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DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

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DMA Docket No. 62-X

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Tungsten

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Routing Slip

To:	Coordinating Committee	Date	July 27, 1951
To:	~~Hdqts. Denver~~	Date	~~[illegible]~~
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400

FILE COPY
SURNAME:

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

S.C.

Brewer
Selfridge
Gehan
Lemmon
Berger
Mitchell

JAN 4 1952

Mr. Sheldon A. Heath
P.O. Box 38
Yucca, Arizona

Re: DMA Docket No. 62X - Tungsten
Mohave County, Arizona

Dear Mr. Heath:

We have now reviewed your application for an exploration loan and other data recently made available to us in Washington.

The information, while noting a small amount of marginal ore, indicates that, geologically, there is little probability of making a significant discovery.

We regret, therefore, to inform you that your application is denied.

We wish to thank you for your interest in the Defense Minerals Program, and for your patience and effort in this respect.

Sincerely yours,

C. O. Mittendorf (fw) S.H. 1-4-52

Acting Administrator
Defense Minerals Exploration
Administration

QLBrewer'lm
12/19/51

cc: Admn. Reading File
Mails and Files Br.
C. O. Mittendorf
D. Lemmon, USGS
R. W. Geehan, USBM
Field Team, Reg. IV
Docket
G. C. Selfridge
Q. L. Brewer

JAN 4 1952

Mr. Sheldon A. Keith
P.O. Box 3[illegible]
Yucca, Arizona

Re: DMA Docket No. 6[illegible]X - Tungsten
Mohave County, Arizona

Dear Mr. Keith:

We have now reviewed your application for an exploration loan and other data recently made available to us in Washington.

The information, while noting a small amount of marginal ore, indicates that, geologically, there is little probability of making a significant discovery.

We regret, therefore, to inform you that your application is denied.

We wish to thank you for your interest in the Defense Minerals Program, and for your patience and effort in this request.

Sincerely yours,

C. O. Mittendorf

Acting Administrator
Defense Minerals Exploration
Administration

[illegible]rewer:lm
12/19/51

cc: Admin. Reading File
Mails and Files Br.
C. O. Mittendorf
D. Lemmon, USGS
R. F. Geehan, USBM
Field Team, Reg. IV
Docket
G. C. Selfridge
[illegible] L. Brewer

400

FILE COPY
SURNAME:

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

Brewer
Selfridge
Stewart
Lagomarsino
Thayer
McNeill

December 20, 1951

Memorandum

To: Operating Committee

Through: Acting Administrator, Defense Minerals Exploration Administration

From: Ferro-Alloy Division, Defense Minerals Exploration Administration

Subject: Denial of Docket DMA 62X, Mohave County, Arizona - Tungsten

The Field Team report on the subject property states that there are two short, narrow orebodies containing marginal to sub-marginal amounts of scheelite occurring on two of the three veins existing within the area; that the expectable tonnage yield is too small to justify the expenses to be incurred.

Geologically, there is little probability of making a significant discovery.

[redacted]

S.W.
1-4-52

QLBrewer'lm
12/20/51

cc: Admn. Reading File
Mails and Files Br.
C. O. Mittendorf
Docket
G. C. Selfridge
Q. L. Brewer

December 20, 1951

Memorandum

To: Operating Committee

Through: Acting Administrator, Defense Minerals Exploration Administration

From: Ferro-Alloy Division, Defense Minerals Exploration Administration

Subject: Denial of Docket DMA 62X, Mohave County, Arizona - Tungsten

The Field Team report on the subject property states that there are two short, narrow orebodies containing marginal to sub-marginal amounts of scheelite occurring on two of the three veins existing within the area; that the expectable tonnage yield is too small to justify the expenses to be incurred.

Geologically, there is little probability of making a significant discovery.

GLBrewer:lm
12/20/51

cc: Admn. Reading File
Mails and Files Br.
C. O. Mittendorf
Docket
G. O. Selfridge
G. L. Brewer

FILE COPY
SURNAME:

100

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

JAN 11 1952

Mr. Sheldon A. Heath
P.O. Box 38
Yucca, Arizona

Re: Docket DMA-62X - Tungsten
Evelyn, Little Maude and
Pioneer Tungsten Claims
Mohave County, Arizona

Dear Mr. Heath:

This is in reply to your letter of December 28, 1951, in which you requested the status of your application for an exploration loan.

A letter notifying you that the application had been denied was mailed on January 4. It has no doubt reached you by this time.

We thank you for your interest in the defense minerals program by calling our attention to the subject property.

