains less than 0.01 percent WO_3.

C_3

A small pit at C_3 is in a zone of criss-crossing scheelite-bearing quartz veins ranging from a fraction of an inch to 4 inches in thickness. The area containing scheelite is 12 feet long, 2 feet wide, and is exposed to a depth of 3 feet. Scheelite is finely disseminated through the quartz and in ultra-violet light, some veins fluoresce as though entirely composed of scheelite. A 6-inch zone containing three of these veins was estimated to contain 25 percent WO_3, whereas a sample of this zone (No. 15) containing only a small amount of country rock, assayed only 2.73 percent WO_3.

C_4

At C_4, 600 feet N. 60° E. of C_3, an irregular area about 10 feet across contains small veinlets of fine-grained scheelite in silicified and brecciated limestone. Sample No. 9 represents a chip sample taken across 5 feet of the best showings and contained 0.20 percent WO_3. The only working at C_4 is a 12-foot shaft which explores an east-trending vertical quartz vein 7 feet thick. Examination in ultra-violet light revealed no scheelite in the vein.

Reserves, Project C

The only appreciable reserves that can be inferred in the project C area are at localities C_1 and C_2. At C_1, the exposed ore body is 25 feet long, 5 feet wide, and is exposed to a depth of 8 feet. The reserves inferred in this body are about 100 tons containing 0.89 percent WO_3. From 2000 to 5000 tons of material containing no more than 0.10 percent WO_3 could probably be mined from the area adjacent

to the pit.

The exposed ore body at C_2 is 35 feet long, 5.5 feet wide, but is exposed vertically for only 3 feet. Reserves inferred in this body are about 325 tons containing 0.54 percent WO_3. In the remaining portion of the mineralized area, 4500 tons of material containing not more than 0.10 percent is inferred.

The reserves inferred at C_3 are 10 to 20 tons containing 0.5 percent WO_3. Reserves in the small body at C_4 are inferred at less than 50 tons containing 0.20 percent WO_3.

Project D

The purpose of Project D (see Plate I) is to explore a quartz vein on the Doggy claim, which occurs along a fault zone that is as much as 50 feet wide. The fault is between a gray limestone and a layer of black conglomerate. The quartz vein strikes approximately north and dips steeply to the west. It is 8 feet in maximum width and can be traced as discontinuous pod-like bodies for over 2200 feet. Locally, the bodies end abruptly; elsewhere they thin to quartz stringers within a few inches. The quartz on the Doggy claim is similar to the quartz veins on the other claims, but is more abundant.

Scheelite occurs locally as disseminated grains and veinlets in the quartz, but with minor exceptions is not found in the silicified breccia. Eleven scheelite occurrences were located by the use of ultra-violet light along the 2250 foot length. The only ore of minable grade is near sample locality No. 12. A chip sample of a 2-foot width across the quartz vein for a length of 20 feet assayed 0.63 per-

cent WO_3. The three other samples shown on the map assayed not more than 0.15 percent WO_3 for widths of 3 to 4.5 feet. Two pits have been dug in the massive quartz. The most southerly pit, which is 10 by 15 feet and 10 feet deep, is entirely in mineralized rock, but sample No. 14 contained less than 0.01 percent WO_3. The north pit is 10 by 20 feet and 20 feet deep, and reveals only traces of scheelite.

Slopewash covers much of the hillside along the Doggy claim, but the quartz vein, being more resistant, is well exposed in most places. The quartz contains scheelite only locally, and the occurrences are commonly low in grade. The vein at depth will probably be no more mineralized than are the surface exposures.

Chip sample No. 12 is from the only minable ore body in the quartz vein. The sample width is 2 feet and the maximum length of scheelite-bearing rock is 20 feet. By assuming a depth of 10 feet, 40 tons of ore containing 0.63 percent WO_3 is inferred. From the remaining scheelite-bearing localities, an additional 700 tons containing not more than 0.15 percent WO_3 is inferred.

SAMPLING

Eighteen samples were taken by the Bureau engineers[2/]. Sampling of the mineralized highly silicified limestone was very difficult. Chip samples were cut by using moils and also by breaking off pieces with a single jack.

For location of samples taken see Plate I.

Project "A":

Exploration work has been proposed for the Walter J. and the

adjacent George D. claims. The George D. claim was examined with an ultra-violet light on two successive nights. No mineralization was found. Therefore, the proposed work on the George D claim will be removed from the exploration program.

Three exposures were sampled on the Walter claim as follows:

Sample No.	%, WO_3	%, Mo	Description	Remarks
1	*0.01	*0.01	Outcrop 6.5 feet thick.	This lamped poorly. It was blasted the day after the sample was taken, and lamping the following night showed that the blasting eliminated all mineralization.
2A	0.76	0.03	5-foot thickness of best mineralization.	Mineralization exposed in shallow open cut.
2B	0.22	0.01	5-foot thickness of poorer mineralization.	
3	0.14	*0.01	3-foot thickness.	Exposed 5 feet along strike in open cut.

Project "B":

Six samples were taken on the **Steep Hill** claim which is at the extreme east end of the property. Mineralization is exposed in four shallow side hill cuts and one outcrop. Results of the sampling are as follows:

Sample No.	%, WO_3	%, Mo	Description	Remarks
				Cross fractures exposed at right angles to general strike. Shallow side hill cuts.
4A	0.07	*0.01	6-foot thickness)	
4B	0.02	*0.01	3.5-foot thickness)	Length of exposure 15 feet.
5	*0.01	*0.01	4-foot thickness	" " " 10 "
6	0.51	0.02	10-foot thickness	" " " 21 "
7	0.19	0.01	9-foot thickness H.G.	" " " 9 "
8	0.11	*0.01	3-foot outcrop	" " " 15 "

*Less than.

Project "C":

Four samples were taken on the Blue Stone claims which are near the south boundary of the property. Results of the sampling are as follows:

Sample No.	%, WO_3	%, Mo	Description	Remarks
9	0.20	*0.01	5-foot thickness	Shallow pit shows mineralization for 9 feet along strike.
10A	0.54	*0.02	5.5 foot thickness.	Split sample in same shallow cut.
10B	*0.01	*0.01	4-foot thickness	
15	2.73	0.03	6-inch stringer	Shallow open cut,-stringer exposed for 8 feet along strike.

Project "D":

Four samples were taken in two shallow open cuts and two outcrops on the Doggy claim which is north of the Blue Stone claim. Results of the sampling are as follows:

Sample No.	%, WO_3	%, Mo	Description	Remarks
11	*0.01	0.01	4-foot thickness	Open cut
12	0.63	0.02	2-foot outcrop	Exposed 2 feet along strike.
13	0.15	*0.01	3-foot outcrop	Exposed 36 feet along strike.
14	*0.01	*0.01	4-foot thickness	Open cut exposed 16-feet along strike.

*Less than.

ORE DRESSING TESTS[4/]

A composite of 18 small samples was tested. This material contained only 0.25 percent WO_3, but since preliminary examination indicated possibilities of satisfactory concentration of the scheelite,

4/ Hydrometallurgical & Ore-Dressing Branch, Reno, Nev.

standard gravity concentration and flotation tests were made.

The ore contained some fairly coarse grains of scheelite, but much of the scheelite was fine-grained and locked in quartz and calcite. A small amount of altered fine-grained pyrite was noted.

For gravity concentration on the shaking table, the ore was crushed to minus 10-mesh and hydraulically classified into three sand products and slimes. Each was separately tabled. It had been expected to make low-grade tailings in each size range, and thus produce an enriched concentrate product for retreatment and possibly a small amount of high-grade concentrates. Analyses of the table products demonstrated that it was not until the minus 65-mesh range was reached that tailings containing as little as 0.03 percent WO_3 were obtained. Consequently, treatment by gravity concentration would not be practical since neither good concentrates nor satisfactory tailings for discard were produced. Grinding the entire ore to minus 65-mesh would produce a large proportion of slimes too fine for gravity concentration. The alternate treatment was flotation.

The flotation feed was stage-ground to minus 100-mesh. The small WO_3 content of the ore made it difficult to obtain satisfactory concentrates in the laboratory operations. However, sufficient information was obtained to indicate that the ore could be treated by this method, providing such treatment would be economical.

The rougher stage of flotation was conducted using soda ash, sodium silicate, and quebracho for conditioning reagents, and oleic acid as collector with Dowfroth. The rougher concentrates from

several charges were combined and cleaned in several stages. The cleaner concentrates contained 11.3 percent WO_3, representing 71.2 percent recovery in 1.53 percent of the original weight of ore. The rougher tailings contained 0.025 percent WO_3, representing a loss of 9.5 percent of the total WO_3 in the original ore. The remainder of the WO_3 was in the cleaner tailings. In plant operation, it might be possible to produce flotation concentrates of marketable grade with perhaps 80 percent recovery of the original scheelite. Detailed data of this test are as follows:

Flotation test - Panamint Tungsten Mines Company Ore

Product	Weight, percent	WO_3, percent	Distribution WO_3, percent
Concentrates	1.53	11.29	71.2
Cleaner tailings	5.67	.83	19.3
Rougher tailings	92.80	.025	9.5
	100.00	0.24	100.0

The flotation reagents used were, in pounds per ton of ore:

	Rougher	Cleaners
Soda ash	2.5	0.25
Sodium silicate	2.0	0.30
Quebracho	0.3	0.15
Oleic acid	0.3	-
Dowfroth	0.1	-

CONCLUSIONS AND RECOMMENDATIONS

Geologist's conclusions: Total ore reserves of minable grade inferred in the property are 745 tons containing a weighted average of 0.58 percent WO_3. In addition, a total of 11,260 tons of sub-marginal ore

containing not more than 0.20 percent WO_3 is inferred, the largest blocks of which occur at C_1 and C_2. Reserves inferred in each individual locality are tabulated in Table 2; assay data and sample widths are given in Table 1.

These reserves are either too low in grade or of insufficient tonnage to warrant Government participation in an exploration program.

The applicant has amended the original exploration proposal in a recent letter to Mr. H. C. Miller, Executive Officer, DMEA, Region III. The amended proposal is limited to the Project C area, at localities C_1 and C_2, where several hundred feet of trenching and underground work is proposed. The applicant bases this exploration upon his belief that the actual scheelite content of the rock is masked by a coating of caliche and that trenching will reveal ore of minable grade beneath the present surface. This belief is not shared by the writers. He agrees, however, that under ultra-violet light, the scheelite-bearing rock in the areas of proposed exploration, excluding that exposed in the pits, does not appear to be of minable grade.

Engineer's conclusions: In the opinion of the Bureau examining engineers, this property is not attractive for capital investment. Because of the low tenor of the ore and the small tonnage indicated, there is little possibility of increasing the reserve appreciably by further exploration.

JOINT RECOMMENDATIONS

Although the possibility of ore discovery is better at localities C_1 and C_2, than elsewhere on the property, the expectable tonnage of minable ore is not commensurate with the cost of exploration, and Government participation is not recommended.

TABLE 1

Table of Assays

	Sample No.	%, WO_3	%, Mo	Sample width in feet
Project A	S-1	*0.01	*0.01	6.5
	S-2A	0.76	0.03	5.0
	S-2B	0.22	0.01	5.0
	S-3	0.14	*0.01	3.0
	S-4A	0.07	*0.01	6.0
	S-4B	0.02	*0.01	3.5
Project B	S-5	*0.01	*0.01	4.0
	S-6	0.51	0.02	10.0
	S-7	0.19	0.01	9.0
	S-8	0.11	*0.01	3.0
	S-9	0.20	*0.01	5.0
	S-10A	0.54	*0.02	5.5
Project C	S-10B	*0.01	*0.01	4.0
	S-15	2.73	0.03	0.5
	S-16	0.89		5.0
	S-11	*0.01	0.01	4.0
Project D	S-12	0.63	0.02	2.0
	S-13	0.15	*0.01	3.0
	S-14	*0.01	*0.01	4.0

*Less than.

TABLE II

Table of Inferred Reserves

	Minable Ore		Sub-marginal Ore	
	Tons	%, WO_3	Tons	%, WO_3
Project A	200	0.50	60	0.14 and less
Project B	60	0.50	950	0.19 " "
Project C_1	100	0.89	5,000	0.10 " "
Project C_2	325	0.54	4,500	0.10 " "
Project C_3	20	0.50		
Project C_4			50	0.20 " "
Project D	40	0.63	700	0.15 " "
	745		11,260	

DEPARTMENT OF INTERIOR
BUREAU OF MINES
REGION III
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1973 MAR 9 AM 9:05

SAN FRANCISCO, CALIFORNIA

7. Are subordination agreements necessary?_____

a) MF-201?_____

b) MF-202?_____

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower_____

b) Equipment and supplies_____
(question 14 plus general knowledge of availability)*

c) Accessibility (question 12)*_____

d) Water (question 13)*_____

e) Power (question 13)*_____

Is a field check needed on any of these points?_____

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)*_____

_____

Is a field check needed on this point?_____

10. Exhibit A. (question 21 and 22)*

a) Is the project adequately described?_____

If not, are there sufficient data given so that you can describe the project?_____ If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work?_____

_____

c) Is the proposed work "exploration" under the definition of Section 8, MO-5?_____

If not, what part of it is?_____

_____

_____

_____

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No._____

Commodity_____

Total Amount_____

Govt. Participation_____

1. Name and Address of Applicant_____

_____

2. Location of Property_____

_____

_____

3. Mineral or metal_____ Is it listed in Section 9 of MO-5?

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good_____

b) Poor_____

c) None_____

d) Don't know—needs field examination_____

e) Is there an alternative and favorable project?_____
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated?_____
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached?_____

Does the lease have sufficient time to run to cover a future

productive period?_____

*question numbers are those of MF-103

Docket

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 9 1953

1012 Flood Bldg.
870 Market St.
San Francisco 2, Calif.

March 5, 1953

Memorandum

To: Defense Minerals Exploration Administration,
Interior Building, Washington 25, D. C.

WSM

From: Executive Officer, DMEA Field Team, Region III

Subject: DMEA-2807 (Tungsten)
Panamint Tungsten Mines, Bluestone, et al. claims
Inyo County, California

Attached are two copies of a letter, dated March 2, 1953, from Mr. Walter W. Johnson, Manager, Panamint Tungsten Mines, by means of which he is submitting a revised program of exploration for his company's property.

The property was examined recently by our engineers and geologists on the basis of the applicant's original application, but now that the company has revised its program and has included in it certain claims which had been excluded from the original application, the report being prepared on the results of the examination will consider the company's latest proposal.

H. C. Miller
Executive Officer, DMEA Field Team
Region III

Attachment

Copy to: E. H. Bailey, USGS
A. C. Johnson, Reno

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
MAR 9 1953

PANAMINT TUNGSTEN MINES
351 California Street
San Francisco 4, California

March 2, 1953

Mr. H. C. Miller
Regional Director
U. S. Bureau of Mines
1004 Flood Building
San Francisco 2, California

RE: DMEA Docket No. 2807
Panamint Tungsten Mines

Dear Mr. Miller:

Recent mapping, sampling, and exploration work done at the Panamint Tungsten Mines since the date of our original application indicate that we should confine the first intensive work to the Bluestone, Bluestone Fraction, Junction, and Junction Fraction mining claims. We are therefore submitting herewith a revised application for a loan from DMEA to explore for tungsten in the area of Project C, which is now extended to include the above mentioned claims. The property owners, from whom we have a lease, have agreed to sign a lien form including those claims.

The New Project C is to be composed of two (2) stages. First stage is to be a maximum of 1600 feet of trenching in bedrock, trenches to be 3 feet wide and 3 feet deep into bedrock, work is to be done by drilling with air hammers, blasting, and cleaning out the trenches by hand shoveling. Two (2) air hammers and two (2) compressors will be used. One (1) small (105) compressor is operator owned; the other, a 210, is to be rented (or equivalent at 210 rental rate). Trenching is to be in three (3) separate areas of the total project area. Stage 2 is to be the sinking of two (2) shafts, each to a maximum depth of 100 feet, to a lesser depth if progress evidence so indicates, and then there is to be 100 feet of lateral work from each shaft at places to be determined after completion of the shaft work. The specific shaft sites are to be determined after the completion of part, or all, of Stage 1. Trenching work will require $2\frac{1}{2}$ months elapsed time with 5 workmen plus the superintendent. The shaft and lateral underground work will require $5\frac{1}{2}$ months elapsed time for 8 men plus the superintendent.

Trench Area C-1 - North central part of Bluestone Fraction claim, including the site of DMEA sample mark 10A. Area to be explored is 300 feet long southwesterly and 100 feet wide. Trenches to be 40 feet apart and 25 to 100 feet long across the estimated trend of the ore, a total of 400 feet of trenching. A shaft in Stage 2 is to be sunk at some favorable place indicated by the trenching. Two (2) test pits, each 10 feet deep, have been recently put down in ore in this area. One pit is at DMEA mark 10A, the other pit is about 70 feet southwesterly.

Trench Area C-2 - West part of Junction claim and including the area of the location cuts made prior to December 1952. Area to be explored is 300 feet by 300 feet in plan in the limestone formation, just easterly of the granitic complex and includes the area of DMEA sample No. 16. Trenches to be 40 to 50 feet apart and 50 to 300 feet long, across the estimated trend of the ore, a total of 1000 feet of trenching. A shaft is to be sunk at some favorable place to be indicated by the trenching. A stockpile of about 40 tons of ore has been made from one of the cuts. A 100-pound sample from the pile assayed 1.95% WO_3. A 270-pound sample taken at another time assayed 1.26% WO_3. Two (2) smaller samples taken from the area before the stockpile was completed assayed 14.3% and 8.7% WO_3.

PACIFIC [illegible] [illegible]
321 California Street
San Francisco 4, California

March 2, 1953

Mr. R. G. Miller
Regional Director
U. S. Bureau of Mines
1005 Mono Building
San Francisco 5, California

Re: BMA Docket No. 5007
Tomorrow Morgan Mine

Dear Mr. Miller:

Recent sampling, trenching, and exploration work done at the Tomorrow Morgan Mine at the [illegible] of our original application indicate that we should combine the first [illegible] work to the Bluestone, Bluestone Junction, Junction, and Junction Tunnels [illegible] claims. We are therefore submitting herewith a revised application for a loan from BMA to explore for tungsten in the area of Project 3, which is now embraced in the [illegible] claims. The property owners, from whom we have a lease, have agreed to sign a joint form including those claims.

The new Project 3 is to be composed of two (2) stopes. What stope is to be a maximum of 1000 feet of trenching in bedrock, trenches to be 3 feet wide and 3 feet deep into bedrock, work is to be done by drilling with air hammers, blasting, and cleaning out the trenches by hand shoveling. Two (2) air hammers and two (2) compressors will be used. One (1) small (165) compressor is a spare one; the other, a 210, is to be rented (or equivalent at 210 rented rate). Trenching is to be in three (3) separate areas of the total project area. Stope 2 is to be the finishing of the (2) stopes, each to a maximum depth of 200 feet, to a lesser depth if previous evidence so indicates, and then there is to be 100 feet of lateral work from each shaft or place to be determined after completion of the shaft work. The specific shaft sites are to be determined after the completion of work, or all, of Stope 1. Trenching work will require 2½ months elapsed time with 5 workers plus the superintendent. The shaft and lateral underground work will require 5½ months elapsed time for 8 men plus the superintendent.

Trench area C-1 - North central part of Bluestone Junction claim, including the site of [illegible] shaft 10A. Area to be explored is 300 feet long southwesterly and 100 feet wide. Trenches to be 40 feet apart and 25 to 100 feet long across the estimated trend of the ore, a total of 400 feet or trenching. A shaft in place is to be sunk at a favorable place indicated by the trenching. The (2) test pits, each 10 feet deep, have recently cut down in ore in this area. One pit is at DMA mark 10, the other pit is about 70 feet southwesterly.

Trench area C-2 - East part of Junction claim and including the area of the Joseph Ryan [illegible] prior to December 1952. Area to be explored is 300 feet by 300 feet in size in the Junction formation, just easterly of the granitic contact and includes the area of DMA sample No. 16. Trenches to be 40 to 50 feet apart and 50 to 300 feet long across the estimated trend of the ore, a total of 1000 feet of trenching. A shaft is to be sunk at some favorable place to be indicated by the trenching. A stockpile of about 40 tons of ore has been made from one of the open. A 100-pound sample from the pile assayed 1.55% WO3. A 270-pound sample taken at another time assayed 1.25% WO3. Two (2) smaller samples taken from the ore before the stockpile was completed assayed 1.3% and 1.7% WO3.

PANAMINT TUNGSTEN MINES
351 California Street
San Francisco 4, California

Trench Area C-3 - West part of Bluestone claim near the discovery work for that claim. Area to be explored is 120 feet by 50 feet and includes the area of DMEA sample #15. There are to be four (4) trenches each 50 feet long and 40 feet apart, cutting across the estimated trend of the ore, a total of 200 feet of trenching.

Stage 2

Shaft C-1 - Bluestone Fraction Claim.

The shaft is to be sunk at the most favorable appearing place after completion of the trenching, or part of the trenching. Shaft to be sunk down on the vein following it as well as possible, to be 4'x 7' inside the 6"x 6" timber sets. It is currently estimated that the vein, or ore zone, dips so steeply that the shaft may be vertical. The shaft will be started as a pit to as deep as possible without hoisting equipment, possibly 10 feet deep. By that time it will be fairly well known what the inclination of the shaft and headframe can be. Cost estimates are based on the assumption that the shaft will be vertical and will have to be lagged throughout to protect workers from the possible fall of small rock fragments. The headframe is to be minimum height for efficient working conditions for the exploration work, probably about 16 feet high. Rock will be dumped directly into a mine car at the shaft collar and no bin will be constructed. One hundred (100) feet of lateral work as drifts and crosscuts, all in ore as much as possible, are to be run from the shaft at horizons and in directions to be determined as the work progresses. Rock from the lateral work will be shoveled into small portable hoisting buckets transported to and from the shaft on small dolly trucks on mine track of 18" gauge. Weight of rail to be used will be whatever is available at the most economical price per foot of track, delivered at the mine.

Recent work at the Bluestone area shows that the vein zone is in excess of 6 feet in width in some places.

The drifts and crosscuts are to be 5 feet wide by 7 feet high, and it is expected that almost no timbering will be required in the drifts and crosscuts.

Shaft C-2 - Junction Claim.

Same conditions as Shaft C-1 but with respect to the Trenching at C-2.

Both shaft areas are to be worked simultaneously; two (2) hoists and two (2) compressors are to be rented from the outside. There will be a total of eight (8) men plus the superintendent at the property. Two (2) men will be underground at each shaft, one (1) hoistman at each shaft, and two (2) other top men to attend to timber framing, hauling water, sharpening bits, attending to machinery, and tramming muck from the shafts.

Work done with a smaller crew would involve more elapsed and working time and would cost as much, or more, than if done as planned.

Information under the item numbers in the original application apply unless amended below.

3.(a) Thirty-six (36) claims are now held by lease. All claims can be included in the contract. The lien Form MF 203 signed recently includes 18 claims and includes the Bluestone, Bluestone Fraction, Junction, and Junction Fraction claims

[illegible] CONTRACTING CORP.
357 California Street
San Francisco 4, California

Mr. E. D. Miller - Page 2
Regional Director
U. S. Bureau of Mines

March 2, 1957

Starting from D-2 - last week of November start the discovery work for that shaft. Have to be completed in 180 work by 30 hours and involves the sum of 7[illegible] cubic yds. There are to be 8 hour (4) transfers each 5 hours long and 4 work crews, working around the additional transf of the ore, a total of 200 hours or [illegible].

Shaft 1

Shaft 1-1 - Strategic Location Plan.

The shaft is to be sunk at the most favorable strategic place, after completion of the investigation, or part of the investigation. Shaft to be sunk from on the main [illegible]. Locating it as well as possible, to be 4'x 7' inside the 6'x 8' timber ring. It is currently estimated that the rock, or ore zone, dips so steeply that the shaft may be vertical. The shaft will be started as a pit to as deep as possible without building extensive work, possibly 10 feet deep. By that time it will be definitely known where the intersection of the shaft and beneficiation zone is. Work continues and more on the assumption that the shaft will be vertical and will have to be lined. Effort just to produce workers from the possible full of small work stoppages. The beneficiation will to be minimum height for efficient working conditions for the station work, roughly about 15 feet high. Ore will be carried directly into a mine car on the shaft collar and no bin will be constructed. The lateral (1.4) feet of lateral work or drifts and crosscuts, all in ore as much as possible, are to be [illegible] from the shaft at horizons and in directions to be determined as the work progresses. Work from the lateral work will be extended into small workings relating back to transported to and from the shaft on small dolly, hauls a mine truck of 1½ tons. Timber or rock to be used will be whatever is available in the most economical which may look of brush, delivered at the mine.

Lateral work at the Discovery area shows that the vein zone is in excess of 6 feet in width in some places.

The drifts and crosscuts are to be 5 feet wide by 7 feet high, and it is expected that almost no timbering will be required in the drifts and crosscuts.

Shaft 1-2 - Production Plan.

The conditions at shaft 0-1 are with respect to the Production at 1-1.

Both shaft areas are to be worked simultaneously the (2) miners and the (2) production are to be started in the shaft. There will be a total of 24 (4) men plus the supervisors at the property. The (2) men will be transferred at work shaft, one (1) helper at each shaft, and the (4) other men to assist to timber framing, hauling rocks, shipping ties, attending to machinery, and transfer work from the shaft.

Work here with a smaller crew would involve more elapsed and working time and work as much, or more, than if done as planned.

Information under the item numbers in the original application apply unless [illegible] [illegible].

2.(a) Twenty-eight (28) claims are now held by lease. All claims are in the name of the company. The Lien Form 27 203 signed recently features 15 claims and the [illegible] under the Alaska Mineral Location, Junction, and Juneau Precision [illegible]

3.(a) continued

and covers all of the area of interest in this revised application and a considerable area surrounding the areas of proposed exploration. The claims held are shown on the attached property map, which is the result of a new transit survey and an amending of the original claims.

The claims marked with brown at the claim names are included in the recently signed lien form.

3.(d) There have been minor changes in the lease agreement by which the royalty free period is extended and the minimum royalty payments reduced.

5.(b) Proposed work at the revised Project C is described in the attached letter and is indicated on the new attached map.

6.(b) The Superintendent's salary as far as the Government contract is concerned will be $600 per month. Recent work at the mine shows that all wages will have to be $2.00 per hour. It may be possible to pay $1.90 per hour to some unskilled labor but it is expected that $2.00 will have to be paid to get able men. Estimates are based on an average $2.00 rate.

Work will be on a 6-day per week basis which, at $2.00/hr., averages $17.33 per man shift.

6.(c) Operating materials and supplies.

Two (2) small pits, or shafts, recently sunk in the Bluestone area indicate that the shafts might have to be lightly timbered for the full depth of the shafts to conform to California State law, as it now appears that some of the ground spalls lightly after blasting and exposure. To avoid harmful fall of small rock fragments, the shafts may have to be lagged. For the estimates it has been assumed that the shafts will have to be timbered with 6"x 6" sets, and lagged with 2"x 12" lagging, and that the shafts will probably be vertical and be lined with 1"x 12" boards in the hoisting compartments. Small hoisting buckets will be used, and in the drift work it is planned to use the same portable buckets on dolly trucks. If the shafts can be inclined, then skids will be used and the shaft lining can be omitted and the amount of lagging probably reduced.

6.(d) Depreciation of operator owned equipment.

See Sheet 12 of original application.

The Tractor-Dozer will not be extensively used in the DMEA work and is therefore to be only on company account. The 105 Compressor and Truck will be used and are to be depreciated as shown in the new tabulation, which is at 1/60th of the estimated value per month.

The two (2) hoists and two (2) larger compressors will be rented from outside owners in order to keep down the total cost of the exploration work. Costs are shown in the tabulation.

[illegible] FUNDAMENTAL [illegible]
[illegible] California Street
San Francisco 4, California

Mr. K. H. Miller - Page 3 March 8, 1955
Regional Director
U. S. Bureau of Mines

3.(a) continued

and covers all of the area of interest in this review and includes a considerable area surrounding the areas of proposed exploitation. The coking coal and clays on the [illegible] property, which is the result of a new tremendous energy and an abundance of the original alloys.

This mining region with areas of the clay veins are included in the geologic [illegible] like for.

3.(b) There have been minor changes in the lease arrangement by which the [illegible] [illegible] is entered and the minimum royalty payments reduced.

3.(b) Progress work of this revised Project 6 is concerned in the [illegible] [illegible] [illegible] on the [illegible] [illegible].

3.(b) The [illegible] [illegible] as far as the Government personnel is concerned [illegible] [illegible] per month. Present work at the mine shows that [illegible] [illegible] [illegible]

PANAMINT TUNGSTEN MINES
351 California Street
San Francisco 4, California

Mr. H. C. Miller - Page 4
Regional Director
U. S. Bureau of Mines

March 2, 1953

6.(f) New buildings, etc.

The cookhouse-boardinghouse is to be 24'x 12' in plan, wood frame construction, 1" wood walls, craft paper lined against the inside of the wood walls, corrugated metal roofing, 6 windows, 2 doors. Equipped with small cook stove, board table, benches. Estimated cost includes labor, about 25% of the total estimated $3,000 cost. There are two (2) trailer houses, company owned, at the camp now. A total of five (5) will be needed. A small change house-washroom-shower facility is necessary. The change house will be partitioned into two (2) rooms, will be 10'x 20' in plan, and same construction as the boardinghouse.

Very truly yours,

PANAMINT TUNGSTEN MINES

Walter W. Johnson

Walter W. Johnson
Manager

WWJ:C
Enc.

		1ST STAGE	2ND STAGE	
	TOTALS	TRENCHING	SHAFT SINKING	DRIFTING
Wages, Salaries, & Feed		1600 ft. 5-man crew	200 ft. 8 men	200 ft. 8 men
Calendar Shifts	187	54	106	27
Elapsed time - days	223	65	126	32
Man shifts	1,334	270	848	216
$ Wages @ $17.33/shift including overtime	$23,020	$4,580	$14,696	$3,744
Superintendent 8 mos. @ $600	4,800	1,200	3,000	600
Consulting Geologist & Engineer	2,000	500	1,250	250
	$29,820	$6,280	$18,946	$4,594
Supplies				
Explosives, wire	$ 2,700	$1,000	$ 1,000	$ 700
Fuel: compressors, hoists & truck (gasoline)	2,500	600	1,500	400
Steel & bits (T. Carbide)	474	160	200	114
Bit sharpening wheels	60	15	30	15
6 Picks, 12 shovels	80	22	47	11
Batteries for U.V. Light	56	16	32	8
Timber @ $125/M bd.ft.	3,200	0	2,870	330
Hanging rods, nuts & W	100	0	100	0
Nails & spikes, 300#	32	0	32	0
Miscellaneous: ropes & blocks, pipe fittings & valves, Jim Crow, 3/4-ton pull lift hoist, pinch bars, 2 single jacks, docking saw, xcut saw, Diston adjustable saw, misc. small tools	200	20	140	40
	$ 9,402	$1,833	$5,951	$1,618

	TOTALS	1ST STAGE TRENCHING	2ND STAGE SHAFT SINKING	2ND STAGE DRIFTING
Equipment				
Depreciation on				
105 Compressor - operator owned valued at $2,400	$ 320	$ 100	$ 160	$ 60
Truck - operator owned valued at $600	80	25	40	15
Rental - from outside				
1 - 210 compressor @ $7.50/day	1,710	525	945	240
1 - ditto	1,185	0	945	240
2 - gasoline driven hoists with cables	750	0	600	150
Purchase				
1 - rock drill w. handles & legs	375	375	0	0
1 - ditto	375	0	375	0
Bit sharpener	185	0	185	0
400 ft. 2" blk. pipe @ 50¢/ft.	200	50	75	75
400 ft. 1" blk. pipe @ 25¢/ft.	100	0	50	50
4 - 50-ft. 1" air hoses w. fittings @ $50	200	100	100	0
4 - 50-ft. 3/4" water hoses w. fittings @ $40	160	0	80	80
2 - water pressure tanks w. hoses and fittings @ $50	100	0	50	50
2 - air line oilers @ $55	110	40	40	30
1 - electric blasting machine	57	0	57	0
600 ft. 20# rail for 300 ft. track w. spikes, fish plates, bolts	338	0	113	225
2 - hoisting buckets @ $100	200	0	200	0
2 - dolly trucks & 2 buckets	300	0	0	300
2 - mine cars at shaft collars	250	0	250	0
2 - head frames - welded or timber, installed	400	0	400	0
	$7,395	$1,215	$4,665	$1,515

	TOTALS	1ST STAGE TRENCHING	2ND STAGE SHAFT SINKING	2ND STAGE DRIFTING
Miscellaneous				
Maintenance: truck, 3 compressors, 2 hoists, 3 drilling machines (outside work & parts)	$ 300	$ 50	$ 200	$ 50
Accounting, reports, etc. San Francisco office	1,000	280	580	140
Liability insurance	30	8	18	4
Compensation insurance	3,060	636	1,946	478
Pay-roll taxes	1,168	243	743	182
Boardinghouse op. loss	2,000	0	1,600	400
Contingencies	2,000	600	1,100	300
	9,558	1,817	6,187	1,554
Grand Total	$56,175	$11,145	$35,749	$9,281

New Buildings, Installations (Includes labor)

Boardinghouse-kitchen equipped	$ 3,000
Change house, washroom, shower, w. fixtures	2,200
3 Trailer houses, to make total of 5 at mine	2,400
	~~XX,600~~
	~~$63,XXX~~
Storage shed for tools, supplies, equipment, 12'x 14'x 8' high	500
	8,100
	$64,275

FILE COPY
SURNAME:

Martin
Selfridge
Montenegro

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

JAN 2 1953

Mr. H. C. Miller
Executive Officer, DMEA Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA 2807 - Tungsten
Panamint Tungsten Mines
Bluestone, et al. claims
Inyo County, California

Dear Mr. Miller:

On December 18, 1952, we referred the subject docket to your office for a field examination, and we are sending you, under separate cover, supplemental data on the same project. These data are contained in Sheets 4 through 13 and a map scaled 400 feet to the inch.

The Operator's covering letter gave us the following information:

> "The size of the drifts are not mentioned in the application but they will be 5' wide by 7' high. The size of the shafts will be 5' wide by 8' long in plan with a possible maximum size of 6' by 9'. As far as we can tell, the ground stands very well and requires little timbering."

As you will note immediately, the project as proposed will require revision. The items mentioned below need investigation:

(1) We would approve a supervisor's salary up to $600.00 per month if the superintendent worked only on the exploration project, or up to that rate for the proportion of his time worked on the project if he were also engaged in supervising other operations. Any salary beyond $600.00 per month should be for the sole account of the Operator.

(2) With a superintendent earning $600.00 per month, the consulting geologist should not be required more than once a week. Expenses above $15.00 per day would not ordinarily be approved for a consultant at $50.00 per day.

(3) Equipment devoted to the project by the Operator can be charged against the project on a depreciation basis of 1/60 (one sixtieth) of its fair value per month and should not be shown as rental.

(4) To the extent that the installations are shared between men on project work and men on production work, the costs of such installations should be pro-rated.

(5) The "Miscellaneous" and "Contingencies" items appear to be out of line with the scale of the project and should be adjusted to suit the size of the project that the field examination finds is warranted.

(6) Project "C" is unacceptable insofar as it contemplates sinking a shaft close to the boundary of a claim excluded from the exploration project. Please make clear to the Operator that DMEA cannot aid projects of work prosecuted primarily for mining or preparation for mining. Trenching to a depth of 20 feet with a dozer looks more like mining than exploration.

(7) Project "F" should be undertaken only if the Operator's independent exploration on the Junction claim indicates that the ore in the southwestern part of that claim might extend into the Frederick. In that event we would also have to consider whether trenching through 15 feet of overburden and an additional 5 feet of bedrock would not be mining rather than exploration.

(8) Project "B" with its network of cross and longitudinal trenches, including one trench with a nearly vertical face of 25 feet at the upper end, also seems more like mining than exploration.

(9) In all probability you will find that the project, if warranted, should be planned in stages. Possibly Stage I would consist of enough dozer work to determine whether the shaft of Project "A" is justified. Then Stage II might include sinking on Project "A" and dozer work on Projects "D" and "F" to determine whether a second shaft is justified.

(10) We are particularly interested in knowing promptly how closely you can check the WO_3 assays given in Mr. F. H. Frederick's report of December 1, 1952, which was attached to the subject application.

Sincerely yours,

Frank E. Johnson (JHB)

Chairman, Operating Committee

Approved:

J. H. Hedges (JHB)

Member, Bureau of Mines

A. R. Kinkel, Jr. (JHB)

Member, Geological Survey

WSMartin:ls 12/24/52

CC: Docket
Admn. Read. File
Field Team, Reg. 3
Code 400

CC: D. M. Lemmon, USGS
R. W. Geehan, USBM
Operating Committee

J.H. 1-2-53

WALTER W. JOHNSON COMPANY
PLACER MINING
CONSULTATION EQUIPMENT-DESIGN CONSTRUCTION
351 CALIFORNIA STREET
SAN FRANCISCO 4, CALIFORNIA
TELEPHONE: SUTTER 1-4537
CABLE ADDRESS: RETLAW

dmea 2807

December 17, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 22 1952

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

Attention Mr. Selfridge

Gentlemen:

We are enclosing supplemental data for application Form MF-103 for the following:

Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

This supplemental data is contained in Sheets 4 to 13, inclusive, and map. Sheets 6 to 9 are specific descriptions of the six (6) projects and are part of Item 5. (b).

We trust that this additional data, together with the geological report submitted on December 10 in Washington by the writer, may be sufficient to meet your requirements. The map attached to the data herewith shows the specific location of the work on the projects and is part of the data in Sheets 6 through 9.

We are enclosing three (3) extra copies of the map in case you should need additional copies.

Seven (7) copies of the property owner's Lien Form MF-203 are also enclosed. The lien form does not show the new total of the possible loan if the application is granted as made out. The total money estimated for the project is $78,570.91. The DMEA part of that would be $58,928.18. We are requesting the owners to sign additional liens conforming to the new amount applied for, namely $58,928.18.

The size of the drifts are not mentioned in the application but they will be 5' wide by 7' high. The size of the shafts will be 5' wide by 8' long in plan with a possible maximum size of 6' by 9'. As far as we can tell, the ground stands very well and requires little timbering.

Very truly yours,

PANAMINT TUNGSTEN MINES

Walter W. Johnson

Walter W. Johnson
Manager

WWJ:C
Enc.

P.S. If any additional information is quired, will you, in order to save time, please telephone us collect at this San Francisco address, SUtter 1-4537.

Supplemental information - Form MF-103 - Sheet 4

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DEC 23 1952

Item No.

6.(a). Independent Contracts. - None

(b). Labor, supervision, consultants.

4 Miners @ $2.00/hr.
2 Laborers @ $1.75/hr.
1 Tractor operator-Truck Driver-Mechanic-Compressor Operator @ $2.25/hr.
1 Superintendent @ $760 per month
Part time Consulting Geologist @ $50/day plus expenses. Estimated total fee and expenses to project's completion is $3,000.

Note: Total wages, salaries and fees and distribution to the 6 projects is shown on another sheet attached hereto.

(c). Operating materials and supplies are listed on attached sheet showing cost distribution to the 6 separate projects.

(d). Operating Equipment. - Rental and purchase costs of equipment is shown on an attached sheet showing distribution cost to the 6 separate projects.

(e). Rehabilitation and Repairs. - None

(f). New Buildings, Improvements, Installations. - Room and board facilities will have to be provided for the working crew. House trailers for sleeping two men each can be purchased for $800 each trailer and will have considerable value at the time of completion of the project. Three house trailers costing a total of $2400 will house 6 men. A cook house with boarding table and complete equipment can be constructed and equipped for $3000. These items are listed on the attached distribution and totals sheet. Other camp facilities and accommodations will be supplied at operators expense.

(g). Miscellaneous.

Estimated costs of repairs and maintenance of the compressors, tractor-dozer, truck, and drilling machines is shown on the attached distribution and totals sheet.

Estimated costs of assays, accounting costs, office preparation of reports to the DMEA, compensation insurance, liability insurance, payroll taxes and boarding house operating losses are shown on the attached distribution and totals sheet.

Supplemental information - Form MF-103 - Sheet 5

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Item No.

6.(h). Contingencies.

A total of $ 3,500.00 is estimated to cover possible contingencies due to possible breakdown of equipment, unforeseen overtime pay, poor labor and miner work, higher pay to keep men on the job if wage rates rise elsewhere, and due to unforeseen conditions in the condition of the rock to be drilled and blasted - such as loose, gravelly ground, or extremely hard drilling rock.

7.(a). Yes.

Supplemental information - Form MF-103 - Sheet 6

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Project A:

The purpose of this project is to make a series of surface trenches in areas of ore now exposed at the surface in the George D. and Walter J. claims to see if there is an ore shoot in the area, and then to sink a shaft 100 feet deep on a high grade ore showing in a shallow trench now existing at the place of the location work in the Walter J. claim.

In the George D. claim the trench work is to be done by drilling and blasting. There are to be 6 trenches 25 to 50 feet long across the limestone beds, 5 to 10 feet wide, and 3 to 5 feet deep. If ore is found by that work then there are to be two trenches in the best ore areas at right angles to the first 6 trenches, each to be 50 feet long, 5 to 10 feet wide, and 3 to 5 feet deep in the ore zone defined by the first 6 trenches. Work in the George D. claim is to be confined to a known ore area in the south west part of the claim, covering about 550 feet in length, roughly parallel to the side lines.

Surface work in the Walter J. claim is to be 8 trenches made by drilling and blasting in the known ore areas, and by trenching with the tractor-dozer down slope to the east and to the south of the known ore areas, along extensions of the strike lines of the two visible ore leads. The dozer trenches to be 75 to 100 feet long, and 10 to 15 feet wide. The drilled and blasted trenches are to be in presently exposed bed rock and in bed rock exposed by the dozer trenches to expose ore for lamping and sampling. Six of the drilled and blasted trenches are to be 10 to 20 feet long crossing the ore leads and two of the trenches are to be 100 feet long each, along the ore leads, depth to be 3 to 5 feet.

Crude access roads will be built to the two areas of surface work by the dozer and a limited amount of drilling and blasting. Road work will require 8 days with the dozer, and 3 days drilling and blasting by two men.

Surface trenching by the dozer will require 3 days. Drilling and blasting in the trenches will require 20 days for 3 men, including moving time with equipment to separate trenching places on the project.

A shaft is to be sunk in the high grade showing at the Walter J. claim in the approximate center of the area to be trenched, as indicated on the attached property map. The shaft is to be 100 feet deep, with 50 feet of lateral work to be done on ore showings, near the bottom of the shaft. Total manpower for the shaft and drifting work and related preparation of headframe and hoist will be 70 shifts each for 3 men.

Estimated total elapsed time for project A: 5 months. Total cost and breakdown shown on accompanying tabulation sheets.

Supplemental information - Form MF-103 - Sheet 7

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Project B:

The purpose of Project B is to determine the surface extent of ore exposed in 5 open cuts now existing in the Steep Hill claim. Ore and surface indications are exposed over an area about 100 feet wide by 600 feet long as indicated on the attached property map. Trenches are to be made by dozer work in two trenches 100 feet long each, at the lower end of the ore zone, and by drilling and blasting into the bed rock in the bottoms of the proposed dozer trenches and by extending into the bed rock from the ends of the dozer trenches, and at 4 other trench areas, in bed rock, making a total length of drilled and blasted trenches of 1250 feet. The blasted trenches to be 5 feet deep; one trench will be run more like an open cut with a nearly vertical face of 25 feet at the upper end.

A crude tractor road will be built with 2 days work with the dozer and two days work by two miners drilling and blasting.

The trench and open cut work will require 2 days with the dozer and 40 days for two men (one miner and one helper). Total elapsed time for the project: 2 months. Total cost and breakdown shown on accompanying tabulation sheet.

Project C:

To explore the surface and underground for continuation of known tungsten ore in the Blue Stone Claim and to explore the surface for tungsten ore in certain other areas of the Blue Stone, Bond Street Extension No. 1, and Doggy Extension No. 1 Claims where geological indications for tungsten ore discoveries are very good.

Surface trenching by tractor-dozer, for 2 days, in known areas of scheelite mineralization is to total 900 feet in 6 crosscut trenches and two trenches along the general strike of the exposed veinlets of quartz, as indicated on the map in the Blue Stone claim. The dozer trenches are to be from 2 to 5 feet deep to expose the bed rock. Then the dozer trenches are to be deepened 3 to 5 feet by drilling and blasting at any ore showings exposed by the dozing. Other ore showings at bed rock areas now exposed are also to be trenched by drilling and blasting to make trenches 3 to 5 feet deep. A total of 20 shifts each for a miner and helper will be required in the drilling and blasting work.

A shaft is to be sunk at a good grade ore showing now exposed in the Blue Stone Claim where there is now a shallow trench and small ore dump. The location of the proposed shaft is marked on the property map attached herewith. The shaft is to be 100 feet deep and is to follow the ore which dips steeply. A level is to be run from the shaft, near the proposed bottom of the shaft, in NE and SW directions along the ore zone a total distance of 200 feet. A total of 100 shifts each for 2 miners and one helper-hoistman will be required.