Sincerely yours,

C. O. Mittendorf

Acting Administrator
Defense Minerals Exploration
Administration

GCSelfridge/COMittendorf/lm/fw
1/9/52

cc: Admr. Reading File
Mails & Files 1-11-52 J.D.
C. O. Mittendorf
R. W. Geehan, USBM
D. M. Lemmon, USGS
Field Team, Reg. IV
Docket
G. C. Selfridge

BL

Yucca, Ariz.
Dec 28-51

Defense Mineral Adm.
Washington 25 - D.C.

Dear Sirs,

Refering to D.M.A 62-X Tungsten.
Will you please advise me if Application for loan D M A 62-X has been approved or disapproved.
An early reply will be appreciated.
It has been 75 days since the engineers examined this property, and have received no information in regard to the loan.

Thank you in advance

Resp. yours
Sheldon A. Heath
Yucca, Ariz
P.O. Box 38.

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D.C.
FEB 29 10 38 AM '51

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

File N.P.

December 20, 1951

Memorandum

To: Operating Committee

Through: Acting Administrator, Defense Minerals Exploration Administration

From: Ferro-Alloy Division, Defense Minerals Exploration Administration

Subject: Denial of Docket DMA 62X, Mohave County, Arizona - Tungsten

The Field Team report on the subject property states that there are two short, narrow orebodies containing marginal to sub-marginal amounts of scheelite occurring on two of the three veins existing within the area; that the expectable tonnage yield is too small to justify the expenses to be incurred.

Geologically, there is little probability of making a significant discovery.

G. C. Selfridge.

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : George Selfridge, D.M.E.A. DATE: December 12, 1951

FROM : D. M. Lemmon, U. S. Geological Survey

SUBJECT: Application for exploration $37,500 DMA 62-X Tungsten
Sheldon A. Heath
Dutch Flat Area
Mohave County, Arizona

A field examination was made in October 1951. The report, received in DMA November 13, recommends rejection of the proposal, and contains adequate documentation to support a rejection.

I concur with the field report and recommend denial.

DM Lemmon

OK Robert W. Gehon

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

224 New Customhouse
Denver 2, Colorado

November 6, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 62-X, Sheldon Heath, applicant; Evelyn, Little Maude and Pioneer Tungsten Claims, Dutch Flat Area, Mohave County, Arizona

Enclosed herewith are the original and two copies of the report on the subject docket.

We concur with the conclusions and recommendations of the examining team that the exploration loan of $37,500 be denied.

The brochure is enclosed.

J. H. East, Jr.

A. H. Koschmann

WASHINGTON, D.C.
Nov 13 10 28 AM '51

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

224 New Customhouse
Denver 2, Colorado

November 6, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: Final Report, DMA Docket 62-X, Sheldon Heath, applicant; Evelyn, Little Maude and Pioneer Tungsten Claims, Dutch Flat Area, Mohave County, Arizona

Enclosed herewith are the original and two copies of the report on the subject docket.

We concur with the conclusions and recommendations of the examining team that the exploration loan of $37,500 be denied.

The brochure is enclosed.

J. H. East, Jr.

J. H. East, Jr.

A. H. Koschmann

A. H. Koschmann

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D. C.
NOV 13 10 28 AM '51

Mining Division
Region IV

November 6, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 62X, Sheldon Heath, applicant; Evelyn, Little Maude and Pioneer Tungsten C Claims, Dutch Flat Area, Mohave County, Arizona

The application of the subject docket was for an exploration lease of $[illegible],500.

The proposed exploration program was the sinking and drifting on the three claims listed above. Scheelite is the principal tungsten mineral, which is found in quartz veins occupying fracture zones in granitic rocks.

The indicated and inferred reserves in the Evelyn and Little Maude veins are estimated at 300 tons containing about 430 units of tungstic trioxide.

Because of the small tonnage and low grade of the reserve, the examining team recommends denial of the lease, with which we concur.

Paul T. Allemann

Paul T. Allemann

MINERAL DIVISION
REGION IV

October 30, 1951

Memorandum

To Paul F. Allsman, Denver, Colorado

From Chief, Arizona-New Mexico Sr., Mining Div., Region IV

Subject Final Report, DMA Docket 62X, Shelton Heath's Evelyn, Little Maude and Pioneer Tungsten Claims, Dutch Flat Area, Mohave County, Ariz.

Enclosed are original and 7 copies of the above report by Lloyd L. Farnham of the Bureau of Mines. Although C. S. Bromfield of the Geological Survey accompanied Farnham, a separate geological report will not be submitted by the Geological Survey. Bromfield concurs with Farnham's conclusions and recommendations.

This report has my approval.

Brochure is enclosed.