Supplemental information - Form MF-103 - Sheet 8

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco, California

Project C: (Cont'd)

Additional dozer trenching is to be done in loose valley fill or alluvium at 3 separate places as designated on the property map in the NW part of the Blue Stone claim and the southerly parts of the Doggy Extension No. 1 and Bond Street Extension No. 1 claims. Each trench to be 300 feet long, and to find bed rock, probably at 10 to 20 feet from the present surface. The trenches are to be 200 to 250 feet apart. If ore showings are found in the dozer trenches then some drilling and blasting into the bed rock should be done to more thoroughly expose the ore for sampling and lamping. Such drilling and blasting should total one weeks work for one miner and a helper. Road construction to the areas of Project C can be done by a total of one day with the tractor-dozer.

Total work required will be 223 miner-shifts, 123 helper shifts, and 18 dozer operator shifts. Total elapsed time will be 6 months.

Project D:

Purpose is to explore for surface and downward extension of tungsten mineralization in the Doggy quartz vein in certain places in the Doggy claim and in the north end of the Doggy Extension No. 1 Claim, and to explore other tungsten ore showings in the silicified limestone formation at three other areas in the Doggy and Doggy Extension claims.

Work in the Doggy Extension claim will be done by tractor-dozer trenching to clear away the loose material at the foot of the ridge, in preparation for trench work by drilling and blasting at the same trenches. Dozing will be done in three trenches about 100 feet apart, each trench to be about 150 feet long and to bed rock which should be about 10 to 15 feet fromthe present surface. Eight shifts with the dozer should do that work.

Other dozer work will be to clear loose surface material away from 10 other spots on the vein where drilling and blasting of the bed rock is to be done to make small trenches and test pits. About two shifts with the dozer should do all such clearing work. The dozer will be used to make crude roads to the various areas where the compressor will be used for drilling and blasting. Road work will require three days with the dozer and 4 days for oneminer and one helper drilling and blasting. Nine drilling and blasting trenches in the Doggy quartz vein, about 50 to 100 feet apart, are planned. Eleven other trenches are planned in the project in the other areas of ore showings. Each of those 20 trenches is to be 3 to 5 feet deep into bedrock and about 6 to 15 feet long across the strike of the vein showings. The length of the trenches being dependent upon the width of the tungsten mineralization. About 20 shifts each for a miner and a helper will be used in this work.

A shaft is to be sunk 100 feet deep on the Doggy quartz vein near the south end of the claim at the place designated on the property map. A total of 200 feet of lateral workings (drifts) is to be run from the shaft along the vein near the bottom of the proposed shaft. A total of 100 shifts each for two miners

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Project D: (Cont'd)

and one helper-hoistman will be used in the shaft sinking and drifting work. The total number of shifts for the entire Project D will be 13 days for the dozer operator, 224 miner shifts, and 124 miner's helper shifts. Total elapsed time should be approximately 5 months.

Project E:

Purpose of this project is to explore for lateral extension of tungsten ore between two ore showings known at the surface in the Windy Gap-1 and 2 claims, and to explore for extension on the same northerly-southerly strike beyond the two showings. Exploration to be done by trenching with the tractor-dozer to clear away loose surface material on the hill slopes and in the valley wash area, and by drilling and blasting into bed rock at the bottom of the dozer trenches. Work to be done in 10 trenches from 50 to 100 feet long at 50 to 100 feet apart, and 2 to 15 feet deep by dozing, and 3 to 5 feet deep by drilling and blasting in the bottoms of the dozer trenches.

Total time for tractor-dozer work will be 10 days for the trenching, and 3 days for road building. Other manpower requirements will be 27 days each for one miner and one helper on the trenching, and 3 days each on road building. Total elapsed time will be 1.5 months.

Project F:

Purpose of this project is to explore for the southerly extension of the ore zone exposed in the Junction claim along the fault zone or near the contact zone. Exploration to be done in the Frederick claim by 4 dozer cuts in the alluvium covered slopes and valley, and by drilling and blasting in the bottoms of the dozer trenches on any ore indications discovered. The trenches are to be 4 in number, varying in length from 150 to 300 feet, in depth from 5 to 15 feet by dozer work and 3 to 5 feet into bedrock at the bottoms of the dozer trenches where ore indications may be discovered by the proposed dozer work. Width of the dozer trenches is to be 8 to 12 feet, width of the drilling and blasting trenches to be 3 to 5 feet. Total combined length of all the dozer trenches is to be 800 feet. No road construction is required on this project. Dozer operating time will be about 6 days, drilling and blasting time for one miner and one helper will be about 20 days. Elapsed time for the project will be about one month.

Supplemental information - Form MF-103 - Sheet 10

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

	Totals		Project A		Project B		Project C		Project D		Project E		Project F	
	Shifts	$	Shifts	$	Shifts	$	Shifts	$	Shifts	$	Shifts	$	Shifts	$
6.(b) Wages, Salaries, Fees.														
* Miners @ $2.00/hr.	725	$12,564.28	183	$3,171.39	42	$ 727.86	226	$3,916.58	224	$3,881.92	30	$ 519.93	20	$ 346.60
* Laborers (helpers @ $1.75/hr.	435	6,598.95	93	1,410.81	42	637.14	126	1,911.42	124	1,881.08	30	455.10	20	303.40
* Tractor, Truck, Compressor Operator @ $2.25/hr.	200	3,900.00	55	1,072.50	10	195.00	55	1,072.50	55	1,072.50	15	292.50	10	195.00
Superintendent		5,600.00		1,400.00		800.00		1,400.00		1,400.00		300.00		300.00
Consulting Geologist		3,000.00		700.00		400.00		700.00		700.00		300.00		200.00
		31,663.23		7,754.70		2,760.00		9,000.50		8,935.50		1,867.53		1,345.00
6.(c) Supplies.														
Explosives		7,300.00		1,600.00		900.00		1,900.00		1,800.00		600.00		500.00
Fuel: Tractor-Dozer, Diesel		400.00		100.00		30.00		100.00		100.00		40.00		30.00
Compressors, Gasoline		2,000.00		450.00		100.00		550.00		700.00		100.00		100.00
Truck, Gasoline		280.00		80.00		20.00		80.00		80.00		10.00		10.00
Steel and Bits		240.00		60.00		20.00		70.00		70.00		10.00		10.00
Sharpening Wheels (stones)		50.00		12.00		8.00		12.00		12.00		3.00		3.00
6 Picks, 6 Shovels		60.00		10.00		10.00		10.00		10.00		10.00		10.00
2 Wheelbarrows		98.00		40.00		40.00		10.00		8.00		-		-
Batteries for U.V. lights		80.00		20.00		10.00		20.00		20.00		5.00		5.00
Timber: Mine and Ties		850.00		250.00		-		300.00		300.00		-		-
Head Frames		120.00		40.00		-		40.00		40.00		-		-
Ladders		210.00		70.00		-		70.00		70.00		-		-
Pipe Fittings and Wrenches		100.00		30.00		4.00		30.00		30.00		3.00		3.00
		11,788.00		2,762.00		1,142.00		3,192.00		3,240.00		781.00		671.00
6.(d) Equipment.														
Rentals - Operator Owned:														
* D-7 Tractor-Dozer		1,200.00		300.00		90.00		300.00		300.00		120.00		90.00
* 105 Sullivan Compressor		320.00		70.00		20.00		90.00		110.00		15.00		15.00
* GMC Truck		100.00		25.00		15.00		25.00		25.00		5.00		5.00
Purchases:														
2-210 Compressors, Used, Gasoline		7,200.00		2,000.00		400.00		2,100.00		2,200.00		300.00		200.00
2-Copco Rock Drill Machines & Legs		750.00		210.00		40.00		220.00		230.00		30.00		20.00
1-Bit Sharpener		185.00		50.00		10.00		55.00		60.00		5.00		5.00
2" Black Pipe- 1400 ft. @ 50¢		700.00		200.00		50.00		200.00		200.00		25.00		25.00
1" Black Pipe- 1000 ft. @ 25¢		250.00		70.00		20.00		70.00		70.00		10.00		10.00
3-50 ft. lgths 1" Air Hose w/ftngs		150.00		40.00		10.00		40.00		40.00		10.00		10.00
3- " " 3/4" Water " "		120.00		30.00		10.00		30.00		30.00		10.00		10.00

Supplemental information - Form MF-103 - Sheet 11

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

	Totals $	Project A $	Project B $	Project C $	Project D $	Project E $	Project F $
6.(d) Equipment. (Cont'd)							
Rail for 400 ft. Mine Track (plus spikes & fish plates) 2 tons @$180	$ 450.00	$ -	$ -	$ 225.00	$ 225.00	$ -	$ -
* 2- Mine Hoists, Gasoline, w/Cable	2,000.00	600.00	-	700.00	700.00	-	-
* 2- Hoisting Buckets	300.00	100.00	-	100.00	100.00	-	-
* 4- Mine Cars, 18 cu.ft.	500.00	160.00	-	170.00	170.00	-	-
	14,220.00	3,855.00	660.00	4,325.00	4,460.00	530.00	390.00
6.(f) New Buildings, Installations.							
Boarding House - Kitchen, equipped (25% labor)	3,000.00	900.00	150.00	900.00	900.00	90.00	60.00
3 House Trailers	2,400.00	650.00	110.00	750.00	800.00	50.00	40.00
Water Tank, 1000 gal., installed	250.00	75.00	15.00	75.00	75.00	5.00	5.00
	5,650.00	1,625.00	275.00	1,725.00	1,775.00	145.00	105.00
6.(g) Miscellaneous.							
Maintenance:							
Compressor, repairs, etc.	200.00	60.00	10.00	60.00	60.00	5.00	5.00
Tractor-Dozer, repairs, etc.	2,400.00	600.00	180.00	600.00	600.00	240.00	180.00
Truck, repairs, etc.	100.00	25.00	15.00	25.00	25.00	5.00	5.00
Assays	1,100.00	250.00	100.00	300.00	300.00	75.00	75.00
Accounting, San Francisco Office	800.00	210.00	60.00	220.00	220.00	50.00	40.00
DMEA Reports, Preparation	800.00	210.00	60.00	220.00	220.00	50.00	40.00
Compensation Insurance	3,197.74	831.54	259.60	902.33	905.90	172.42	125.95
Liability Insurance	31.97	8.31	2.60	9.02	9.06	1.72	1.26
Payroll Taxes (4.2%)	1,219.97	317.50	99.12	344.53	345.89	64.84	48.09
Boarding House Operating Loss	2,000.00	600.00	100.00	600.00	600.00	50.00	50.00
	11,849.68	3,112.35	886.32	3,280.88	3,285.85	713.98	570.30
6.(h) Contingencies.	3,500.00	1,000.00	300.00	1,000.00	1,000.00	100.00	100.00
Totals	$78,570.91	$20,109.05	$6,023.32	$22,523.38	$22,696.35	$4,037.51	$3,181.30

Supplemental information - Form MF-103 - Sheet 13

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Distribution of Labor to Headings

	Project A		Project B		Project C		Project D		Project E		Project F	
	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts	Footage	Man-Shifts
Drifting	50	40M 20H	-	-	200	100M 50H	200	100M 50H	-	-	-	-
Shafts	100	100M 50H	-	-	100	100M 50H	100	100M 50H	-	-	-	-
Dozer Trenching	1,000	3D	200	2D	1,800	17D	750	10D	750	10D	800	6D
Trenching	1,320	40M 20H	1,250	40M 40H	1,400	26M 26H	500	20M 20H	500	27M 27H	500	20M 20H
Roads	1,500		800		600		1,000		1,200		-	
Dozer		8D		2D		1D		3D		3D		-
Drill and Blast		3M 3H		2M 2H		- -		4M 4H		3M 3H		- -
Truck Driver-Compressor Operator		44D		6D		37D		42D		2D		4D
Totals		183M 93H 55D		42M 42H 10D		226M 126H 55D		224M 124H 55D		30M 30H 15D		20M 20H 10D

Note: M - At Miners Wage Rate
H - At Helpers Wage Rate
D - At Tractor-Truck-Compressor Operator Wage Rate

Supplemental information - Form MF-103 - Sheet 12

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

* Foot Notes:

Item No.

6.(b) Wages, Salaries, Fees: Work will be on a 6 day per week basis. Project and totals figures include overtime.

6.(d) Rentals:

The operator owns 3 pieces of equipment that will be rented to the projects for the time period of the projects, as follows:

A D-7 Caterpillar Tractor, with dozer blade.
Value $9,000. Rental for 8 months $1200.00.

A Sullivan 105 cu. ft./min., gasoline driven air compressor.
Value $2400.00. Rental for 8 months: $320.00.

A GMC truck for hauling water and general use.
Value $600.00. Rental for 8 months: $100.00.

Total rental of the above equipment for the estimated 8 months operation on the projects is $1620.00. Distribution between the 6 projects is shown on the cost estimate sheets.

Purchases:

Purchase cost of two mine hoists with cables, and hoisting buckets, and purchase cost of 4 mine cars for use at the 3 shaft sinking and underground levels exploration projects are distributed between the 3 projects in proportion to the estimated amount of use at each project, not more than two underground operations will be run at one time.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of California, County of Inyo, described as follows: 1/ Fourteen mining claims, as follows: Bluestone, Bluestone Extension, Bond Street, Bond Street Extension, Bond Street Extension-1, Doggy, Doggy Extension, Doggy Extension-1, Frederick, George D., Steep Hill, Walter J., Windy Gap-1, Windy Gap-2, all held by a lease, dated Nov. 1, 1952, from Thad C. and Jo L. Greene recorded in Book _____ and Page _____ official records of said county.

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2/ Panamint Tungsten Mines, a partnership. (Partners are as follows: Walter W. Johnson, Manager, Room 910, 351 California Street, San Francisco 4, California. George J. O'Brien, and William M. Maxfield.)

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production 3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 45,000.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 15TH day of DECEMBER, 1952.

Thad C. Greene [Seal]
Thad C. Greene

_____ [Seal]

Jo L. Greene [Seal]
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4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

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(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of California, County of Inyo, described as follows: 1/ Fourteen mining claims, as follows: Bluestone, Bluestone Extension, Bond Street, Bond Street Extension, Bond Street Extension-1, Doggy, Doggy Extension, Doggy Extension-1, Frederick, George D., Steep Hill, Walter J., Windy Gap-1, Windy Gap-2, all held by a lease, dated Nov. 1, 1952, from Thad C. and Jo L. Greene recorded in Book _____ and Page _____ official records of said county.

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

2/ Panamint Tungsten Mines, a partnership. (Partners are as follows: Walter W. Johnson, Manager, Room 910, 351 California Street, San Francisco 4, California. George J. O'Brien, and William M. Maxfield.)

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production 3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 45,000.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 15TH day of DECEMBER, 1952.

Thad C. Greene [Seal]
Thad C. Greene

_____ [Seal]

Jo L. Greene [Seal]
Jo L. Greene

1/ 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 cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

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

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Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

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hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production 3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 45,000.00, or ten years have elapsed from the date of the contract.

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Dated this 15th day of DECEMBER, 195 2.

Thad C. Greene [Seal]
Thad C. Greene

_____ [Seal]

Jo L. Greene [Seal]
Jo L. Greene

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FILE COPY
SURNAME:

Rutledge
Martin for
Selfridge
Lemon
Buckel
G. Johnson

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

DEC 18 1952

Mr. Walter W. Johnson
Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Re: Docket No. DMEA 2807 - Tungsten
Panamint Tungsten Mines
Inyo County, California

Dear Mr. Johnson:

Your application for assistance in exploring the referenced property near Skidoo in Inyo County, California, has been reviewed by the Iron and Ferro-Alloy Division of the Defense Minerals Exploration Administration and has been referred to Mr. [illegible] C. [illegible]iller, Executive Officer, DMEA Field Team, Region III, 1012 Flood Building, 870 Market Street, San Francisco 2, California, for a field examination.

The Regional Office will contact you at an early date in regard to the examination of your property. Any assistance that you can render the field team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

S.H.
12-18-52

FARutledge:ls 12/17/52

CC: Docket
Admn. Read. File
Field Team, Reg. 3
F. A. Rutledge
G. C. Selfridge
D. M. Lemmon, USGS
R. W. Geehan, USBM

400

FILE COPY
SURNAME:

Rutledge
Washington
Selfridge
Geehan

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

DEC 18 1952

Mr. H.C. Miller
Executive Officer, DMEA Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA 2807 - Tungsten
Panamint Tungsten Mines
Inyo County, California

Dear Mr. Miller:

Reference is made to the subject docket which is being referred to your office for a field examination.

The application does not contain the cost data necessary to prepare an exploration contract. In addition, two claims, the Junction and Blue Stone Fraction, are not included in the exploration program because the applicant plans to start production of tungsten from the deposits on these claims.

The examining field team will need to discuss the program of exploration with the operators and obtain more definite information on the location, type, and amount of work proposed for each area. All of the data required for the preparation of Exhibit "A" of a contract should be obtained during the examination and representative samples taken.

A memorandum from Mr. M.D. Crittenden, U. S. Geological Survey, is enclosed for your information.

S.H. 12-18-52

Sincerely yours,

(Signed) FRANK H. JOHNSON

Chairman, Operating Committee

Enclosures

Copy to: Docket
Admn. Read. file
Field Team, Reg. 3
Oper. Committee
F. A. Rutledge
G. C. Selfridge
D. M. Lemmon, USGS
R. W. Geehan, USBM

Approved:

Member, Bureau of Mines

A. R. Kinkel, Jr.

Member, Geological Survey

FARutledge/ls 12/17/52

IN REPLY REFER TO:
G-MD-CF

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

December 15, 1952

Memorandum

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DEC 15 1952

To: G. C. Selfridge

From: M. D. Crittenden

Subject: DMEA 2807 (Tungsten)
Panamint Tungsten Mines
Room 910, 351 California Street
San Francisco, California

The Property

The applicants are leasee-operators of a group of 31 claims known as the Panamint Tungsten Mines or Greene Scheelite Mines, in Inyo County, California. The property is about 4 miles south of the abandoned mining camp of Skidoo, and is less than a mile distant (but apparently entirly separate) from the Red Rock claims which were the subject of DMA 2194X.

The Proposal

The applicants propose to spend a total of $60,000 to do extensive surface prospecting and a smaller amount of underground exploration on 6 claims on which there are either surface showings in prospect pits, or favorable geological indications. In addition, they propose to develop the most promising claims without assistance.

The details of the work to be done in the 6 areas are given on pp. 5 to 8 of the report by Francis H. Frederick that is attached to the docket. Some of the prospecting suggested seems like rather a long shot, and may be unsuitable for assistance. Other projects should undoubtedly be prepared in two stages, if at all.

Geology and Recommendation

The property to be explored is in an area of faulted limestones cut by numerous silicified zones or quartz veins containing scheelite.

Copy retained 400

The Geological Survey has no information about these claims, and suggests the docket be referred to the field.

Mark D. Crittenden Jr

M. D. Crittenden

December 10, 1952

Panamint Tungsten Mines
Walter W. Johnson, Mgr.
Room 910, 351 California St.
San Francisco 4, California

Subject: DMEA-2807
Re: Exploration Assistance
Panamint Tungsten Mines

My dear Mr. Johnson:

The receipt of your application dated December 9, 1952 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-2807 and referred to the Iron and Ferro-Alloys Division.

Kindly refer to DMEA-2807 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

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

25451

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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-2807
Metal or Mineral
Date Received 12/10/52
Estimated Cost
Participation (Government %)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 10 1952

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: Walter W. Johnson, Mgr., Panamint Tungsten Mines, Room 910, 351 California Street, San Francisco 4, California, a partnership. Partners: Walter W. Johnson, George J. O'Brien, William M. Maxfield. (Addresses on attached sheet, (item 1.d)

(*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 Thirty-one mining claims held by a lease in a new tungsten district in Inyo County, California, in the Panamint Range of mountains. Details given on attached sheet, Item 3.(a).

(*b*) State any mine name by which the property is known. Panamint Tungsten Mines

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Lessee.

(*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. Herewith, item 3.(d)

(*e*) If you own the land, describe any liens or encumbrances on it Not owned.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. All claims are unpatented, see attached sheet, item 3.(a).

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 Tungsten in the mineral scheelite.

(*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 10 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)?

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

[X] Money [X] 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 December 9, 1952

Panamint Tungsten Mines
(Applicant)

By Walter W. Johnson
Walter W. Johnson, Mgr. & Partner

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

Supplemental information - Form MF-103 - Sheet 1

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Item No.

1. Applicant is a partnership.

The names and addresses of all the partners are as follows:

Walter W. Johnson, 910 Balfour Building, 351 California Street, San Francisco 4, California.

William M. Maxfield, 535 Russ Building, San Francisco 4, California.

George J. O'Brien, c/o Executive Offices, Standard Oil Co. of California, West Olympic Blvd., Los Angeles, California.

3.a. Thirty-one mining claims are held by a lease from the owners who hold the claims by location. The claims are in the Death Valley National Monument in the Panamint Range of mountains, Inyo County, California, about 4 miles by graded road, toward the old mining camp of Skidoo, from the paved road running between Wildrose Station and Stovepipe Wells. The following list of claims is the complete list of claims held at the present time. By the time this application is processed there may be additional claims held but not necessarily a part of this application. The claims in the following list marked out by underscoring are not to be included in the exploration contract.

Inyo County Official Records

Claim	Book No.	Page No.
Blue Stone Fraction	65	448
Junction	65	181
Blue Stone	65	205
Blue Stone Extension	65	447
Bond Street	65	133
Bond Street Extension	65	185
Bond Street Extension #1	65	207
Doggy	65	135
Doggy Extension	65	183
Doggy Extension #1	65	203
George D	65	449
Grover K.	65	451
Steep Hill	64	579
Walter J.	65	453
White Star No. 1	65	103
White Star No. 2	65	105

Supplemental information - Form MF-103 - Sheet 2

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Inyo County Official Records (Continued)

Claim	Book No.	Page No.
Bond Street Fraction	to be recorded	
Bosky	" " "	
Boxer	" " "	
David	" " "	
Douglas	" " "	
Frederick	" " "	
Kitty	" " "	
Long Pull	" " "	
Milicent	" " "	
Molly	" " "	
Steep Hill No. 1	" " "	
William M.	" " "	
Windy Gap No. 1	" " "	
Windy Gap No. 2	" " "	
Winnie M.	" " "	

Item No.

3.(d). See attached white photostats of lease agreement.

4.(a). The mine area is a new tungsten district not previously explored for tungsten. A new camp is now being established by the applicant at the property. A limited amount of surface work has been done, mostly amounting to location work of the mining claims. A few of the claims have been open cut additionally along ore zones by means of drilling and blasting. There has been no production from the property. Facilities for mining and exploration are being established now. A portable compressor is at the property, a D-7 Caterpillar tractor dozer has been ordered and is to be delivered early in December, 1952. Two Company owned trailer houses are ordered for early December delivery at the mine, and cabins will be constructed as needed.

(b). There has been no production from the property held. Ore reserves are indicated and inferred only, there is no knowledge of depth of ore in the area. The deepest workings on the property is 15 feet below surface. Assays of ore exposed in the various cuts range from 0.2%WO_3 to 14%WO_3. Estimated grade of possible ore bodies to be subject of exploration contract range from 0.4%WO_3 to 1.0%WO_3 for open cut mining at widths of 6 to 30 feet. Lengths and depths of those ore areas are unknown and are to be explored by the work proposed in this application.

The property and workings are fully and easily accessible for complete examination. Snow does fall in the area but it is rare, and it does not lie on the ground for more than two or three days if it should snow. Elevation is 5,100 feet in an arid region.

Supplemental information - Form MF-103 - Sheet 3

Applicant: Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Item No.

4.(c). Geologic features and reasons for wishing to explore are covered in the separate report by our consulting geologist, Francis H. Frederick. Report attached to this application. Property map showing geology and project areas is attached to the report.

(d). Roads to the property are excellent. Oiled road to within 4 miles of the property. No steep grades. Nearest convenient shipping and supply point is Argus or Trona, 56 and 57 miles, respectively, southerly in the northwest corner of San Bernardino County. Residence points are not conveniently located and are being established at the property.

(e). Manpower is available for the work planned. Power will be diesel and gasoline power, fuel to be hauled from supply points.

Water is currently and permanently available from Emigrant Springs, 10 miles by good road from the mine camp. Water will be hauled by tank truck and used from storage tanks. Water for possible future milling operations may be piped in from a higher elevation source 18 miles distant from the mine area. Small scale milling may be done at custom mills from 15 to 170 miles distant, depending upon the grade of ore and size of ore bodies developed.

5.(a). Exploration will be for tungsten ore which is present as the mineral scheelite.

(b). Proposed work is described in the attached geological report by Francis H. Frederick. Projects A to F inclusive. A property map is submitted with that report, showing the general geology andthe location of the projects.

(d). The applicant company is a partnership, the operation of which is under the management of Walter W. Johnson, one of the three partners. Walter W. Johnson is an experienced placer and lode mine manager and administrator. He is now, and has for many years, been head of the Walter W. Johnson Company of San Francisco which has successfully operated mining properties in the western United States, Canada, and Alaska. Mr. William M. Maxfield, a partner, is vice president in charge of operations of the Original Sixteen to One Mine, Inc., a successful gold mine operation at Alleghany, California. The superintendent of the applicant company, Panamint Tungsten Mines, is Mr. George Hellerich, graduate of a recognized mining college, and experienced in responsible operation of lode, placer, and dredge operation for about 30 years. The consulting geologist, Francis H. Frederick, San Francisco, California has been steadily engaged in mining geological work since 1930 in the western United States and has had considerable experience in scheelite-tungsten mining.

MINING AGREEMENT

THIS AGREEMENT, made this 1st day of November, 1952, by and between THAD C. GREENE and JO L. GREENE, his wife, hereinafter called the LESSORS, and WALTER W. JOHNSON, WM. M. MAXFIELD, and GEORGE J. O'BRIEN, hereinafter called the OPERATORS;

W I T N E S S E T H:

In consideration of the sum of Ten ($10.00) Dollars, concurrently herewith paid by the OPERATORS to the LESSORS, and of the mutual promises, covenants, and conditions herein contained, all of which the parties agree to perform on their parts respectively, the LESSORS hereby lease to the OPERATORS the following described mining properties, to wit:

> "WHITE STAR-1", "WHITE STAR-2", "DOGGY", "DOGGY EXTENSION", "BOND STREET", "BOND STREET EXTENSION", "BLUE STONE", "JUNCTION", "STEEP HILL", and any and all other claims contiguous to or in the vicinity of the foregoing which may be now or hereafter located by the LESSORS or on their behalf, and any and all other claims contiguous to or in the vicinity of the foregoing which now or hereafter may be located by the OPERATORS or on their behalf, and which claims are now known as the GREENE SCHEELITE MINE near Skidoo, Inyo County, California;

TO HAVE AND TO HOLD the same together with all, if any, improvements thereon, and all rights and easements appurtenant thereto, and with the right, upon the conditions herein stated, to enter upon, mine, develop and operate said properties and to extract and remove therefrom mineral ores of any kind or character, all as herein specified, for a term of twenty (20) years from and after the date hereof, and so long thereafter as mineral ores of any kind or character are produced therefrom in quantities deemed paying by the OPERATORS.

In consideration of the premises, it is hereby mutually agreed as follows:

1. The LESSORS warrant that the mining claims, rights and appurtenances above-described are valid and in full force and

effect, and that the LESSORS have valid title thereto and the right to transfer and convey the same to the OPERATORS, in accordance with this agreement.

2. The OPERATORS agree to do such assessment work and pay such charges and taxes as may be necessary to maintain the claims and rights of the LESSORS hereinbefore enumerated in good standing for each and every year in which this agreement is in effect, and unless and until the OPERATORS give notice to the LESSORS of their election to terminate this agreement as hereinafter described.

3. The OPERATORS shall be entitled, BUT NOT OBLIGATED ~~but not obligated~~, to mine and operate the properties in the manner they see fit, including both open-cut and drift mining.

4. If, and to the extent the OPERATORS mine the properties, the OPERATORS shall pay the LESSORS a royalty of ten (10%) per cent of the gross value received for all ores sold to a custom mill or from the sale of concentrates produced from OPERATORS' own mill.

5. Concurrently with the execution of this agreement, the OPERATORS agree to pay to the LESSORS the sum of SEVEN THOUSAND FIVE HUNDRED ($7,500.00) ~~Two Thousand Five Hundred ($2,500.00)~~ Dollars ~~as advance royalties, and, on a~~ date six (6) months from and after the execution of this agreement, the further sum of Five Thousand ($5,000.00) Dollars as further advance against said royalties. The LESSORS agree to give credit to the OPERATORS for said advances out of production to the extent of fifty (50%) per cent of the royalty interest of LESSORS in any said production, until said advances have been fully credited. The remaining fifty (50%) per cent of royalties on production shall be paid to LESSORS within fifteen (15) days from and after the date of receipt by the OPERATORS of said payment for ores shipped to a custom mill or refinery or for said refined minerals or concentrates shipped to any purchaser thereof. After full credit has been given ~~for advance royalties~~ The entire royalties on ~~subsequent~~ production shall be paid to LESSORS within fifteen (15) days from and after

the date of receipt by OPERATORS of payment therefor in the manner above specified. ~~The OPERATORS shall not be obligated to make~~ the payment of Five Thousand ($5,000.00) ~~Dollars hereinabove~~ provided for in the event of a ~~prior~~ surrender of the premises and ~~termination of this agreement as hereinafter provided~~.

6. If during any month commencing with a date six (6) months after the execution of this agreement the OPERATORS shall mine the properties, and if the royalty payments made by the OPERATORS to the LESSORS for that month do not total One Thousand ($1,000.00) Dollars, the OPERATORS shall pay the LESSORS an amount sufficient to equal One Thousand ($1,000.00) Dollars at the time and in the manner above specified, and at the end of each year after said date six (6) months from the date hereof the OPERATORS shall be repaid any amounts so advanced, provided that the total royalties paid to the LESSORS exclusive of any said amounts during that year shall be Twelve Thousand ($12,000.00) Dollars or more.

7. The LESSORS shall be entitled to inspect the OPERATORS' books insofar as they relate to the operation of the properties, to receive on demand true copies of all bank, mint, mill or smelter returns, and to have their representative inspect the properties at all reasonable times and be present, if appropriate arrangements are made in advance, at all clean-ups. OPERATORS shall protect the LESSORS from all wage demands and from all damage claims by third persons arising from OPERATORS' operations. OPERATORS shall carry adequate compensation insurance to cover any and all persons employed by the OPERATORS on the premises.

8. All mining operations conducted by the OPERATORS shall be conducted in accordance with good mining practice. The OPERATORS agree to enter upon the said premises and commence

mining thereon as soon after the date hereof as is practicable. During the period of six (6) months from and after the date of this agreement the OPERATORS shall operate said premises with not less than forty (40) shifts of labor per month for the first two (2) months of said period, and with not less than sixty (60) shifts of labor per month thereafter and during the remainder of said six (6) month period. After said six (6) month period has elapsed the OPERATORS shall operate said premises with not less than one hundred and twenty (120) shifts of labor per month, all in a manner calculated to develop and maintain permanent mining operations thereon.

9. This agreement may be terminated by the OPERATORS at any time by giving the LESSORS written notice of intention so to terminate addressed to the LESSORS as hereinafter specified. Upon such termination of this agreement, the OPERATORS shall have a right within one (1) year from the date of the termination to remove from the premises all tools, machinery, equipment, buildings and supplies belonging to the OPERATORS and to remove, mill or ship any mineral ores mined by the OPERATORS prior to such termination date, subject, however, to the LESSORS' right to royalties when payment for said ores or minerals is received by the OPERATORS and in the manner heretofore set forth.

10. If the OPERATORS fail to make any royalty payment to the LESSORS on the due date therefor and said default continues for a period of ninety (90) days after written notice thereof from the LESSORS to the OPERATORS, this agreement shall terminate. Upon said or any termination of this agreement, the OPERATORS shall peaceably surrender the properties to the LESSORS free and clear of any liens or encumbrances thereon created or caused by the OPERATORS, but shall have the right within one year from the date of said or any termination to remove from the premises all tools, machinery, buildings, equipment and supplies belonging to the OPERATORS and to remove, ship or mill all ores mined by the OPERATORS prior to the date of termination, subject, however, to

the LESSORS' rights to royalty payments out of said ores or minerals, which said royalties shall be paid to the LESSORS in the same manner as hereinbefore specified.

11. The OPERATORS shall have the right to shut down or suspend operations on said premises during any period of time. All obligations created by this agreement shall be suspended if and as long as the discharge of those obligations is rendered impossible or unreasonably onerous by acts of God, war, force majeure, labor troubles, or other acts or events beyond the control of the parties.

12. Any notice or statement required or permitted to be given or furnished by one party to the other shall be in writing. Notice to the LESSORS shall be by registered mail and addressed to the LESSORS at Box 4, c/o Wildrose Station, Trona, California. Notice to the OPERATORS shall be sent by registered mail and addressed c/o Walter W. Johnson, 910 Balfour Building, 351 California Street, San Francisco 4, California.

13. The right is expressly granted to the OPERATORS to assign this agreement to any corporation now existent or to be formed by the OPERATORS for purposes of carrying into effect the terms of this agreement, and upon such assignment to any such corporation, the LESSORS accept said corporation in the place and stead of the OPERATORS and subject to the obligations hereof. Otherwise than in this paragraph provided for, this agreement shall not be assigned by either party, without the consent of the other.

14. This agreement shall be deemed fully performed on the part of the OPERATORS during any period of time in which the minimum royalties as herein provided for are being paid to the LESSORS if, during any such period the OPERATORS shall do any and all assessment work necessary to retain possession of said claims as required by the laws of any governmental authority.

15. This agreement shall inure to the benefit of and be binding upon the parties and their heirs and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this instrument on the day and year first hereinabove written.

Thad C. Greene
THAD C. GREENE

Jo L. Greene
JO L. GREENE, his wife

LESSORS

Walter W. Johnson
WALTER W. JOHNSON

Wm. M. Maxfield
WM. M. MAXFIELD

George J. O'Brien
GEORGE J. O'BRIEN

OPERATORS

FRANCIS H. FREDERICK
MINING GEOLOGIST

503 MARKET STREET
SAN FRANCISCO 5, CALIFORNIA
PHONE SUTTER 1-7982

RESIDENCE:
2715 STUART STREET
BERKELEY 5, CALIFORNIA
PHONE ASHBERRY 3-7651

December 1, 1952

Mr. Walter W. Johnson
Panamint Tungsten Mines
910 Balfour Building
351 California Street
San Francisco 4, California

Dear Mr. Johnson:

This letter is a summary report of the information available, and of my recommendations in connection with operation of Panamint Tungsten Mines near Skidoo, Inyo County, California. It is proposed that some of the exploratory work be done with Government assistance in the form of a DMEA loan for 75% of the costs for certain projects. One area, the Junction and Blue Stone Fraction claims, is expected to be productive as soon as camp and operating facilities are established, and is therefore not considered for a DMEA project.

LOCATION, ROADS, and FACILITIES

The property is located in the Panamint Range of mountains on the west rim of Death Valley at about midway between the north and south limits of Death Valley National Monument. It is in the Monument in Inyo County, California. The center of the property is reported to be at West Longitude 117° 06' 02.5" and North Latitude 36° 24' 21.7" as indicated by a notation at a monument said to have been established by the USGS. Elevations on the property range from 5100 to 6,000 feet above sea level. The old gold camp of Skidoo is 3 or 4 miles northerly by road from the property. The location of Skidoo, Emigrant Spring, Wildrose Spring (now Wildrose Station), and other pertinent information are shown on the USGS topographic sheet, Ballarat (1911-1913). Good graded road to Skidoo passes through the property at 4 miles from paved road. The paved road runs northerly and southerly and connects in both directions with State and Federal highways. Northerly, at 15 miles from the mine, it connects with State highway 190 running between U.S. Highway 395 to the west and Death Valley, Death Valley Junction in California, and U.S. Highway 95 in Nevada to the east. Southerly the paved road runs to Wildrose Station at 16 miles from the property, and thence to Trona and Argus in the northwest part of San Bernardino County at 56 and 57 miles, respectively, from the property. Trona and Argus are currently the most convenient mail, telephone, telegraph, supply, and shipping points.

There is no water at the property. Water for all uses is available at Emigrant Springs about 10 miles distant by road. Work at the mine, to date, has been done by hauling water in 50 gallon drums. Water hauling and storage facilities at the mine are being improved. Abundant water supply

can be piped to the property by gravity from a supply at about 18 miles distant and about 4,000 feet higher in elevation. It is estimated that a 4 inch line installed to carry water to the mine from that source might cost about $100,000.

At the present time there are three trailer houses and one small tent on the property. Other housing facilities are to be constructed, and possibly some additional trailer houses will be moved in. A small portable compressor, a flat-bed truck, and a D-7 Caterpillar tractor-dozer owned by the Company are available for performing work on the property.

HISTORY, PRODUCTION, MINE WORKINGS

The property is now a total of 31 claims, totaling about 590 acres, held by location by Thad C. and Jo L. Greene and leased from them by your Company. The area is a new tungsten district and most or all of the claims held for tungsten ore were located in 1952. The Panamint Tungsten Mines is a new name for this area and was adopted in November, 1952. Earlier this year the property was referred to as Greene's mine.

There has been no tungsten production to date from the district. There is a stock pile of about 50 tons of ore containing about 2% WO_3 at a small open cut on one of the claims. Assays of samples from the pile range from 1.95% to 14.0% WO_3.

The workings on the 31 claims are currently limited to small open cuts made by drilling and blasting and mucking out by hand shovels, and a few shafts about 6 to 8 feet deep. There is a total of 16 cuts and small shafts, all showing tungsten ore varying in content from 0.3% to 14.0% WO_3.

A complete list of the claim names is given in Item 3.(a). of the DMEA Application Form MF-103 attached to this report. The claims are all in one block and cover a north-south axis of about 6,000 feet length, and east-west axis of about 9,000 feet. A property map submitted with this report shows all of the claims to date.

GEOLOGY

The tungsten ore is scheelite in quartz veins, quartz seams, and in silicified zones and silica cemented limestone breccias, all in limestone formations. The limestone formations of the area vary considerably in bedding characteristics, color, and dip. Some of the limestone beds are interbedded with shale and quartzite and vary from 3 to 20 feet thick. Other limestone beds are more massive and may be several hundred feet thick without interruption by interbeds of other material. In the northern part of the property area the bedding planes dip southerly at 10 to 20 degrees. In the southerly part of the property there appears to be folding and buckling of the beds near faults and near possible intrusives of aplite and granite. The important mineralization observed to date has been in the general vicinity of the faulted and buckled areas. In the southwest part of the property there is a mass of granite, apparently intrusive into a quartzite and quartz conglomerate formation. Limestone is observed to be in a low angle probable bedding contact on top of the quartzite, and

also in contact with both the granite and quartzite formation at a steep dipping fault. The most important mineralization observed to this time is in a silicious zone in the limestone within a few hundred feet of the fault. That fault appears to strike about N 10° W and is named the Junction Fault as it appears to be importantly related to the high grade ore known to exist in the Junction Claim.

It is possible that the low angle dipping sedimentary formations in the northeast part of the property are much younger in age than the sedimentary formations in the south and west parts where the dips are steeper and the formations may be thicker bedded. In the southeast area of the property there is a rather extensive exposure of schists and phyllites which may overlie the ore bearing limestones to the west along the Junction Fault. Apparently the steep dipping schist formation is separated from the low angle limestones to the north by an E-W fault in the valley between the areas. This E-W fault is termed the East Valley Fault as it apparently runs thru the approximate center line of the east valley wash and then on east thru the Steep Hill Claims. That fault may be closely related to the brecciation, silicification, and mineralization in the Steep Hill and Walter J. Claims.

Most of the mineralization in the area is in small quartz seams or breccia filling in the limestone with the scheelite grain size ranging from 100 mesh to 1/4 inch diameter. One notable exception is the mineralization in the Doggy claim where the scheelite is in a quartz vein 6 feet wide and dipping steeply westerly. The vein is exposed in a number of places thruout the full length of the Doggy claim although it appears to be interrupted and non-existent in a few places along its strike. Scheelite occurs in it as disseminated grains in certain bands in the quartz vein. Scheelite grains are up to 1/4 inch in diameter. A sample of the full 6 feet of vein at one place assayed 0.65% WO_3. In the Bond Street claim, and not far from the Doggy vein, are two narrow veins, 2 inches and 4 inches wide, striking almost at right angle to the Doggy vein and containing from 10 to 20% WO_3 in coarse scheelite crystals.

There is none of the usual tactite type of ore at the property and there appears to be no molybdenum, either as molybdenite or in the scheelite. The scheelite fluoresces blue-white. A few of the silicified breccia spots containing ore are rusty colored and it is possible that work at depth may show some pyrite. It is believed that the pyrite or iron content will not be serious for milling or custom treatment because of the slight amount of iron stain observed.

There is no substantial evidence suggesting the possible depth extent or depth limits of tungsten ore in the district. Certain work is here proposed to attempt to determine the depth possibilities in certain areas, to attempt to show substantial ore reserves and, at the same time, to gain some general knowledge about the depth possibilities of the area as a whole.

The Junction and Blue Stone Fraction claims show high grade ore and additional high grade ore possibilities so it is proposed that the production work be started in those two claims and the ore so produced be

shipped to custom mills or sold to U. S. Vanadium Company at Pine Creek, near Bishop, California. Exploration work should be carried on at 6 areas of important ore showings to attempt to prove a substantial reserve of ore to justify piping water to the property and installing a mill at the property.

It is currently estimated that exploration, development and mine plant costs might amount to $75,000 or $100,000 by the time sufficient ore is measureable to justify spending an additional $200,000 for water and mill at the property. It is believed that 30,000 tons of 0.6 to 0.8% WO_3 ore, or 40,000 tons of 0.4 to 0.6% WO_3 ore would be justification for a complete operation at the property. Study of the property indicates that possibilities are better than the above requirements. Indications are that some shipping grade ore, for treatment at a custom mill or for sale as crude ore, will be found in the course of the exploratory work. Ore containing as little as 0.8% WO_3 would be profitable if mined by open cut methods and treated at a possible custom mill within a $5.00 truck haul. The Company may choose to build a small mill near water at one of several mill sites where water can be made available. Total cost of water and a mill at such a site would be about $100,000. Trucking cost to such a possible mill would be about $2.00 per ton. Under such conditions, ore containing as low as 0.4% WO_3 could be profitably mined and milled.

PROPOSED MINING AND EXPLORATION

OPERATORS PRODUCTION PROJECT

Production of shipping grade ore should be undertaken at the Junction claim open cuts. At the present time there is a stock pile of about 50 tons that contains not less than 2% WO_3, plus an additional pile of about 20 tons containing about 1% WO_3. That 70 tons has come from two shallow open cuts. One cut is 12 feet wide x 18 feet long, the other cut is 6 feet wide x 20 feet long. Both cuts are about 4 feet deep at the centers tapering to the edges. Ore widths represented for the ore grade estimated is 8 and 4 feet respectively. Samples of the ore piles from the open cuts at three stages were as follows: 14.3%, 8.7%, 1.95% WO_3. It is not possible to accurately sample the coarse ore piles at this time as no crushing equipment is available at the property. Judging by U.V. light the 70 tons appears to average better than 2%. Work in the Junction claim should be an extension of the surface open cuts along the ore length and across the width for the full limit of the ore grade material as it is found by the proposed work. Scheelite shows for about 800 feet of distance parallel to the fault zone in the Junction and Blue Stone Fraction claims and over a general width of 50 to 100 feet. Drilling and blasting should be done at all places where scheelite shows by U.V. light because experience at the property shows that the scheelite is often better just below the weathered surface than right at the surface. The best areas found after preliminary clearing with the dozer and preliminary drilling and blasting should be made into open cuts for small scale production. The fissuring, quartz seams, and mineralized breccia in the limestone appears to strike in two directions - parallel to the fault and also at right angle to it. Some attempt should be made to determine the strike and dip of the best ore zones. The open cut work should later be concentrated at one place in an attempt to learn a little about the vertical

extent or behaviour of the ore. None of the work in these two claims, Junction and Blue Stone Fraction, is to be a subject of the possible DMEA contract, by request of the owners of the claims.

PROJECT A

The Walter J. and George D. claims lie side by side just north of the inferred East Valley Fault and have important ore showings. The areas outlined in green on the 400 scale property map submitted with this report show the areas of interest for the proposed work.

The George D. claim has not been sampled but by fluorescent light shows interesting amounts of scheelite in vertical silica seams cutting across the low angle bedding planes of the limestone. A length of about 500 feet, in one particular bed in the limestone, shows scheelite of possible ore grade and should be explored by a series of small open cuts. Work can be done by jackhammer drilling and blasting. Size of ore body to be found by exploration could be anywhere from 1000 tons to 20,000 tons of low grade ore. Proposed work is preliminary in nature as not enough is known in this claim area to warrant proposal of a large program. Mineralization might extend easterly thru the ridge to the Walter J. claim which shows less tonnage but higher grade ore. Work in the George D. claim project might take 20 days of actual work, plus 2 days by the dozer for road work and to move the compressor to convenient points. Total cost will be about $1,000.00 not including geology and supervision.