Walter R. Storms

cc: P. T. Allsman (7)
C. A. Anderson
DMA 62X
DF

WRStorms:frj

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]-62a, Melton Heights Evelyn, Little Dude and Pioneer Tungsten Claims, Patch Flat Area, Yavapai County, Arizona

L. L. Farmer, Mining Engineer
U. S. Bureau of Mines

October 1951

[illegible], [illegible] [illegible]

1/

by [illegible] [illegible]

In May 1951, [illegible] [illegible] applied to the Defense Minerals Administration for an exploration loan of $ [illegible],500. The application was docketed as [illegible]-22. The requested loan was to be used for further sinking and drifting on 3 tungsten claims, known as the Evelyn, Little Dude No. 1, and the Pioneer. These claims are members of what is known as the Gutch Flat group and are located in the Mohave Mountains about 35 miles south of Kingman, Mohave County, Ariz. The property was visited by a DMA field team during the week of October 8, 1951.

Scheelite, the principal tungsten mineral was found in narrow quartz veins occupying fracture zones in gneissic rocks. Since 1942 the recorded production of tungsten from the area has amounted to about [illegible] units of WO3.

Minor amounts of tungsten occur in several of the veins in the district but only in the Evelyn and Little Dude claims was it found concentrated in appreciable quantities. A lenticular ore shoot in the Evelyn vein produced about 150 tons of ore that contained approximately 200 units of WO3. This ore body was mined to a depth of 50 feet below the outcrop and in that distance yielded about 3 tons of ore for each vertical foot. The other undeveloped scheelite concentration, in the Little Dude vein, was limited to a strike length of 25 feet with a width of one foot and was estimated to have an average grade of not over 1.5 percent WO3.

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

The indicated and inferred reserves in the Evelyn and Little Grade veins were of the order of some 300 tons of ore containing in the neighborhood of 600 units of WO3. No ore approaching a mineable grade was evident in the Pioneer vein.

Due to the size of the deposits in relation to their grade, it appears that they could not be mined profitably at this time. In any event the amount of tungsten that these patch flat ore bodies can be expected to yield is so limited that further exploration does not seem warranted. Therefore, it is recommended that the application for a loan be denied.

[illegible] WELL, [illegible] FROM THE [illegible] HEIGHT QUEEN
[illegible] OF [illegible], [illegible] COUNTY, [illegible]
[illegible]

Engineering Report

By [illegible] L. [illegible]
Mining Engineer
U. S. Bureau of Mines

October 1951

[illegible] Mining, Milling and [illegible]
[illegible] Mine, [illegible] County, [illegible]
[illegible]

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INTRODUCTION

This report describes the results of the field examination of the Dutch Flat tungsten prospects made in connection with the loan application of Harlson A. Heath of Tucson, Arizona to the Defense Minerals Administration, Docket 22A. The applicant requested an exploration loan amounting to $37,500 for the purpose of sinking and drifting on 3 tungsten claims known as the Lively, Pioneer and Little Jude No. 1, all of which are members of what is known as the Dutch Flat group, situated in southwestern Mohave County, Ariz. The writer visited the property during the week of October 9, 1951.

ACKNOWLEDGMENTS

Thanks are due Earl Heath, the father of the applicant, for the help he extended the writer during the examination. Acknowledgments also are made to the engineers and geologists of the Bureau of Mines and Geological Survey whose data are used in this report.

LOCATION AND PHYSICAL FEATURES

The Dutch Flat group of claims is situated on the southwesterly slope of the Crossman Peak area in the Mohave (Cherrybeds) Mountains of Mohave County, Ariz. The claims occupy parts of Sec. 19, 30, 29 and 30, T. 14 N., R. 15 W. and are about 43 miles south of Kingman, a station on the Santa Fe railroad. The winding desert road that leads to the property leaves U. S. Highway 66 about 5 miles south of Kingman. Due to the numerous branching roads it is difficult to

describe the route and it would be almost impossible for a stranger to find the claims without the aid of a guide. The last 9 miles of the road follows several sand washes, portions of which, if traveled much, soon become impassable to ordinary automobiles.

The Dutch Flat group, contrary to the implication as suggested by the name, occupies an area of very rugged topography. The altitude of the various mine workings ranges from about 3,800 to 5,000 feet above sea level. Rainfall is limited so that only a scant growth of desert vegetation covers the region.