The Walter J. claim, on the opposite side of the ridge from the proposed work in the George D., shows some high grade ore at a shallow open cut in the steep side hill. The mineralization appears to be in silicious seams at a fault, or fault zone, or fissure zone crossing. The silicious seams strike west into the ridge toward the George D. showing. The fissure zone strikes almost due north. Two samples of ore from the pile obtained from the small, shallow open cut assayed 3.42% and 4.02% WO_3. The high grade spot represented by the samples is about 5 x 5 feet in plan. The grade of the ore is less away from the 5 x 5 spot but ore grade material shows east and west, and north and south in the veins and fissures near the high grade spot. Work proposed is to attempt to extend the area of known ore at the surface by a series of open cuts and then to sink a shaft about 100 feet on the best ore found, and then to drift about 25 feet each way in two directions on the best ore found in the shaft near its proposed bottom. If the ore showing stops in the shaft before 100 feet depth is reached then a level should be run at some higher point to attempt to find or follow the ore there. Preliminary open cut work can be started by the D-7 Caterpillar dozer in certain areas where bed-rock is covered. If important mineralization extends for several hundred feet along either fissure system - either down the slope to the east, or down the slope to the south - then it may be best to run an exploratory adit along the ore showing instead of sinking a shaft. The depth gained would not be as great but the length of ore exposed could be greater and the information would be less expensive and could be just as useful. Estimated total direct cost of Walter J. project: $10,000.00. Total direct cost for Project A: $11,000.00 plus supervision and geology and engineering. Estimated operating time: 5 months.

PROJECT B

The Steep Hill claim at the extreme east end of the property contains an area of silicious seams in limestone between two faults or fissures about 100 feet apart. The quartz seams run about N 30° E up and down the steep hill and are at a considerable strike angle to the possible bounding faults which strike about east and west. The mineralized area is about 100 feet wide and about 400 feet long. It has been opened up by 5 small open cuts from 6 to 8 feet wide and 10 to 15 feet long, each along different groups of the cross seams. Four samples of the material moved from the open cuts, representing the full widths of the 6 feet and 8 feet wide cuts, assayed as follows: 0.34%, 0.67%, 0.77%, and 0.84% WO_3. The present workings expose about 20% of a total length of 80 feet along the mineralized zone between the faults, and 10 to 15 feet of width of a possible 50 or 100 feet width of ore. In order to show a substantial ore possibility in this claim a large area will have to be opened up by means of many shallow cuts in the 100 by 400 feet block. Then a number of cuts should be run well into the steep hillside to establish a high vertical face to show some depth extent. Some of the open cuts might show ore of high enough grade for treatment at a custom mill. If the entire mineralized area proves to be low grade, about 0.4% WO_3, and even if the depth is only 25 or 50 feet there would be 100,000 or 200,000 tons of ore that could be mined on a low cost open cut basis and profitably treated at a possible local mill constructed for such a purpose. Present indications are that a minimum of 10,000 tons of low grade ore will be found here. Estimated direct cost of Project B: $4,000.00. Total time for completion of project: 2 months.

PROJECT C

The inferred East Valley Fault and the inferred Junction Fault should join somewhere in an area just north of the Blue Stone claim where there are some ore showings. The intersection may be in the Doggy Extension No. 1 claim. Some of the ore exposures in the Blue Stone claim are a northerly extension along the inferred Junction Fault zone of the mineralization in the Blue Stone Fraction and Junction claims. It is quite possible that the ore is better under the valley fill where it is believed the two faults join. At about 700 feet south of the possible intersection area the Blue Stone claim shows ore in silicious lime breccia. At about 700 feet north of the possible intersection area the Doggy quartz-scheelite ore vein probably intersects the Junction fault zone. It is believed that the fault intersection area may be highly brecciated, silicified, and mineralized. Exploration should be started with the tractor-dozer because the area is in a basin and is covered with desert valley alluvium. Bedrock might be about 25 feet deep. If it can be exposed by dozer work and if it is that deep it may become necessary to do the bed rock exploration by shaft sinking or by churn drilling or diamond drill core drilling. Lack of water is a problem in the area and drilling may be difficult and costly. If bed rock is too deep for dozer work at the site selected then work can be done both north and south of that site closer to the hills and closer to the bedrock. Project C also includes exploration along the Junction fault and contact zone in the Blue Stone claim. Work can start there, right in the limestone bed rock and proceed northerly into the valley filling until the use of the dozer there becomes undesirable.

There are two other important areas of scheelite exposed in bedrock in the Blue Stone claim 500 and 900 feet east of the Junction fault zone. Part of the work of Project C should be to enlarge the present open cuts at those places and attempt to extend the size of the known ore areas. The main cut in the Blue Stone claims is about 8 feet wide and 30 feet long. A four feet wide band of ore in the center of the length of the cut looks very good. A sample of all of the ore from the north side of the cut, representing a band 4 feet wide by about 30 feet long, assayed 0.70% WO_3. A sample of the waste pile from the same cut, representing the south band of 4 feet width by 30 feet length, assayed 0.2% WO_3. This cut lies in a flat area near the local valley floor and can only be fully explored by means of a shaft and lateral workings from the shaft. After the general area has been prospected by additional open cuts then a shaft should be sunk 50 or 100 feet at one of the best ore areas. Then a level should be run at the bottom of the shaft, on ore bands, for a total lateral distance of 200 feet if the ore showings at that time will justify that amount of work.

Total estimated direct cost of Project C: $15,000.00
Estimated time: 4 months.

PROJECT D

There are two characters of ore in this project. The Doggy claim contains a quartz vein, 6 feet wide, dipping steeply westerly and showing scheelite mineralization thruout its length of over 1,000 feet. The Doggy and the Doggy Extension claims both show, as well, the usual ore of the district - silicious breccia and seams in the limestone formations. All areas showing scheelite in the claim, in the quartz vein and in the breccia and limestone, should be drilled and blasted by trenching in bed rock or by making a series of open cuts. Dozer work at the south end of the claim should be used to expose as much length as possible along the Doggy quartz vein under the valley fill. A shaft should be sunk somewhere near the south end of the exposed vein in one of the best showings of ore. The shaft should be 100 feet deep, and then at least 200 feet of lateral workings should be run near the bottom of the shaft if the ore indications are then as good as they are now at the surface and in the present open cuts and shallow shafts. A sample taken from the dump at one of the 6 feet deep shafts across the full 6 feet width of the vein assayed 0.65% WO_3. The south part of the vein exposed at the surface appears to be better than the north part so it is proposed that the vein be explored more thoroughly at the south part than at the north. Present indications are that the shaft should be placed as far south as operating conditions permit.

Estimated cost of Project D: $15,000.00
Estimated time of operation: 4 months

PROJECT E

There are some showings in the Windy Gap-1 and Windy Gap-2 claims that should be investigated further. No samples have been taken there but by U.V. light it is seen that mineralization could lead to ore discoveries. The limestone of the area is close to contact with the quartzite to the west which may underlie the limestone as well as appearing at the surface

west of the limestone. A series of open cuts should be made in the limestone where scheelite shows. If a substantial showing of ore is found it should be explored further by a large open cut. The southerly part of Windy Gap-1, where the bedrock is covered by valley fill, should be explored and opened up for exploration by means of the Caterpillar-dozer.

Estimated direct cost of Project E: $1,000.00
Estimated operating time: One month

PROJECT F

A new claim, the Frederick, has been located just south of the Junction claim and it should be explored by dozer work along the Junction ore zone extended southerly. If good ore showings are exposed by the dozer work then a shaft or shallow pits will probably have to be made and used to explore the area as it is relatively level and largely covered by valley fill or a thin layer of desert alluvium.

Estimated direct cost of Project F: $1,000.00
Estimated operating time: One month

Summary of Projects

The total time of the exploration projects, if only one project were carried on at a time, would be 17 months. If the three main time consuming projects are carried on at the same time and the other smaller jobs were done as convenient the total time would be reduced to 6 months and the crew would have to be a total of 11 workmen, one dozer operator, and one superintendent. A smaller crew composed of 6 men (miners and muckers), a tractor operator, and a superintendent could do all the proposed work in 10 months. There is probably sufficient margin in the above estimates to allow some time with the same crew for some production work at the Junction area, especially so if the projects are timed to run for 12 months. It will be necessary to install living quarters of some kind for the anticipated crew.

The total estimated direct cost for the 6 DMEA projects is $47,000 not including supervision and consulting geological work. Supervision, geology, housing facilities, purchase or rental of equipment, and contingencies could amount to a total additional $13,000.00. The DMEA application should therefore show a total estimated project cost of about $60,000.00. The DMEA loan would then amount to 75% of that, or $45,000, if all projects were approved as is.

Respectfully submitted,

Francis H. Frederick

Francis H. Frederick

MINING AGREEMENT

THIS AGREEMENT, made this 1st day of November, 1952, by and between THAD C. GREENE and JO L. GREENE, his wife, hereinafter called the LESSORS, and WALTER W. JOHNSON, WM. M. MAXFIELD, and GEORGE J. O'BRIEN, hereinafter called the OPERATORS;

W I T N E S S E T H:

In consideration of the sum of Ten ($10.00) Dollars, concurrently herewith paid by the OPERATORS to the LESSORS, and of the mutual promises, covenants, and conditions herein contained, all of which the parties agree to perform on their parts respectively, the LESSORS hereby lease to the OPERATORS the following described mining properties, to wit:

> "WHITE STAR-1", "WHITE STAR-2", "DOGGY", "DOGGY EXTENSION", "BOND STREET", "BOND STREET EXTENSION", "BLUE STONE", "JUNCTION", "STEEP HILL", and any and all other claims contiguous to or in the vicinity of the foregoing which may be now or hereafter located by the LESSORS or on their behalf, and any and all other claims contiguous to or in the vicinity of the foregoing which now or hereafter may be located by the OPERATORS or on their behalf, and which claims are now known as the GREENE SCHEELITE MINE near Skidoo, Inyo County, California;

TO HAVE AND TO HOLD the same together with all, if any, improvements thereon, and all rights and easements appurtenant thereto, and with the right, upon the conditions herein stated, to enter upon, mine, develop and operate said properties and to extract and remove therefrom mineral ores of any kind or character, all as herein specified, for a term of twenty (20) years from and after the date hereof, and so long thereafter as mineral ores of any kind or character are produced therefrom in quantities deemed paying by the OPERATORS.

In consideration of the premises, it is hereby mutually agreed as follows:

1. The LESSORS warrant that the mining claims, rights and appurtenances above-described are valid and in full force and

effect, and that the LESSORS have valid title thereto and the right to transfer and convey the same to the OPERATORS, in accordance with this agreement.

2. The OPERATORS agree to do such assessment work and pay such charges and taxes as may be necessary to maintain the claims and rights of the LESSORS hereinbefore enumerated in good standing for each and every year in which this agreement is in effect, and unless and until the OPERATORS give notice to the LESSORS of their election to terminate this agreement as hereinafter described.

3. The OPERATORS shall be entitled, BUT NOT OBLIGATED ~~not obligated~~, to mine and operate the properties in the manner they see fit, including both open-cut and drift mining.

4. If, and to the extent the OPERATORS mine the properties, the OPERATORS shall pay the LESSORS a royalty of ten (10%) per cent of the gross value received for all ores sold to a custom mill or from the sale of concentrates produced from OPERATORS' own mill.

5. Concurrently with the execution of this agreement, the OPERATORS agree to pay to the LESSORS the sum of SEVEN THOUSAND ~~Two Thousand~~ FIVE HUNDRED ($7,500.00) ~~Five Hundred ($2,500.00)~~ Dollars ~~as advance royalties, and, on a~~ date six (6) months from and after the execution of this agreement, the further sum of Five Thousand ($5,000.00) Dollars as further advance against said royalties. The LESSORS agree to give credit to the OPERATORS for said advances out of production to the extent of fifty (50%) per cent of the royalty interest of LESSORS in any said production, until said advances have been fully credited. The remaining fifty (50%) per cent of royalties on production shall be paid to LESSORS within fifteen (15) days from and after the date of receipt by the OPERATORS of said payment for ores shipped to a custom mill or refinery or for said refined minerals or concentrates shipped to any purchaser thereof. After full credit has been given ~~for advance royalties~~ The entire royalties on ~~subsequent~~ production shall be paid to LESSORS within fifteen (15) days from and after

MC-103 - Item 3 (d)
Applicant: Pacific Tungsten Mines, 910 Balfour Building, 351 California Street, San Francisco 4, California

the date of receipt by OPERATORS of payment therefor in the manner above specified. ~~The OPERATORS shall not be obligated to make~~ the payment of Five Thousand ($5,000.00) ~~Dollars hereinabove~~ provided for in the event of a ~~prior~~ surrender of the premises and ~~termination of this agreement as hereinafter provided~~.

6. If during any month commencing with a date six (6) months after the execution of this agreement the OPERATORS shall mine the properties, and if the royalty payments made by the OPERATORS to the LESSORS for that month do not total One Thousand ($1,000.00) Dollars, the OPERATORS shall pay the LESSORS an amount sufficient to equal One Thousand ($1,000.00) Dollars at the time and in the manner above specified, and at the end of each year after said date six (6) months from the date hereof the OPERATORS shall be repaid any amounts so advanced, provided that the total royalties paid to the LESSORS exclusive of any said amounts during that year shall be Twelve Thousand ($12,000.00) Dollars or more.

7. The LESSORS shall be entitled to inspect the OPERATORS' books insofar as they relate to the operation of the properties, to receive on demand true copies of all bank, mint, mill or smelter returns, and to have their representative inspect the properties at all reasonable times and be present, if appropriate arrangements are made in advance, at all clean-ups. OPERATORS shall protect the LESSORS from all wage demands and from all damage claims by third persons arising from OPERATORS' operations. OPERATORS shall carry adequate compensation insurance to cover any and all persons employed by the OPERATORS on the premises.

8. All mining operations conducted by the OPERATORS shall be conducted in accordance with good mining practice. The OPERATORS agree to enter upon the said premises and commence

mining thereon as soon after the date hereof as is practicable. During the period of six (6) months from and after the date of this agreement the OPERATORS shall operate said premises with not less than forty (40) shifts of labor per month for the first two (2) months of said period, and with not less than sixty (60) shifts of labor per month thereafter and during the remainder of said six (6) month period. After said six (6) month period has elapsed the OPERATORS shall operate said premises with not less than one hundred and twenty (120) shifts of labor per month, all in a manner calculated to develop and maintain permanent mining operations thereon.

9. This agreement may be terminated by the OPERATORS at any time by giving the LESSORS written notice of intention so to terminate addressed to the LESSORS as hereinafter specified. Upon such termination of this agreement, the OPERATORS shall have a right within one (1) year from the date of the termination to remove from the premises all tools, machinery, equipment, buildings and supplies belonging to the OPERATORS and to remove, mill or ship any mineral ores mined by the OPERATORS prior to such termination date, subject, however, to the LESSORS' right to royalties when payment for said ores or minerals is received by the OPERATORS and in the manner heretofore set forth.

10. If the OPERATORS fail to make any royalty payment to the LESSORS on the due date therefor and said default continues for a period of ninety (90) days after written notice thereof from the LESSORS to the OPERATORS, this agreement shall terminate. Upon said or any termination of this agreement, the OPERATORS shall peaceably surrender the properties to the LESSORS free and clear of any liens or encumbrances thereon created or caused by the OPERATORS, but shall have the right within one year from the date of said or any termination to remove from the premises all tools, machinery, buildings, equipment and supplies belonging to the OPERATORS and to remove, ship or mill all ores mined by the OPERATORS prior to the date of termination, subject, however, to

the LESSORS' rights to royalty payments out of said ores or minerals, which said royalties shall be paid to the LESSORS in the same manner as hereinbefore specified.

11. The OPERATORS shall have the right to shut down or suspend operations on said premises during any period of time. All obligations created by this agreement shall be suspended if and as long as the discharge of those obligations is rendered impossible or unreasonably onerous by acts of God, war, force majeure, labor troubles, or other acts or events beyond the control of the parties.

12. Any notice or statement required or permitted to be given or furnished by one party to the other shall be in writing. Notice to the LESSORS shall be by registered mail and addressed to the LESSORS at Box 4, c/o Wildrose Station, Trona, California. Notice to the OPERATORS shall be sent by registered mail and addressed c/o Walter W. Johnson, 910 Balfour Building, 351 California Street, San Francisco 4, California.

13. The right is expressly granted to the OPERATORS to assign this agreement to any corporation now existent or to be formed by the OPERATORS for purposes of carrying into effect the terms of this agreement, and upon such assignment to any such corporation, the LESSORS accept said corporation in the place and stead of the OPERATORS and subject to the obligations hereof. Otherwise than in this paragraph provided for, this agreement shall not be assigned by either party, without the consent of the other.

14. This agreement shall be deemed fully performed on the part of the OPERATORS during any period of time in which the minimum royalties as herein provided for are being paid to the LESSORS if, during any such period the OPERATORS shall do any and all assessment work necessary to retain possession of said claims as required by the laws of any governmental authority.

15. This agreement shall inure to the benefit of and be binding upon the parties and their heirs and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this instrument on the day and year first hereinabove written.

Thad C. Greene
THAD C. GREENE

Jo L. Greene
JO L. GREENE, his wife

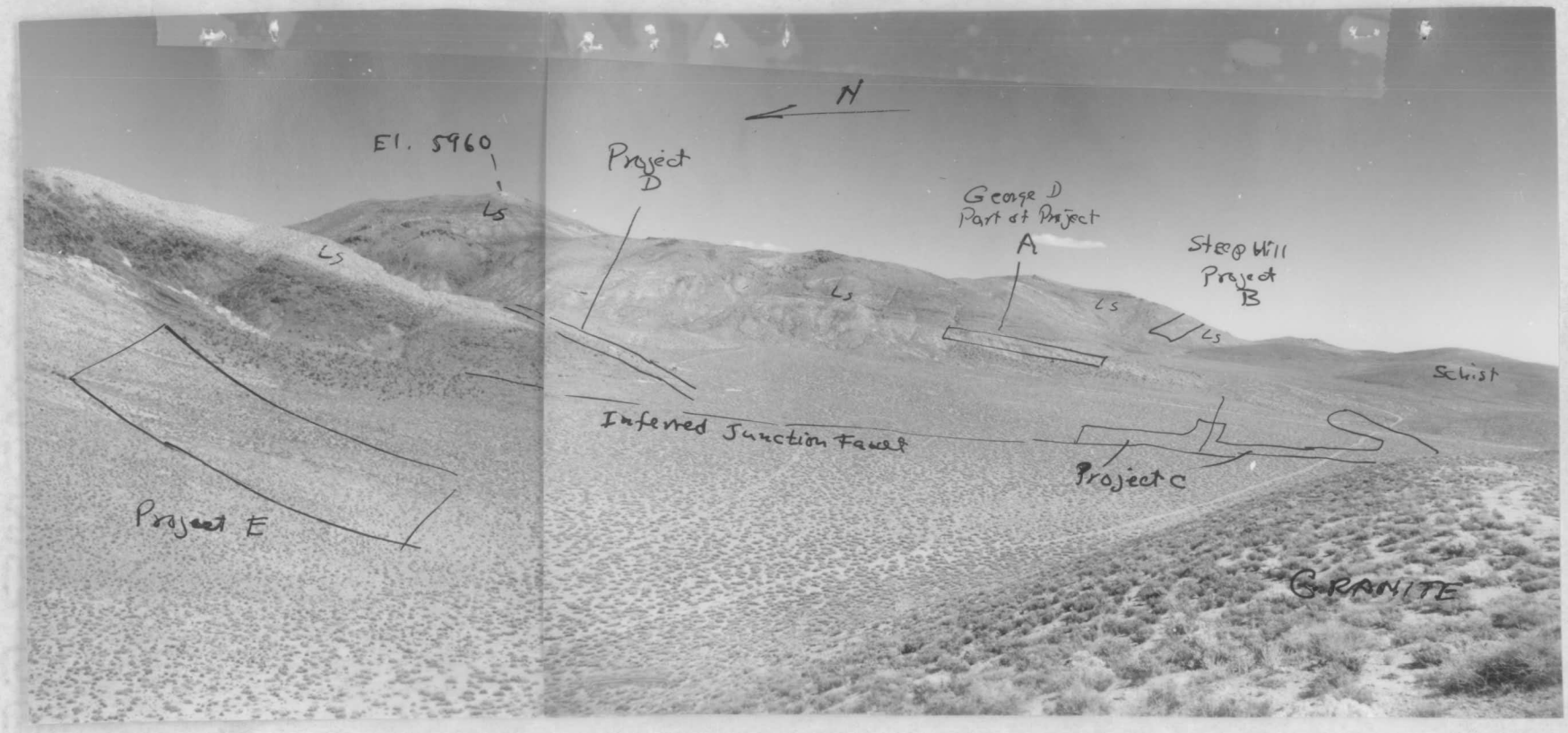
LESSORS.

Walter W. Johnson
WALTER W. JOHNSON

Wm. M. Maxfield
WM. M. MAXFIELD

George J. O'Brien
GEORGE J. O'BRIEN

OPERATORS

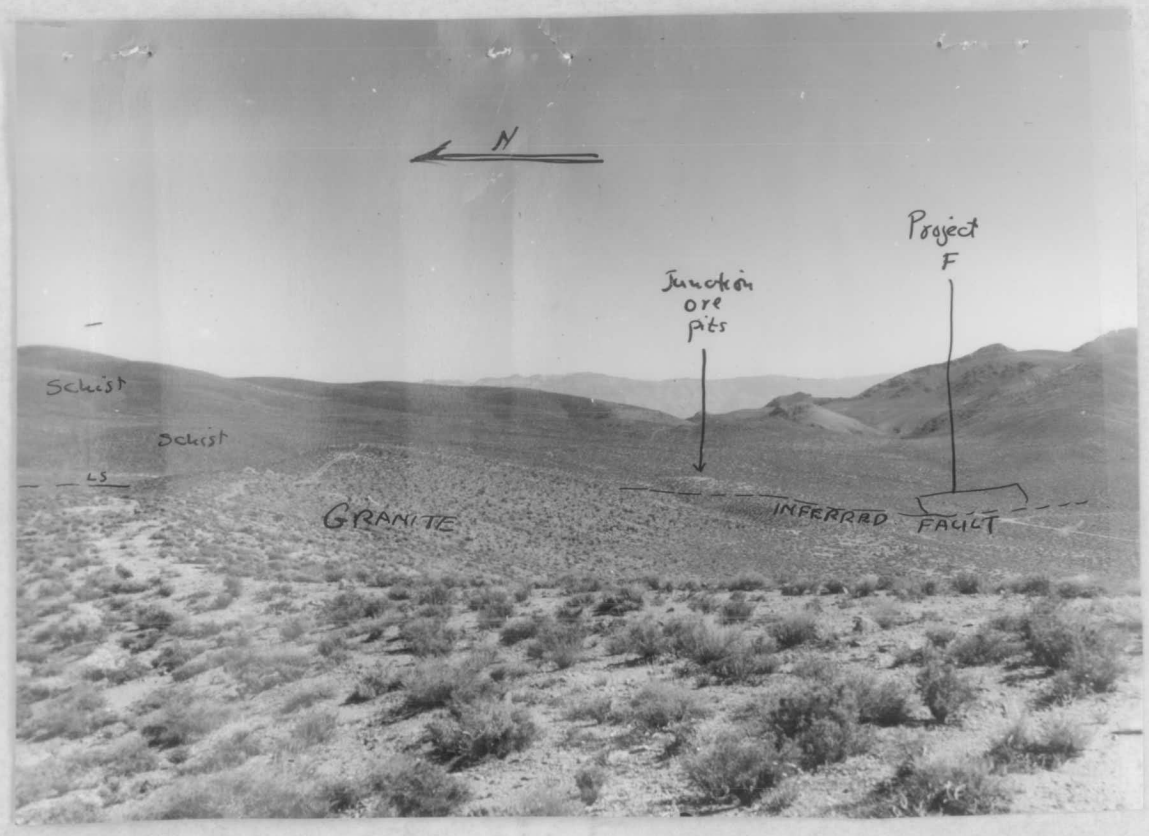


Looking N. 80° E. from White Star Claims

DEA-2807

Looking S. 80° E. from White Star Calims

DOE-2807



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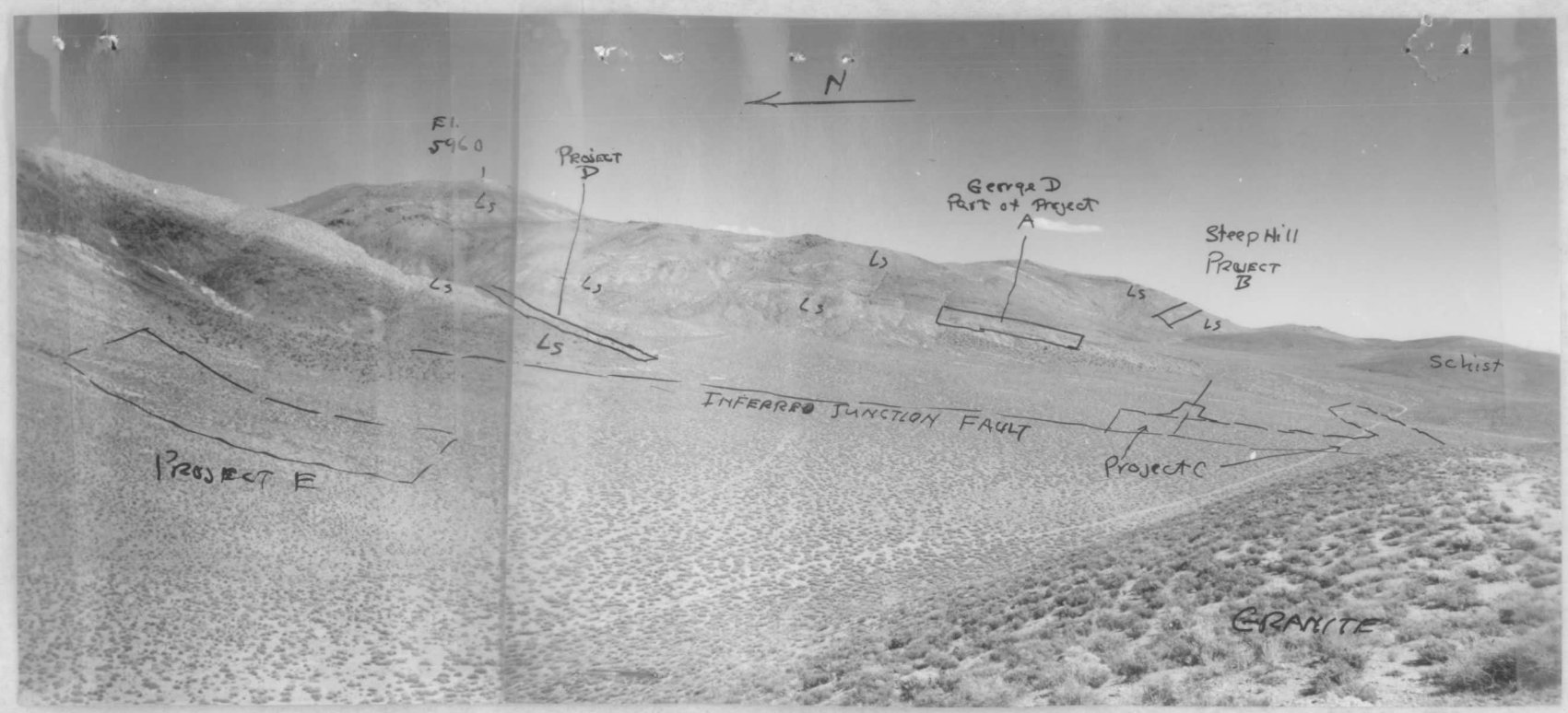
AMEA-2807



Looking N. 80° E. from White Star Calims

1 MCA-2 807

THE WESTERN UNION TELEGRAPH CO.
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NEW YORK 13, N. Y.

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Audits

U.S.DEPT OF THE INTERIOR,
3 BUREAU OF MINES.
WASHINGTON,D.C.

J.D.SECREST,CHIEF CLERK

3 maps enclosed
RMCA-2807

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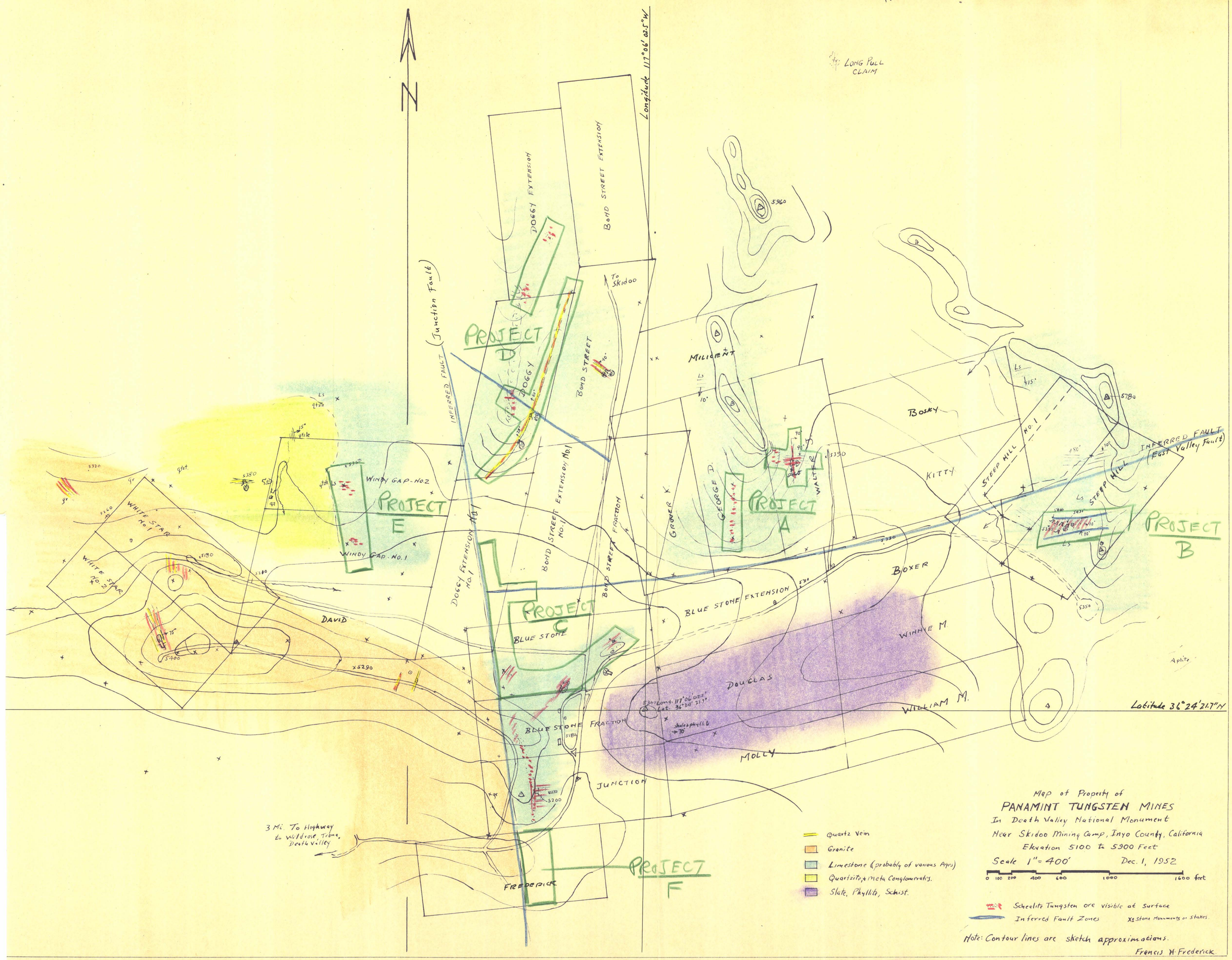
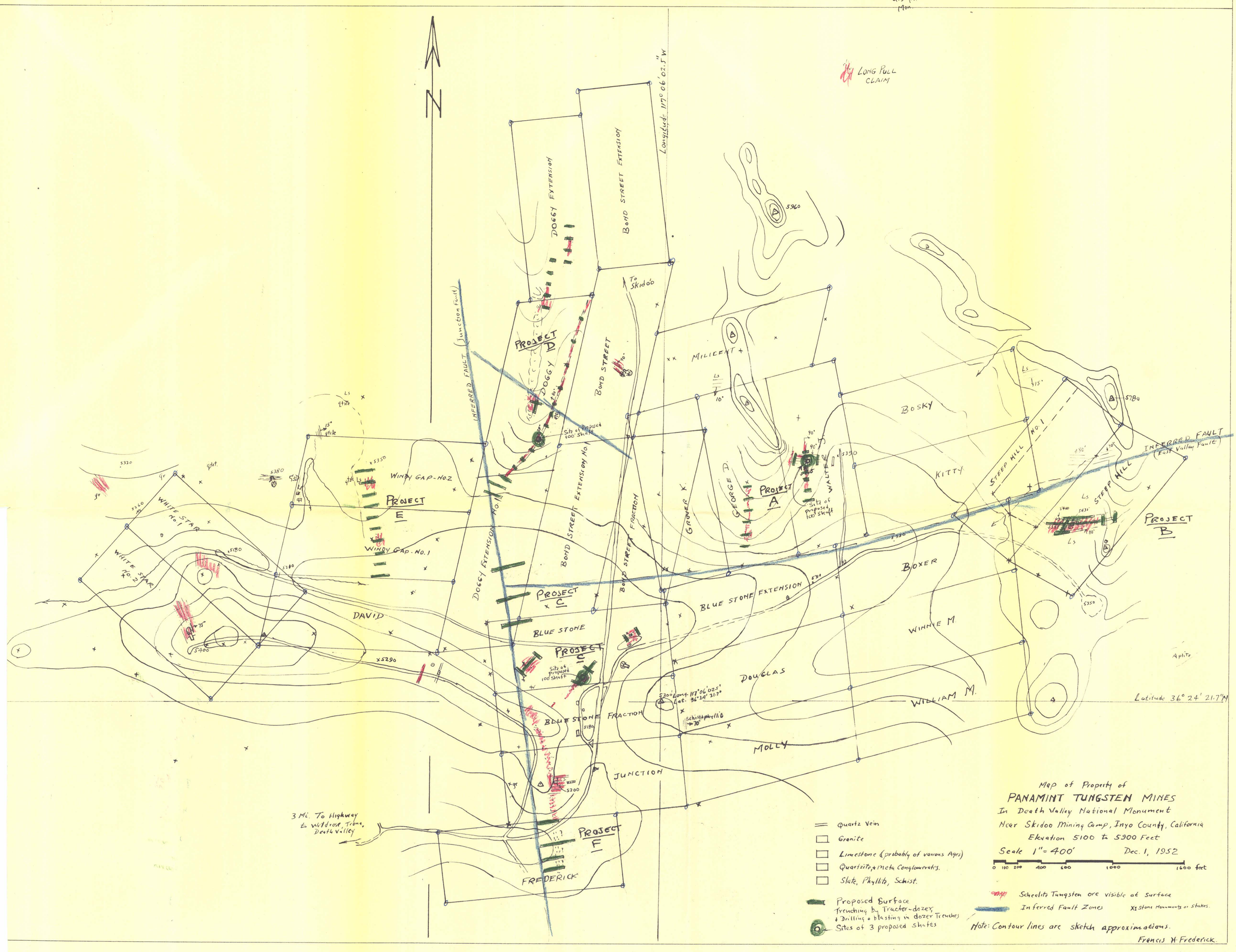


Map of Property of
PANAMINT TUNGSTEN MINES
In Death Valley National Monument
Near Skidoo Mining Camp, Inyo County, California
Elevation 5100 to 5900 Feet
Scale 1" = 400' Dec. 1, 1952
0 100 200 400 600 1000 1600 feet


U.S.G.S. Mon.
LONG PULL CLAIM
N
Longitude 117° 06' 02.5" W
DOGGY EXTENSION
BOND STREET EXTENSION
To Skidoo
PROJECT D
DOGGY
BOND STREET
INFERRED FAULT (Junction Fault)
Site of Proposed 100' Shaft
MILLICENT
BOSKY
KITTY
STEEP HILL
INFERRED FAULT (East Valley Fault)
PROJECT A
Site of Proposed 100' Shaft
WALTER
GEORGE D.
GROVER K.
BOND STREET FRACTION
DOGGY EXTENSION No. 1
BOND STREET EXTENSION No. 1
WINDY GAP-No. 2
PROJECT E
WINDY GAP-No. 1
WHITE STAR No. 1
WHITE STAR No. 2
DAVID
PROJECT C
BLUE STONE
PROJECT C
Site of Proposed 100' Shaft
BLUE STONE EXTENSION
BOXER
WINNIE M.
DOUGLAS
WILLIAM M.
Latitude 36° 24' 21.7" N
Long. 117° 06' 02.5"
Lat. 36° 24' 21.7"
Schist & phyllite
BLUE STONE FRACTION
MOLLY
JUNCTION
PROJECT B
Aplite
3 Mi. To Highway to Wildrose, Trona, Death Valley
PROJECT F
FREDERICK
Quartz Vein
Granite
Limestone (probably of various Ages)
Quartzite, + meta Conglomerates.
Slate, Phyllite, Schist.
Proposed Surface Trenching by Tractor-dozer, + Drilling + blasting in dozer Trenches
Sites of 3 proposed shafts
Scheelite Tungsten ore visible at surface
Inferred Fault Zones
X: stone Monuments or stakes.
Note: Contour lines are sketch approximations.
Francis H. Frederick
Map of Property of
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In Death Valley National Monument
Near Skidoo Mining Camp, Inyo County, California
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Dec. 1, 1952
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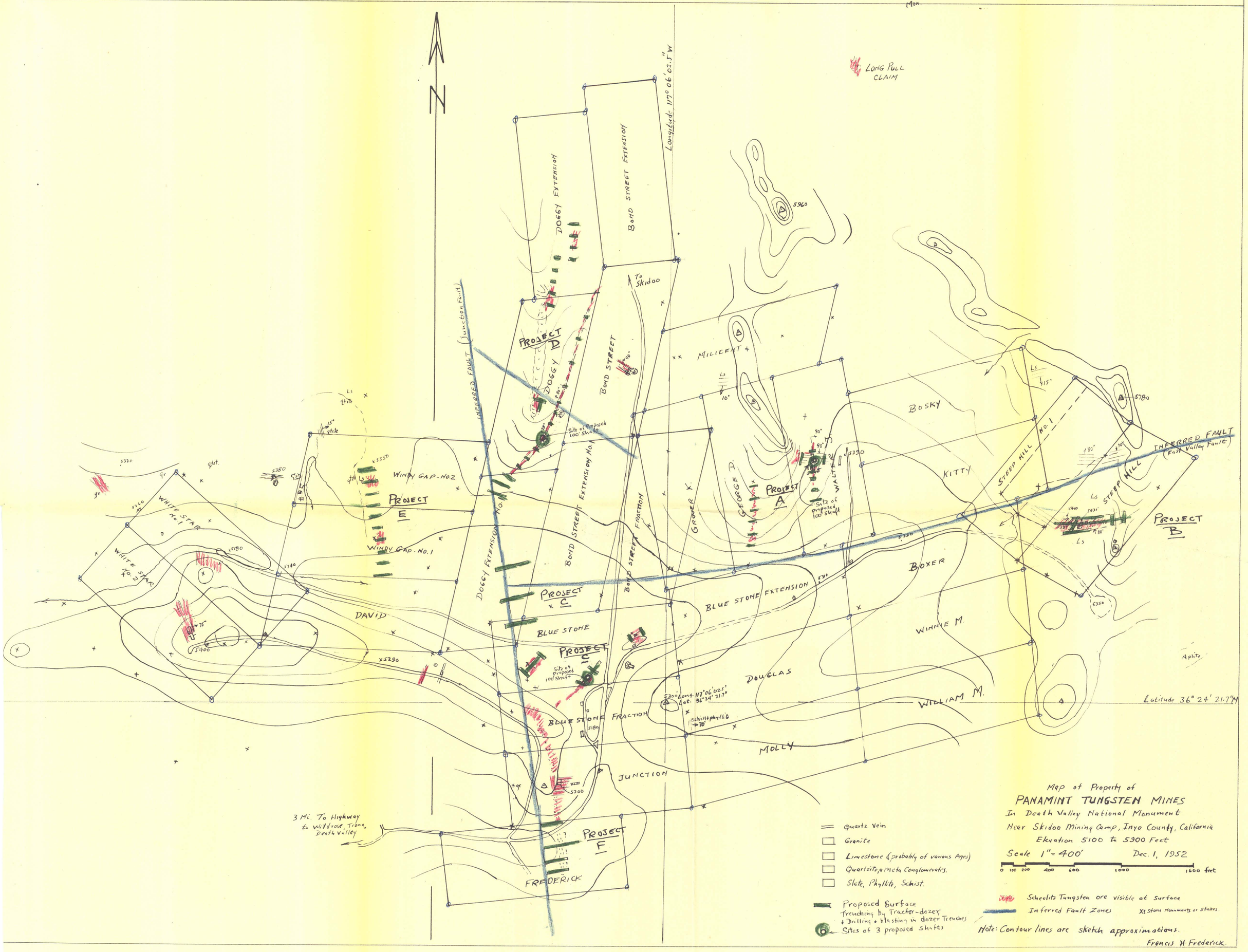
U.S.G.S. Mon.
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Longitude 117° 06' 02.5" W
DOGGY EXTENSION
BOND STREET EXTENSION
To Skidoo
PROJECT D
DOGGY
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INFERRED FAULT (Junction Fault)
Site of Proposed 100' Shaft
MILLICENT
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KITTY
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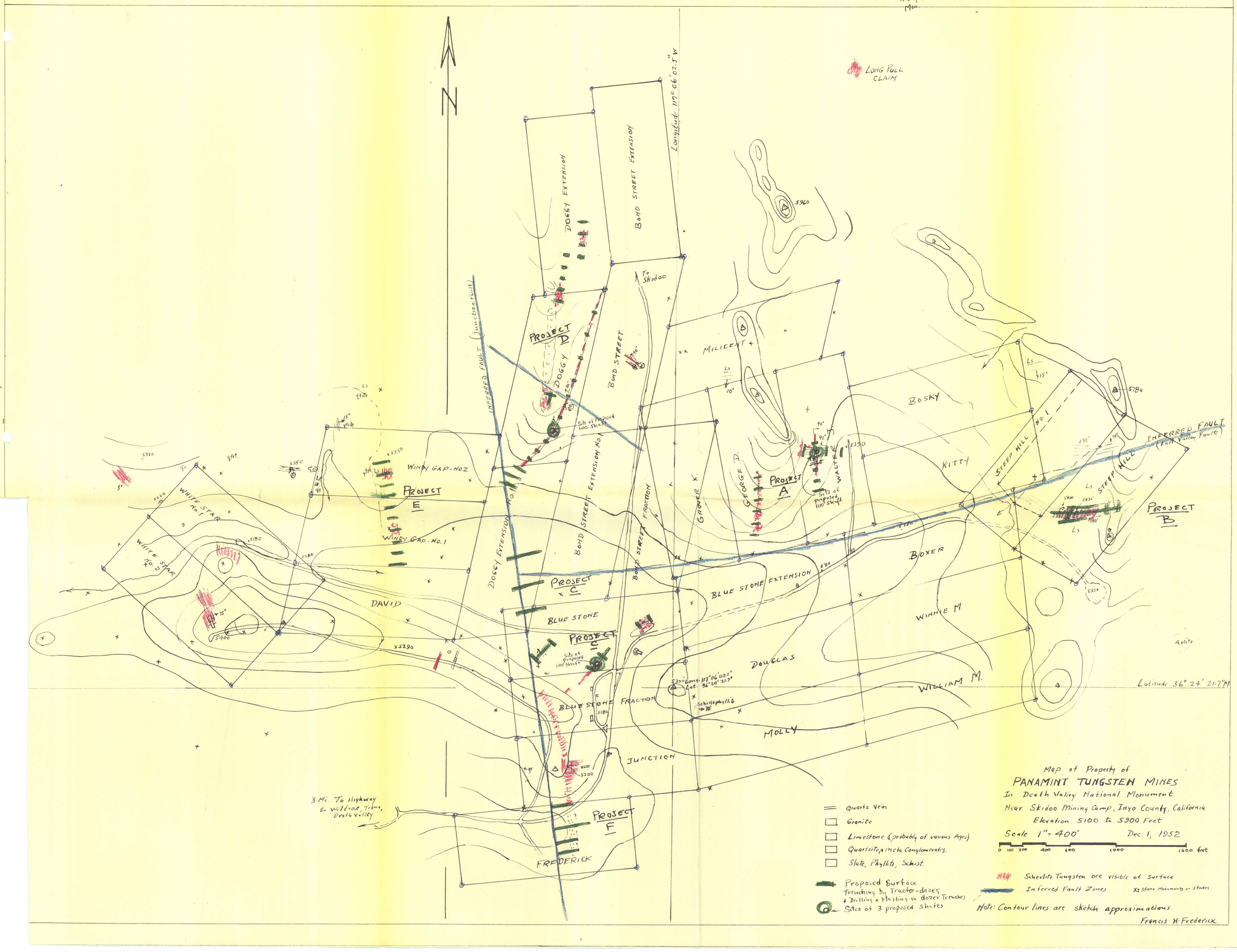
WINDY GAP-NO.1
PROJECT E
WHITE STAR No.1
WHITE STAR No.2
DOGGY EXTENSION No.1
BOND STREET EXTENSION No.1
BOND STREET FRACTION
GEORGE P.
GROVER K.
WALTER
PROJECT A
PROJECT B
PROJECT C
BLUE STONE EXTENSION
BOXER
DAVID
BLUE STONE
WINNIE M.
DOUGLAS
WILLIAM M.
Latitude 36° 24' 21.7" N
BLUE STONE FRACTION
Long. 117°06'02.5" Lat. 36°24' 21.7"
Schist & phyllite
MOLLY
JUNCTION
Aplite
3 Mi. To Highway to Wildrose, Trona, Death Valley
PROJECT F
FREDERICK
Quartz Vein
Granite
Limestone (probably of various Ages)
Quartzite & Meta Conglomerates.
Slate, Phyllite, Schist.
Proposed Surface Trenching by Tractor-dozer, + Drilling + blasting in dozer Trenches
Sites of 3 proposed Shafts
Scheelite Tungsten ore visible at Surface
Inferred Fault Zones
X = Stone Monuments or Stakes.
Note: Contour lines are sketch approximations.
Map of Property of
PANAMINT TUNGSTEN MINES
In Death Valley National Monument
Near Skidoo Mining Camp, Inyo County, California
Elevation 5100 to 5900 Feet
Scale 1" = 400'
Dec. 1, 1952
0 100 200 400 600 1000 1600 feet
Francis H. Frederick.