HISTORY AND PRODUCTION

The claims first were location in 1912 and were worked originally on a small scale for gold. The presence of tungsten in the area was not detected until the mid-thirties, whereupon a local small crude mill, formerly built for the treatment of the gold ores, was used to concentrate the tungsten-bearing quartz. Between 1936 and 1943, available records show that the Dutch Flat group produced 2,240 pounds of scheelite concentrates containing 78 units of WO_3, and that 165 units were contained in 34 tons of selected ore that was treated in the Morland mill. Of this total production, amounting to some 223 units, it appears that about 168 units came from the Evelyn[1/] vein and 21 units from the Little Maude. The source of the remaining 34 units is not known but probably came largely from the Evelyn claims.

1/ Formerly known as the Gold Crown.

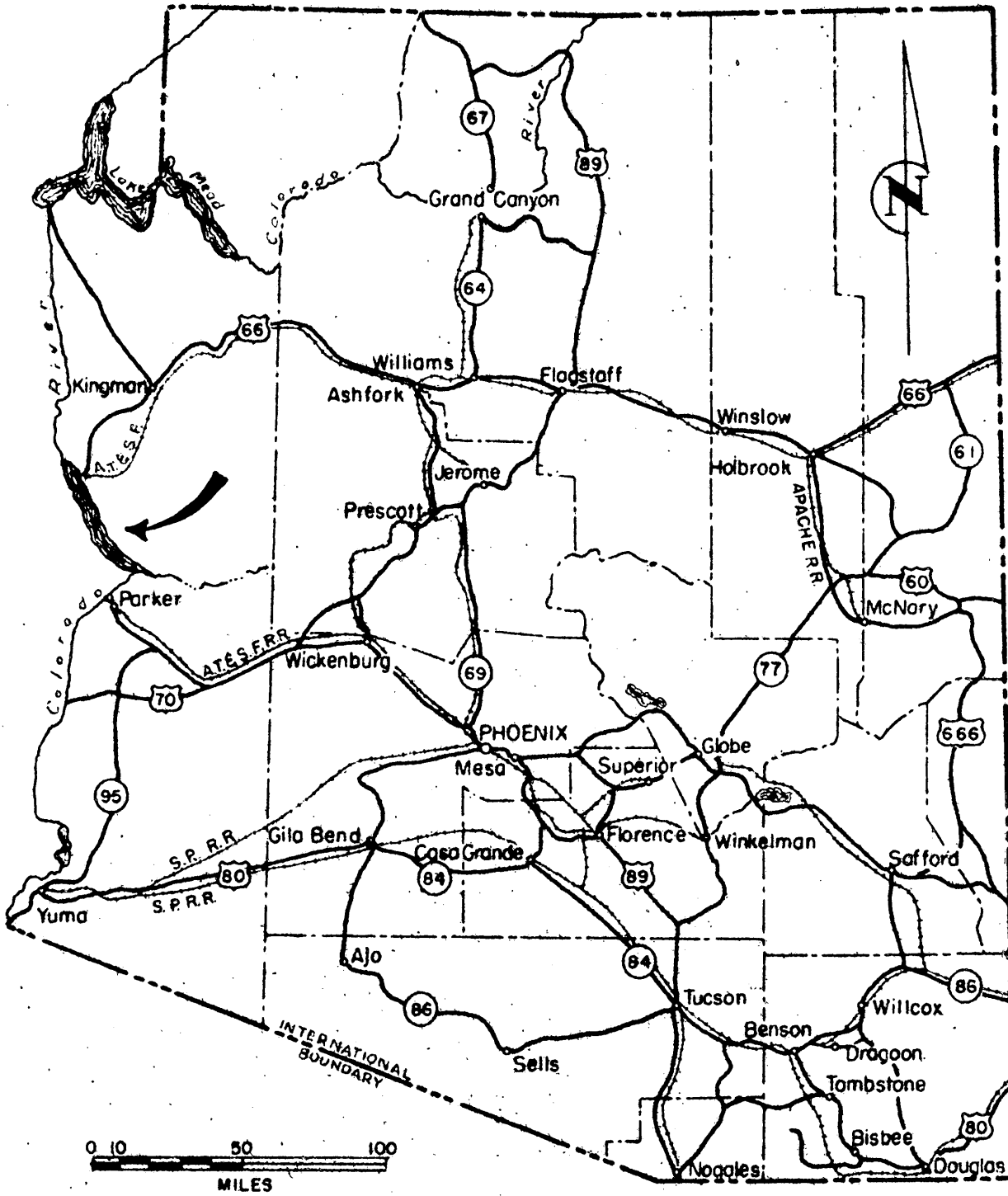

Fig. 1, LOCATION MAP, DUTCH FLAT TUNGSTEN AREA
MOHAVE COUNTY, ARIZONA

DMA-62X

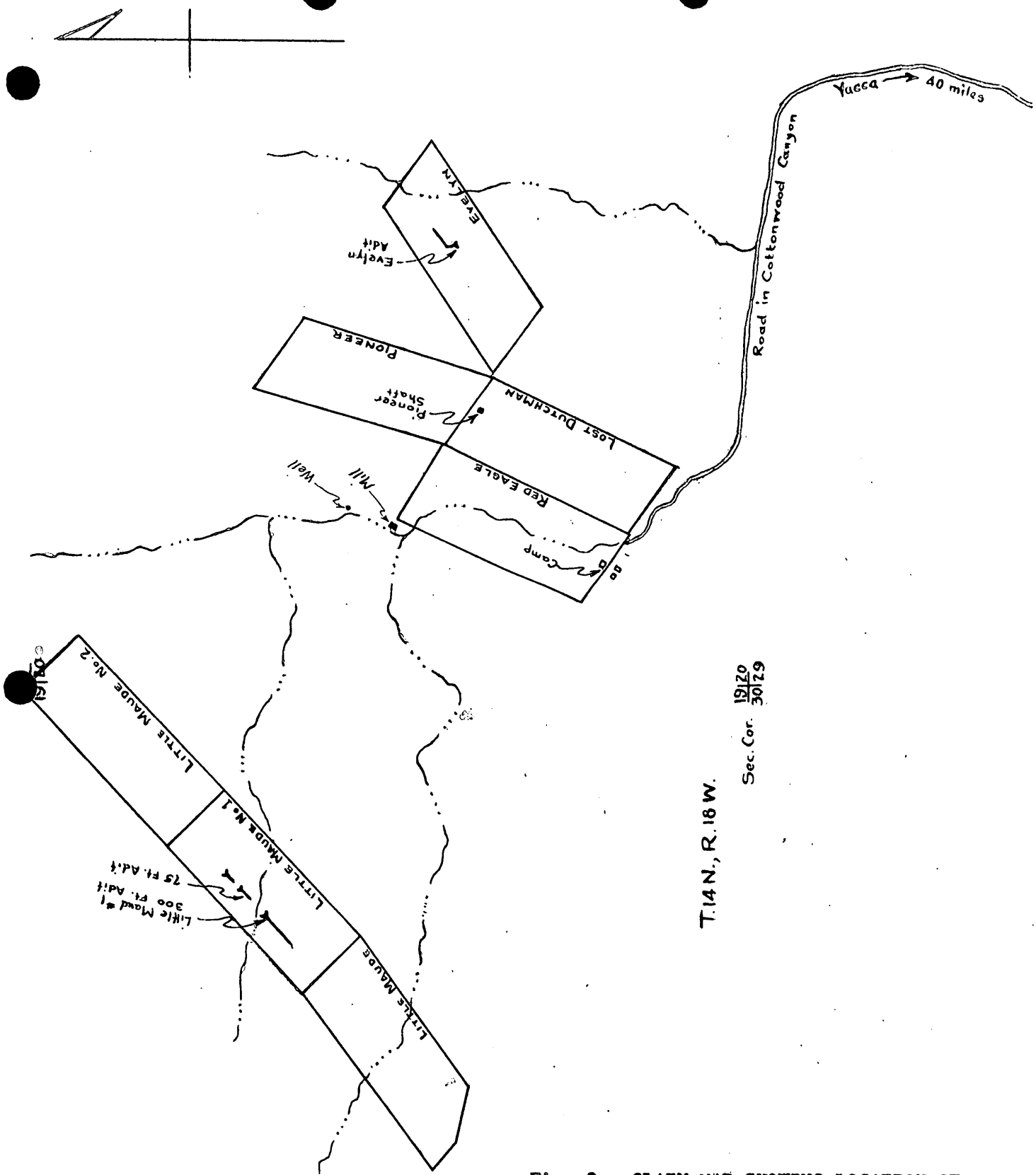

Fig. 2, CLAIM MAP SHOWING LOCATION OF PROPOSED EXPLORATION
Scale 1"=1,000 ft.

DMA-62X

Ownership and Lease

Title to the Dutch Flat group of 23 unpatented mining claims is held by Julius Eaton of Yuma, Ariz.

The applicant, Sheldon Heath, has a 3-year lease and option to purchase the group for $20,000, payable by a royalty of 10 percent of the value of the ore produced, or by cash, on or before December 1953. The lessee is obligated under the terms of the lease to perform 30 man-shifts of work per month for at least 8 months of each year.

Geologic Features of the Deposits

There are 3 localities on the Dutch Flat group that have produced tungsten ore from narrow quartz veins which occupy fracture zones in gneissic rocks. Of these the Evelyn and Little Jamie veins are nearly vertical northeastward trending fissures, while the Pioneer vein strikes northwest and dips 30 degrees southwesterly. Scheelite, the principal tungsten mineral, is associated with the quartz in which it usually occurs as thin erratic streaks aligned more or less parallel to the walls of the veins. The quartz ranges in thickness from mere stringers to short pods that attain widths of 3 feet. Regardless of the width of the vein the scheelite usually is found distributed in a band of the quartz that seldom exceeds 18 inches in thickness.

As observed under ultra-violet light, small specks of scheelite were widespread within the veins but areas containing appreciable quantities were limited to 2 short isolated lenses. Small amounts of

galena, pyrite and specularite were present in the quartz and minor quantities of gold and silver were associated with the sulphide minerals.

The largest tungsten ore shoot in the area was found in the Evelyn vein where it had a maximum stope length of 50 feet. The tungsten concentration in the Little Maude vein was limited to a strike length of about 25 feet. The exploration of these occurrences was confined to such shallow depths that little could be observed regarding the behavior of the ore shoots along the dip. They were lenticular in plan and presumably they will have the same tendency to pinch and swell along the dip.

The most striking feature in the area was the large number of intrusive dikes, which range from basic to felsitic varities. They were of varied size, age and attitude. Some cut the veins and by so doing, frequently interferred with the continuity of the quartz (fig. 4 & 6).

THE EVELYN

The Evelyn vein has been the principal producer and the only one of the group where any serious attempt was made to mine tungsten ore. Near the center of the Evelyn adit, the vein had been stoped above the back of the drift for a maximum distance of 50 feet (fig. 5). Though largely filled and inaccessible, it was estimated that the stope

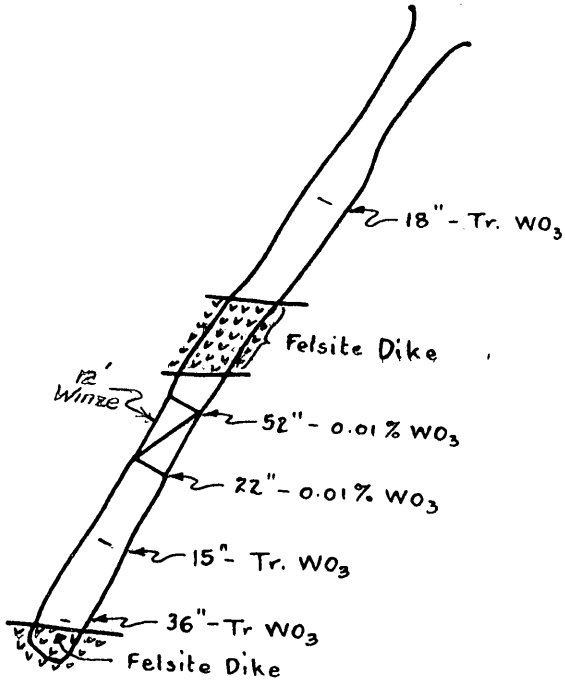

Fig. 4, ASSAY PLAN, LITTLE MAUDE 75-FT. ADIT

Scale 1"=20 ft.