U.S.G.S. Mon.



Map of Property of
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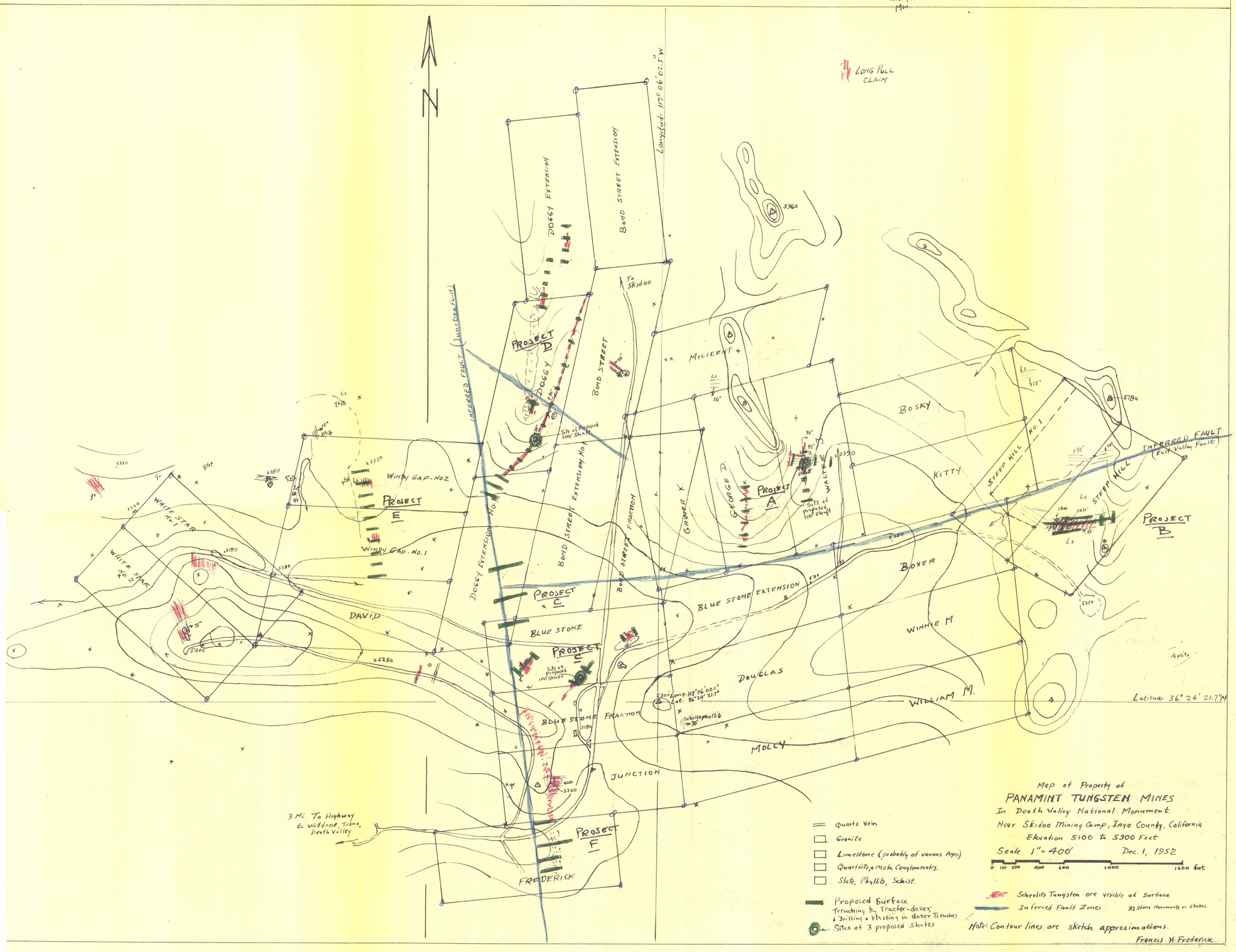
Near Skidoo Mining Camp, Inyo County, California
Elevation 5100 to 5900 Feet
Scale 1" = 400' Dec. 1, 1952



Map of Property of
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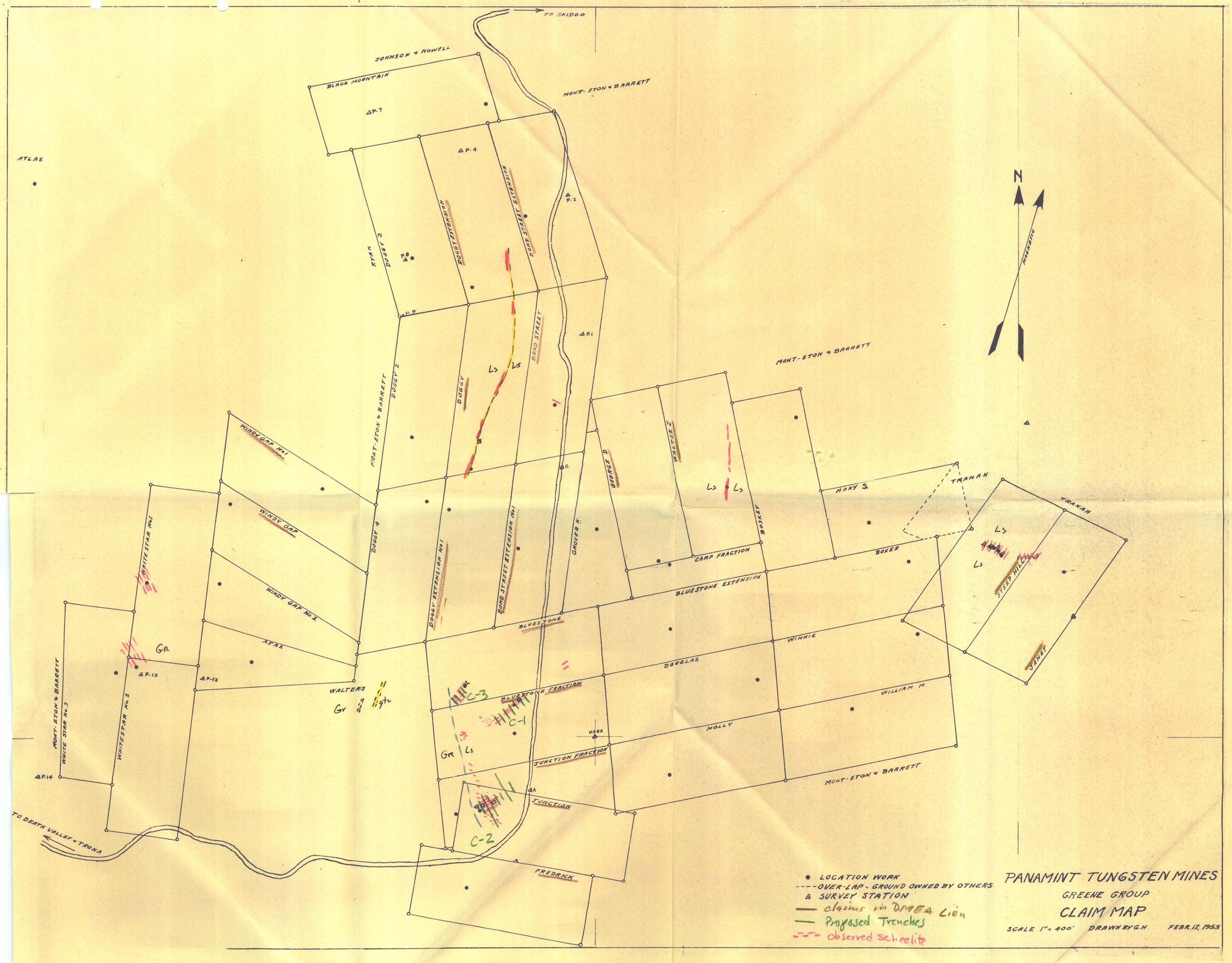
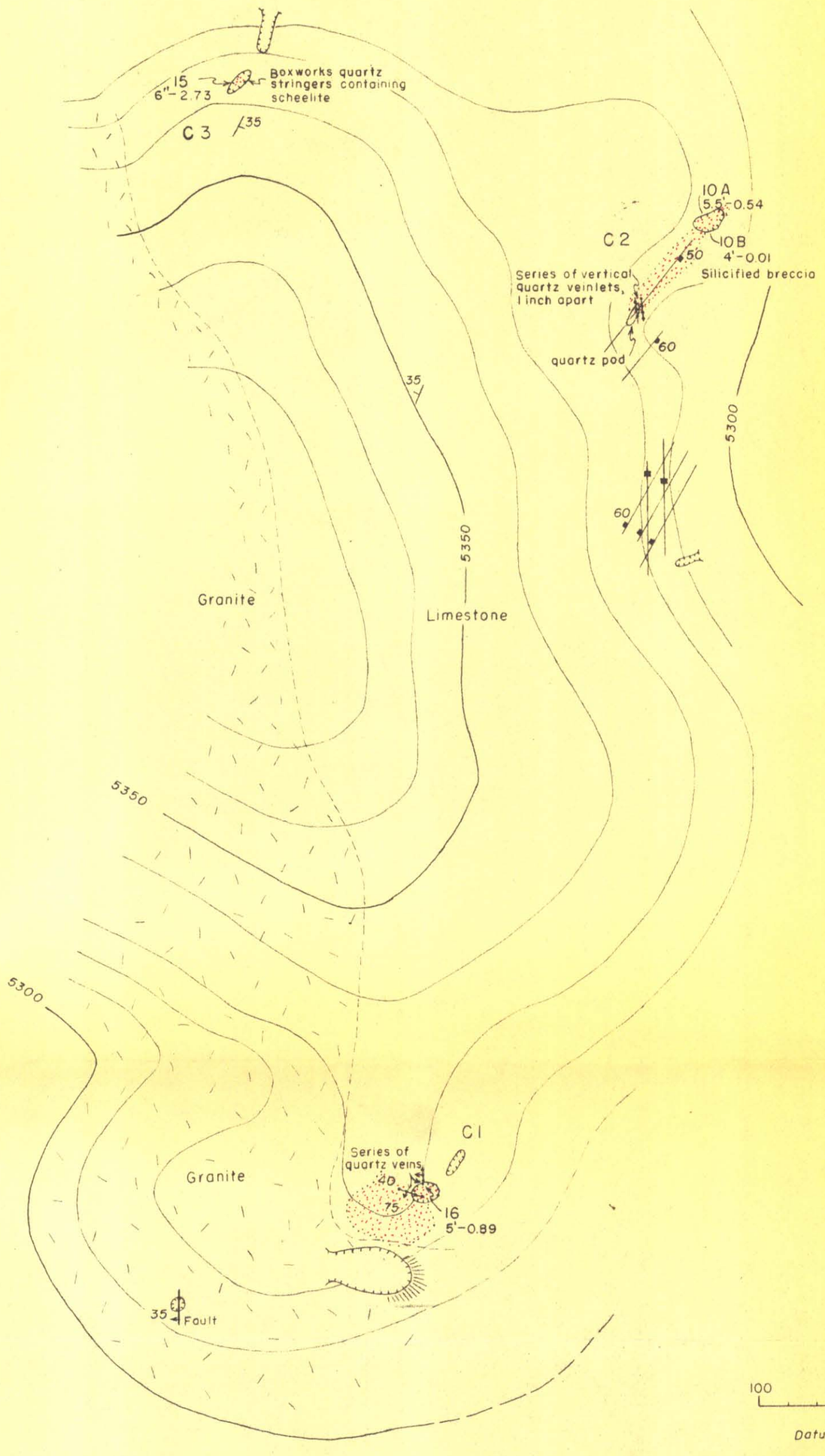
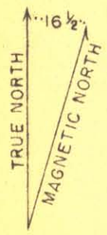
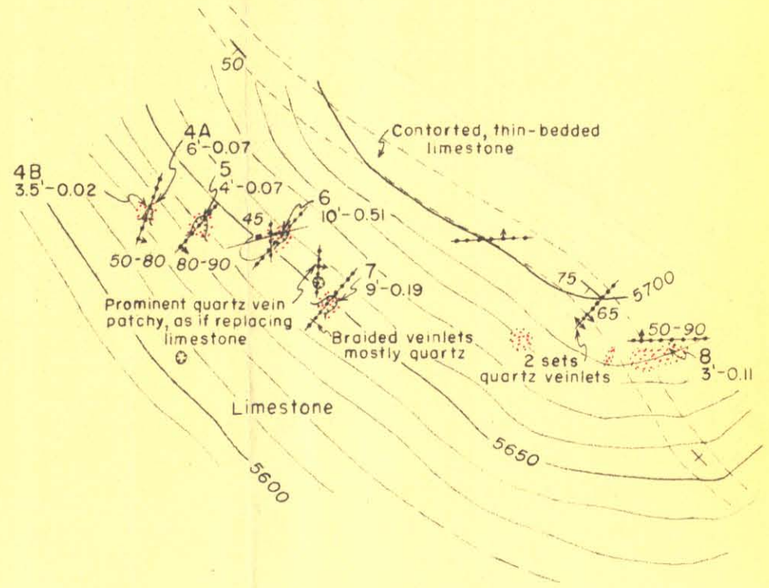
In Death Valley National Monument
Near Skidoo Mining Camp, Inyo County, California
Elevation 5100 to 5900 Feet
Scale 1" = 400' Dec. 1, 1952


TO SKIDOO
JOHNSON & HOWELL
BLACK MOUNTAIN
MONT-ETON & BARRETT
ATLAS
N
MAGNETIC
RYAN
DOGGY 3
DOGGY EXTENSION
BOND STREET EXTENSION
BOND STREET
DOGGY 2
DOGGY
MONT-ETON & BARRETT
WINDY GAP No1
WINDY GAP
WINDY GAP No 2
AJAX
WALTERS
DOGGY 4
DOGGY EXTENSION No1
BOND STREET EXTENSION No1
GROVER K.
GEORGE D
WALTER J
BOSKEY
CAMP FRACTION
BLUESTONE EXTENSION
BLUESTONE
BLUESTONE FRACTION
JUNCTION FRACTION
JUNCTION
FREDRICK
DOUGLAS
MOLLY
WINNIE
WILLIAM M.
BOXER
MARY S.
TRANAH
STEEP HILL
JANET
WHITE STAR No1
WHITE STAR No 3
WHITESTAR No 2
MONT-ETON & BARRETT
TO DEATH VALLEY & TRONA
USGS
C-1
C-2
C-3
Ls
Gr
Qtz
P-1
P-2
P-4
P-7
P-8
P-9
P-12
P-13
P-14
A
B
LOCATION WORK
OVER-LAP - GROUND OWNED BY OTHERS
SURVEY STATION
claims in DMEA Lien
Proposed Trenches
observed scheelite
PANAMINT TUNGSTEN MINES
GREENE GROUP
CLAIM MAP
SCALE 1" = 400'
DRAWN BY G.H.
FEBR. 12, 1953







GEOLOGIC MAP OF PROJECT B AREA

EXPLANATION

Contact
(Dashed where approximately located)

30
Strike and dip of beds

50
Strike and dip of joints

Open pit

40
Quartz stringers, showing dip

Scheelite showings

7
5'-0.63
Sample localities
Width of sample and percent in WO_3

100 0 100 200 Feet
Contour interval 10 feet
Datum approximately mean sea level

GEOLOGIC MAP OF PROJECT C AREA

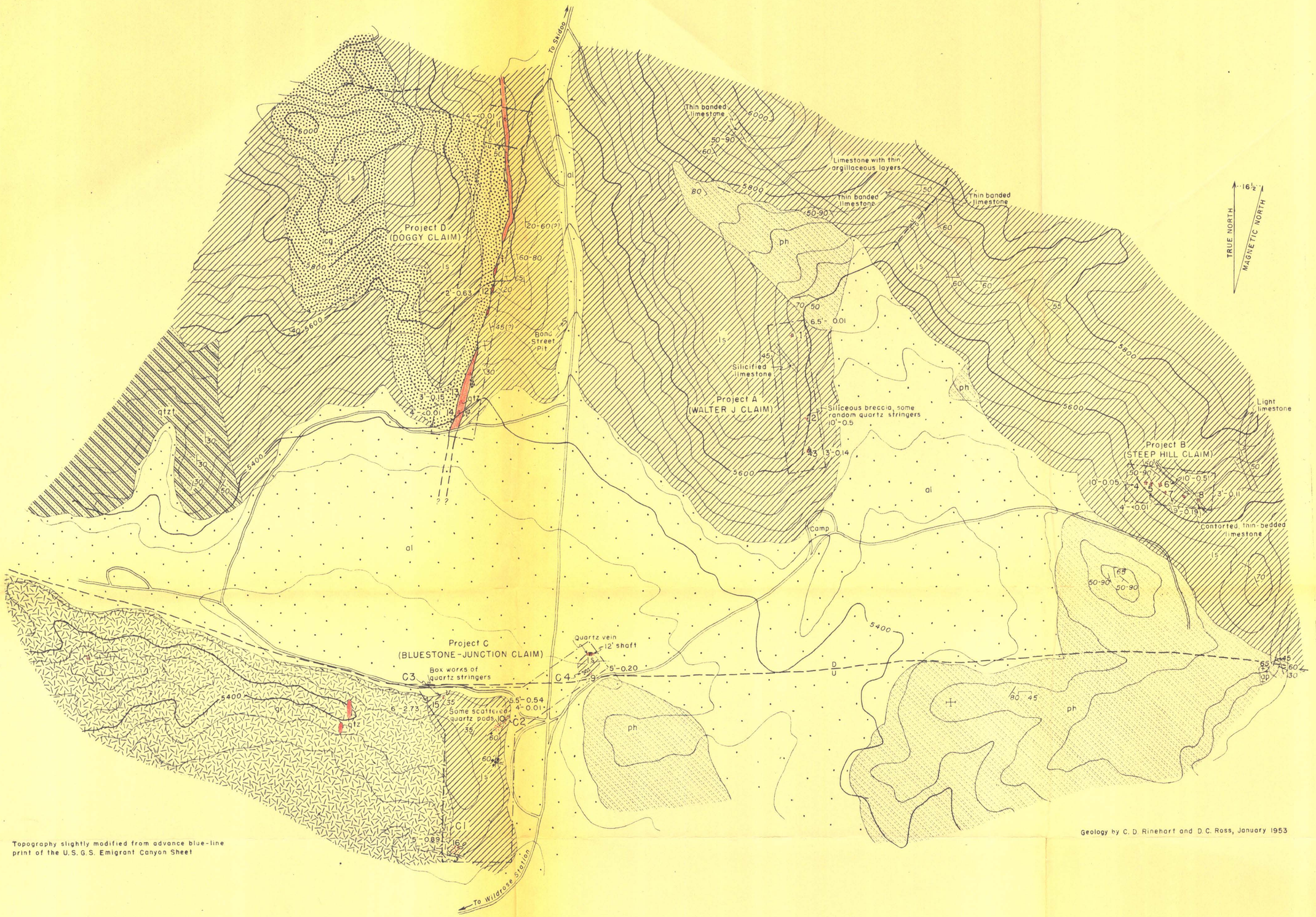
Geology by C. D. Rinehart and D.C. Ross, January 1953

PANAMINT TUNGSTEN MINES, NEAR SKIDOO, INYO COUNTY, CALIFORNIA

Plate II

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA 2807
TUNGSTEN



Topography slightly modified from advance blue-line print of the U.S.G.S. Emigrant Canyon Sheet

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EXPLANATION

al — Alluvium

cg — Black conglomerate bed (Black to grey calcite, quartz, and mica groundmass with larger limestone, quartzite, and granite fragments)

ls — Limestone (Massive buff to grey with local thinly bedded layers - some thin argillaceous and sandy beds)

qtzt — Quartzite

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qtz — Quartz (Massive vein material - including silicified limestone breccia of the Doggy claim - and thin stringers)

Contact

Doubtful or probable faults (U, upthrown side; D, downthrown side)

Strike and dip of beds

Strike and dip of cleavage

Horizontal cleavage

Strike and dip of joints

Open pit

Scheelite showings

15
5'-0.63
Sample localities
Width of sample and percent in WO_3

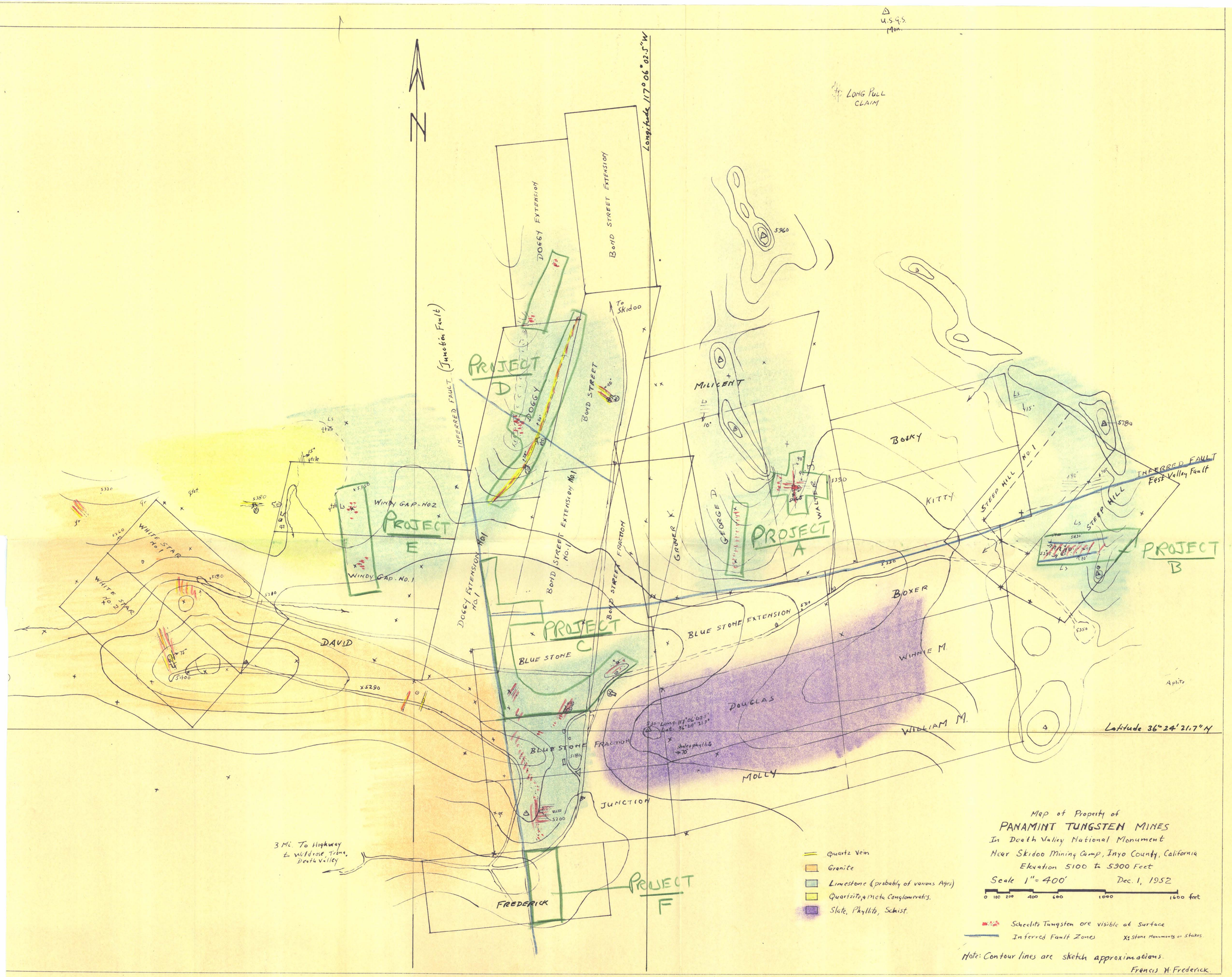
Approximate outline of project areas (not claim boundaries)