DMA-62X

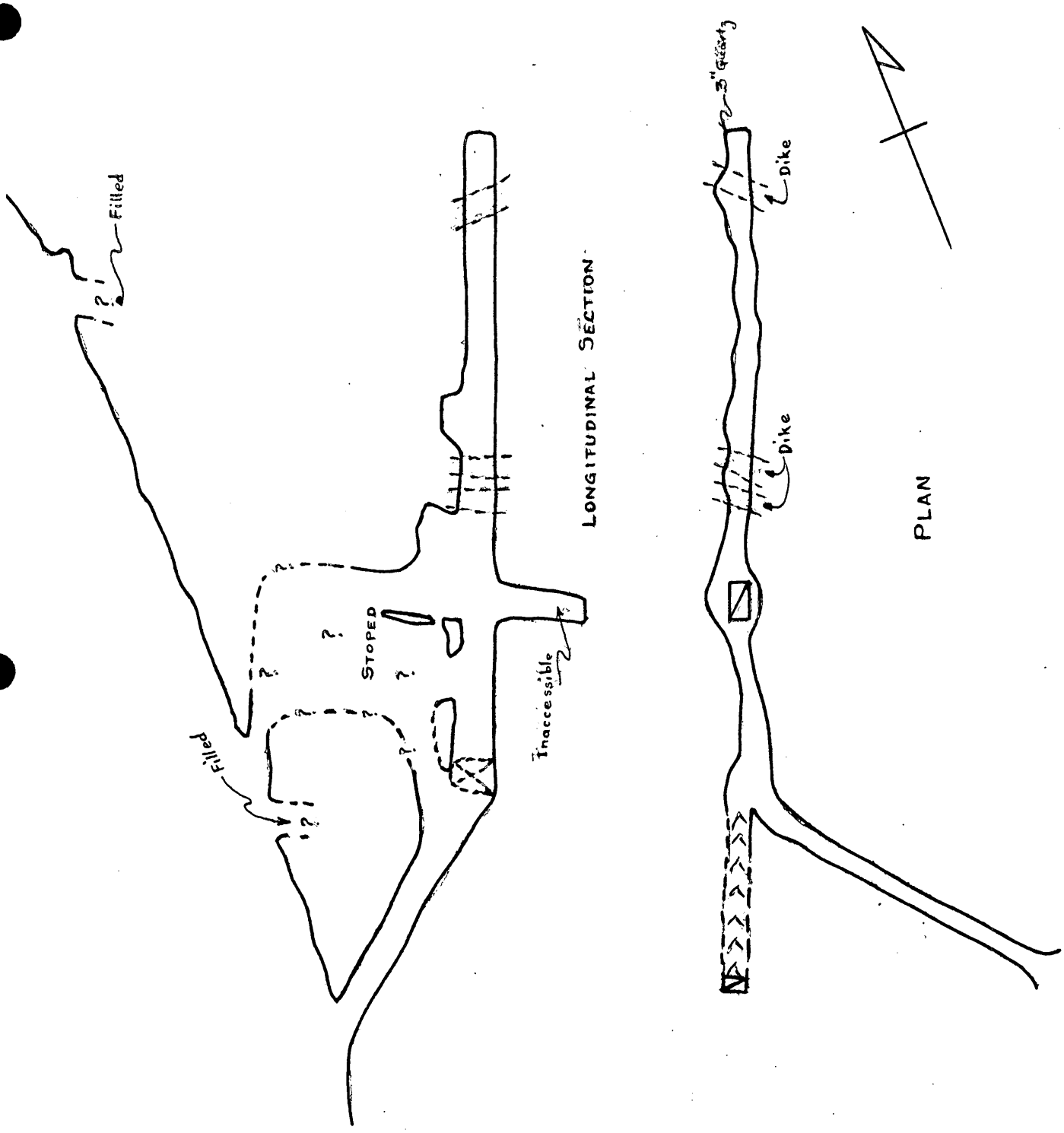

Fig. 6, MINE WORKINGS ON EVELYN CLAIM

Scale 1"=30 ft.

DMA-62X

had produced about 150 tons of ore containing, according to the available records, approximately 200 units of WO_3. As the average height of the stoped area was about 50 feet, it evidently yielded about 3 tons of ore per vertical foot. The vein is said to persist to the bottom of a winze which is about 20 feet below the adit level. This winze was not accessible at the time of the visit. If the ore shoot continues downward in its former size and grade to the depth of the winze, the indicated ore would amount to about 60 tons. Assuming a like persistence for an additional 50 feet below the bottom of the winze, the inferred reserves would amount to 150 tons. Thus the total ore reserves of the Evelyn would be of the order of 210 tons containing 280 units of WO_3.

The Little Jude vein is credited with a production of 21 units of WO_3. This came from the 330-foot adit where, for a length of about 25 feet along the back of the drift, ultra-violet light showed appreciable amounts of scheelite. In the other portions of the vein only occasional specks of scheelite were evident. An assay map of this adit was submitted by the applicant (fig. 3). Of the 15 samples shown on the map only 2 contained an appreciable tungsten content. However, these 2 samples were cut across a width of 42 inches which was greatly in excess of the apparent width of the tungsten concentration. The results of 4 samples taken in the ore shoot by G. [illegible] Bishop of the Bureau of Mines, showed an average content of 1.26 percent WO_3 over a width of 14 inches.