GEOLOGIC MAP OF THE PROPERTY OF THE PANAMINT TUNGSTEN MINES, NEAR SKIDOO, INYO COUNTY, CALIFORNIA

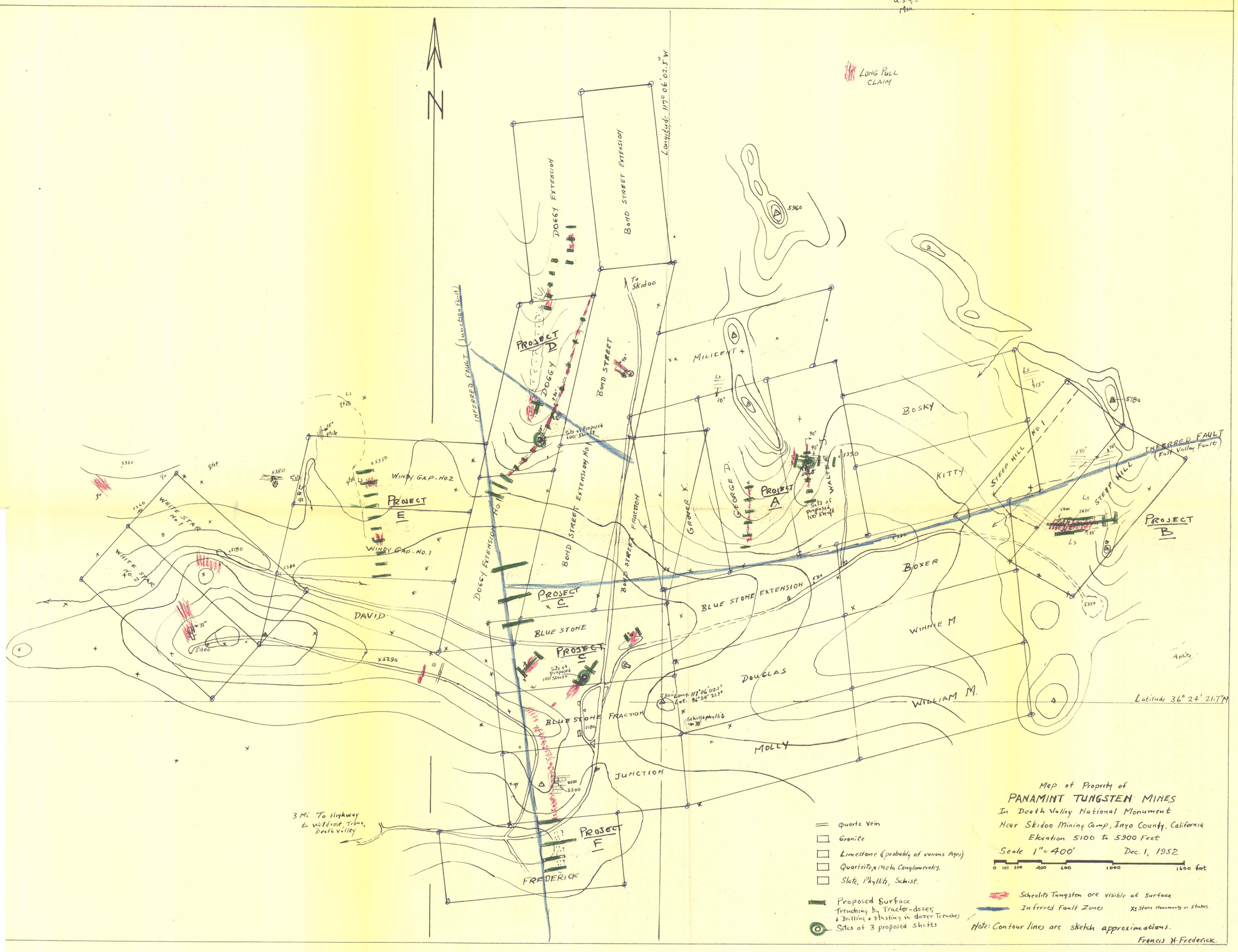
400 0 400 800 1200 FEET

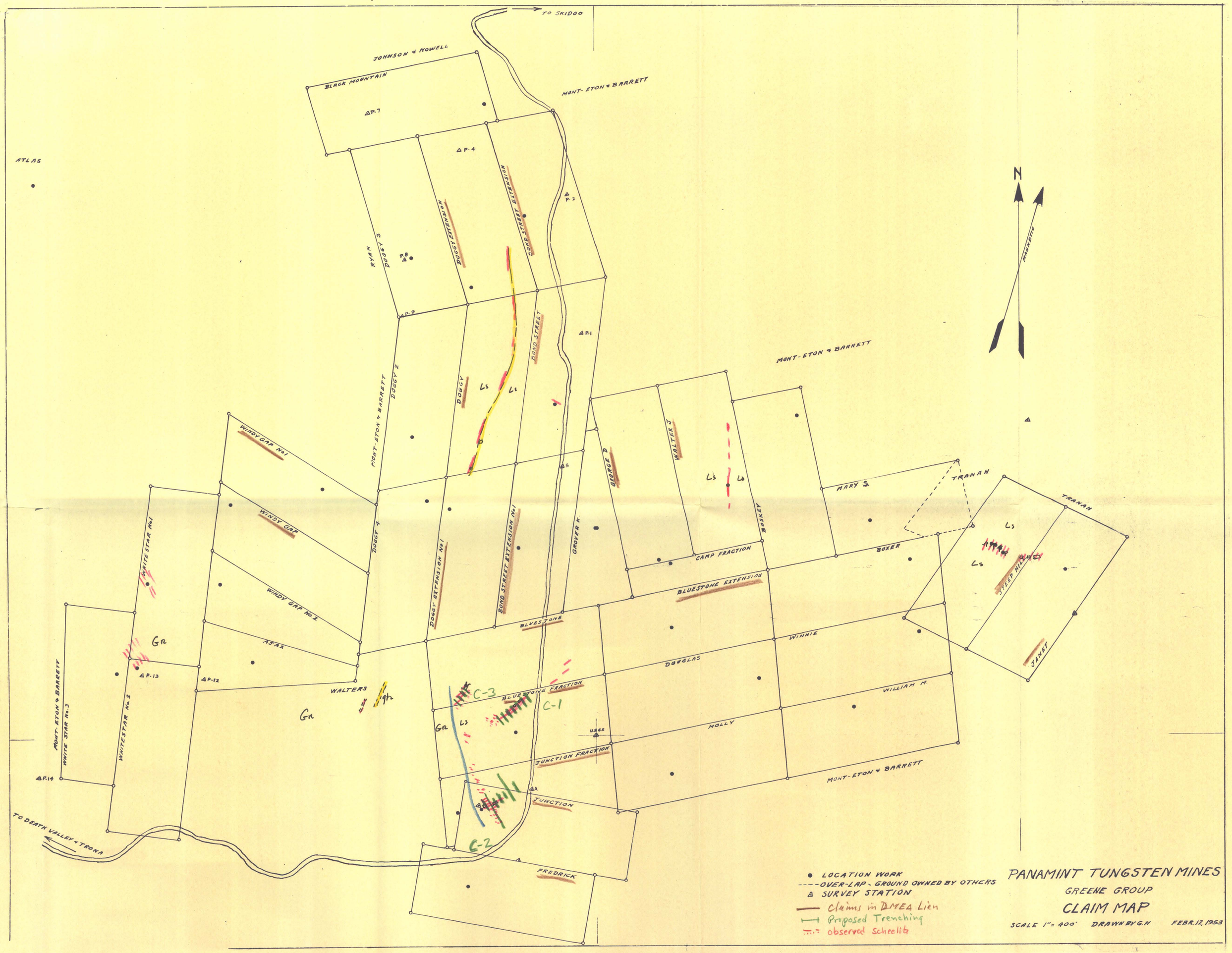
Contour interval 40 feet

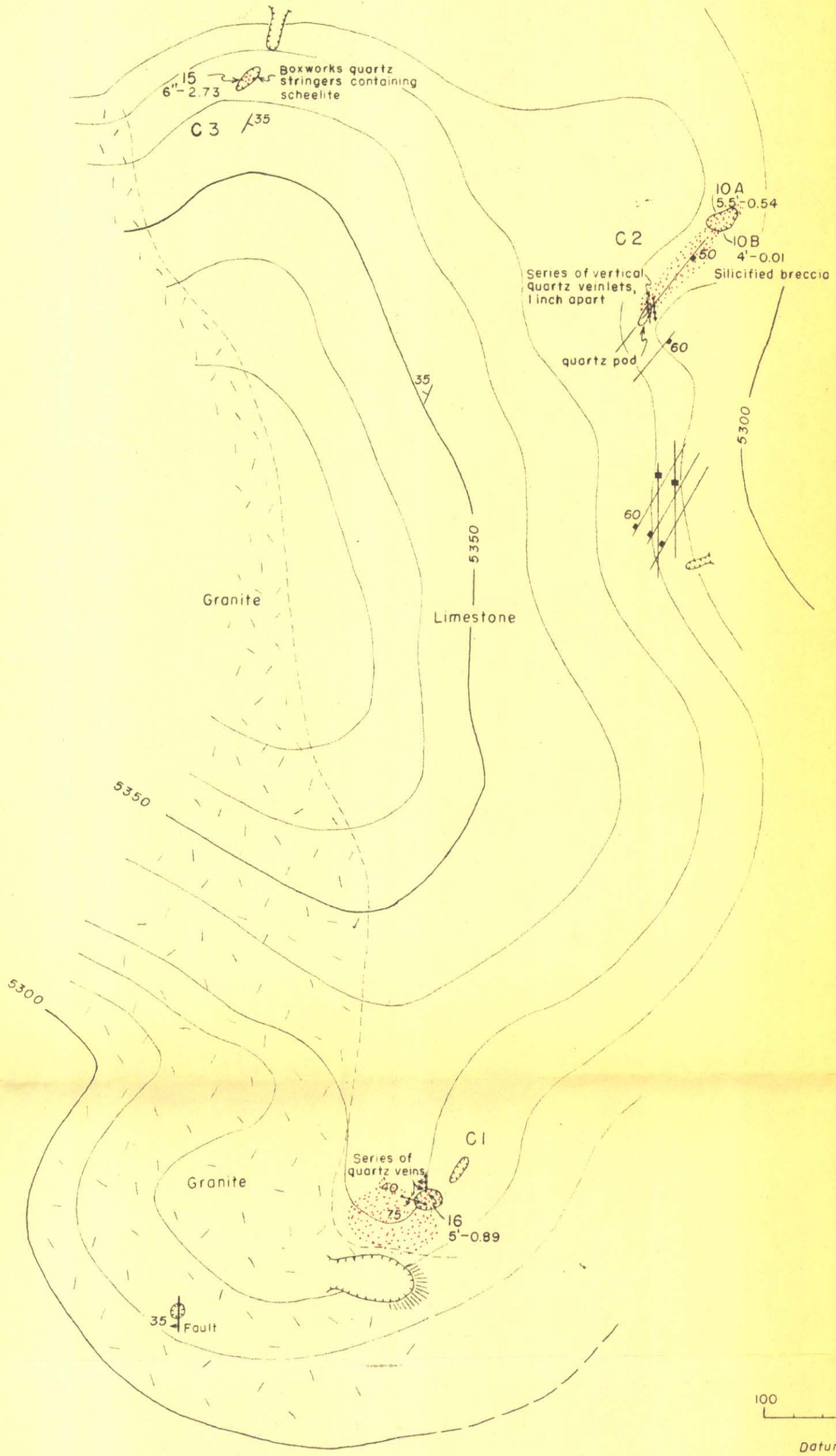
Plate I

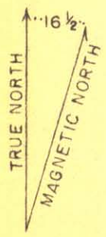


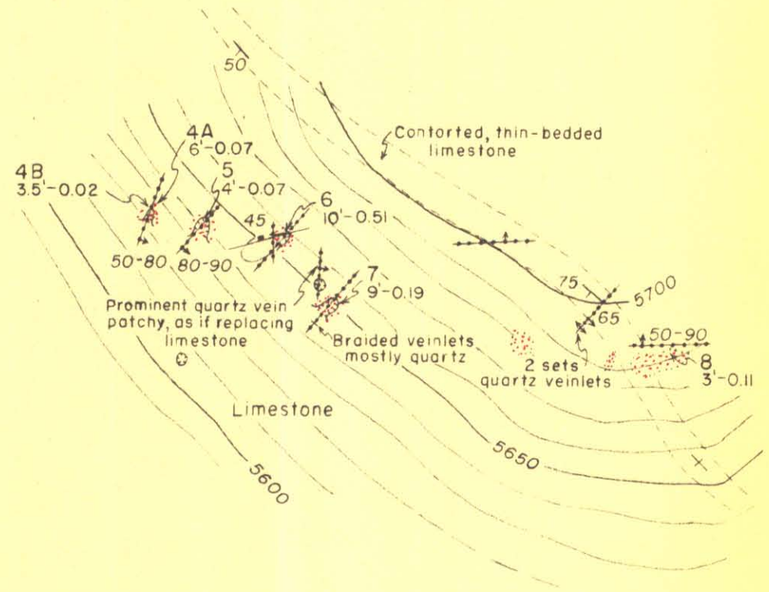
Map of Property of
PANAMINT TUNGSTEN MINES
In Death Valley National Monument
Near Skidoo Mining Camp, Inyo County, California
Elevation 5100 to 5900 Feet
Scale 1" = 400' Dec. 1, 1952
0 100 200 400 600 1000 1600 feet


U.S.G.S. Mon.
N
LONG PULL CLAIM
Longitude 117° 06' 02.5" W
DOGGY EXTENSION
BOND STREET EXTENSION
To Skidoo
PROJECT D
DOGGY
BOND STREET
INFERRED FAULT (Junction Fault)
Site of proposed 100' shaft
MILLICENT
BOSKY
KITTY
STEEP HILL
STEEP HILL No. 1
INFERRED FAULT (East Valley Fault)
PROJECT A
PROJECT B
PROJECT E
WINDY GAP - No. 2
WINDY GAP - No. 1
WHITE STAR No. 1
WHITE STAR No. 2
DOGGY EXTENSION No. 1
BOND STREET EXTENSION No. 1
BOND STREET FRACTION
GROVER K.
GEORGE P.
PROJECT C
BLUE STONE
BLUE STONE EXTENSION
DAVID
BOXER
WINNIE M.
PROJECT G
DOUGLAS
WILLIAM M.
Latitude 36° 24' 21.7" N
BLUE STONE FRACTION
Long. 117° 06' 02.5"
Lat. 36° 24' 21.7"
Schist & phyllite
MOLLY
JUNCTION
3 Mi. To Highway to Wildrose, Trona, Death Valley
PROJECT F
FREDERICK
Aplite
Quartz Vein
Granite
Limestone (probably of various Ages)
Quartzite, & Meta Conglomerates.
Slate, Phyllite, Schist.
Proposed Surface Trenching by Tractor-dozer, & Drilling & blasting in dozer Trenches
Sites of 3 proposed shafts
Scheelite Tungsten ore visible at surface
Inferred Fault Zones
X: Stone Monuments or Stakes.
Note: Contour lines are sketch approximations.
Map of Property of
PANAMINT TUNGSTEN MINES
In Death Valley National Monument
Near Skidoo Mining Camp, Inyo County, California
Elevation 5100 to 5900 Feet
Scale 1" = 400'
Dec. 1, 1952
0 100 200 400 600 1000 1600 feet
Frances H. Frederick.


TO SKIDOO
JOHNSON & HOWELL
BLACK MOUNTAIN
MONT-ETON & BARRETT
ATLAS
N
MAGNETIC
RYAN
DOGGY 3
DOGGY EXTENSION
BOND STREET EXTENSION
BOND STREET
DOGGY 2
DOGGY
MONT-ETON & BARRETT
WINDY GAP No 1
WINDY GAP
WINDY GAP No 2
WHITE STAR No 1
DOGGY 4
DOGGY EXTENSION No 1
BOND STREET EXTENSION No 1
GROVER K
GEORGE D
WALTER J
BOSKEY
CAMP FRACTION
MARY S.
TRANAH
BOXER
STEEP HILL
JANET
BLUESTONE EXTENSION
BLUESTONE
AJAX
WALTERS
WINNIE
DOUGLAS
BLUESTONE FRACTION
WILLIAM M.
MOLLY
JUNCTION FRACTION
JUNCTION
FREDRICK
WHITE STAR No 3
WHITESTAR No 2
TO DEATH VALLEY & TRONA
Gr
Ls
C-1
C-2
C-3
USGS
P-1
P-2
P-4
P-7
P-8
P-9
P-12
P-13
P-14
LOCATION WORK
OVER-LAP - GROUND OWNED BY OTHERS
SURVEY STATION
Claims in DMEA Lien
Proposed Trenching
observed Scheelite
PANAMINT TUNGSTEN MINES
GREENE GROUP
CLAIM MAP
SCALE 1" = 400'
DRAWN BY G.H
FEBR. 12, 1953







GEOLOGIC MAP OF PROJECT B AREA

EXPLANATION

Contact
(Dashed where approximately located)

30
Strike and dip of beds

50
Strike and dip of joints

Open pit

40
Quartz stringers, showing dip

Scheelite showings

7
5'-0.63
Sample localities
Width of sample and percent in WO_3

100 0 100 200 Feet
Contour interval 10 feet
Datum approximately mean sea level

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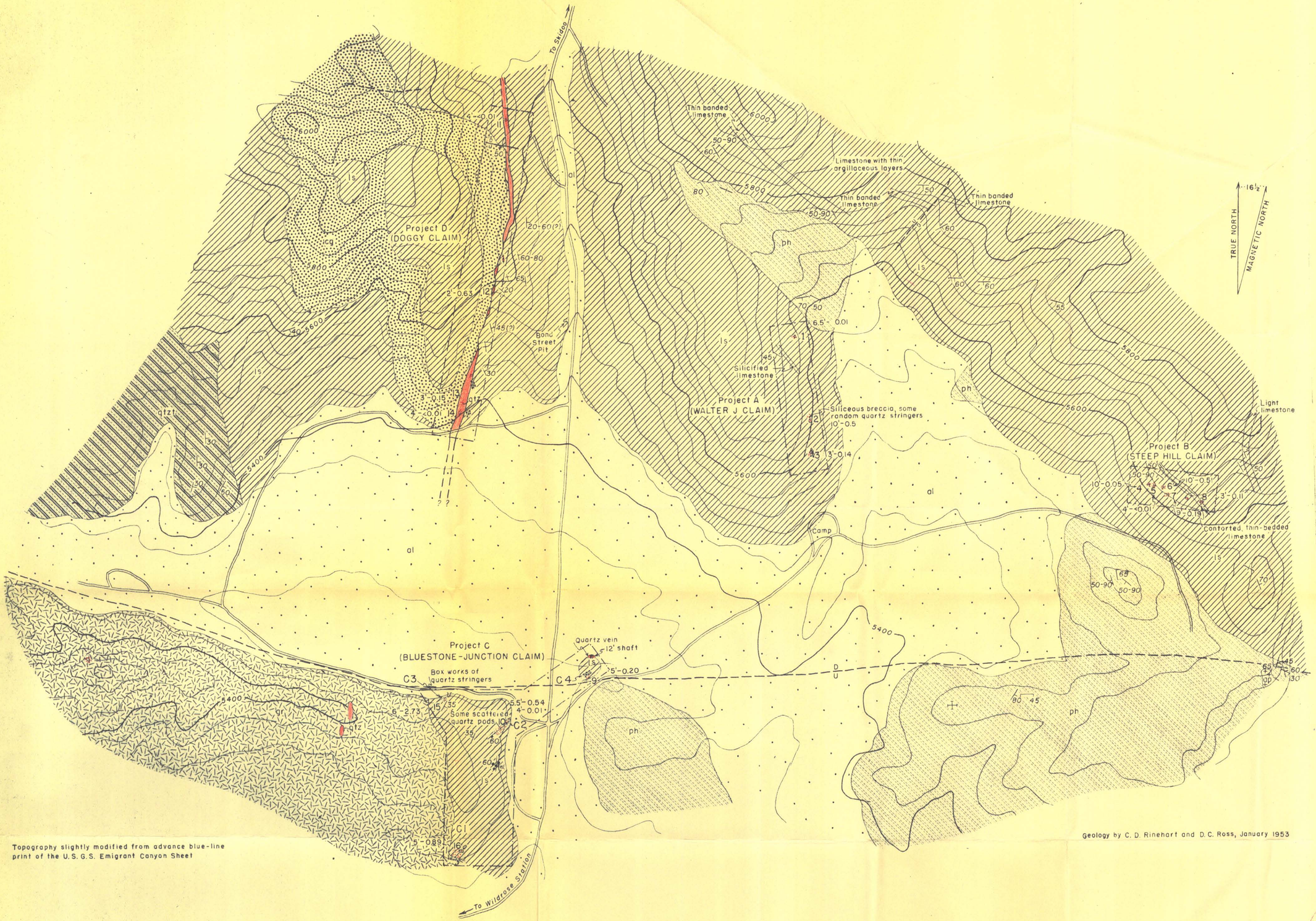

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