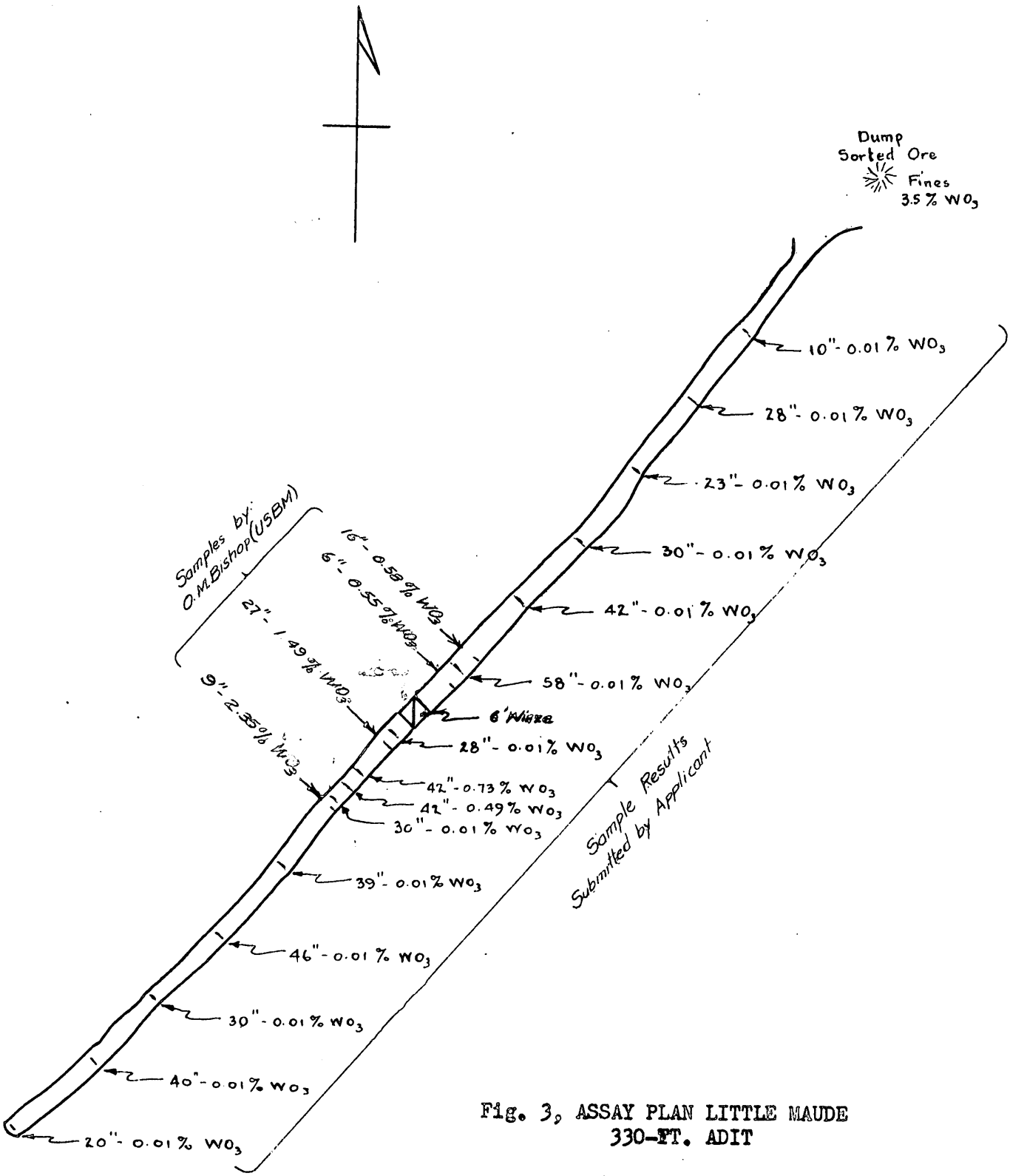

Fig. 3, ASSAY PLAN LITTLE MAUDE
330-FT. ADIT

Scale 1"= 40 ft.

DMA-62X

Judging from the sampling and the observations of the vein under ultra-violet light, it appears that for a length of 25 feet and with a width of 1.0 feet, this portion of the Little Maude vein will average between 1.0 and 1.5 percent WO_3. Assuming the persistence of this area for a distance of 25 feet upward and a like distance downward, the inferred ore would amount to about 100 tons containing between 100 and 150 units of WO_3.

The 75 foot adit on the Little Maude No. 1 claim is a few hundred feet northeast of the 330 foot adit and was apparently driven on the northerly extension of the Little Maude vein. In this 75 foot adit only traces of tungsten were present in the quartz segment lying between the transverse felsite dikes (fig. 4).

The incline shaft on the Pioneer vein followed a schistose fracture zone in which small disconnected quartz lenses and stringers were irregularly distributed within the zone. The vein matter attained widths of as much as 3.5 feet but the quartz seldom exceeded a width of 6 inches. A few units of tungsten was said to have been recovered by picking the scheelite-bearing quartz out of the shaft dump. The five samples taken in this shaft by Bishop of the Bureau of Mines showed little more than traces of tungsten. An assay map submitted by the applicant showed like results (fig. 5). A sample cut across the outcrop of the Pioneer vein at a point 16.0 feet northwest of the shaft contained 0.01 percent WO_3. Thus no ore was evident on the Pioneer vein.

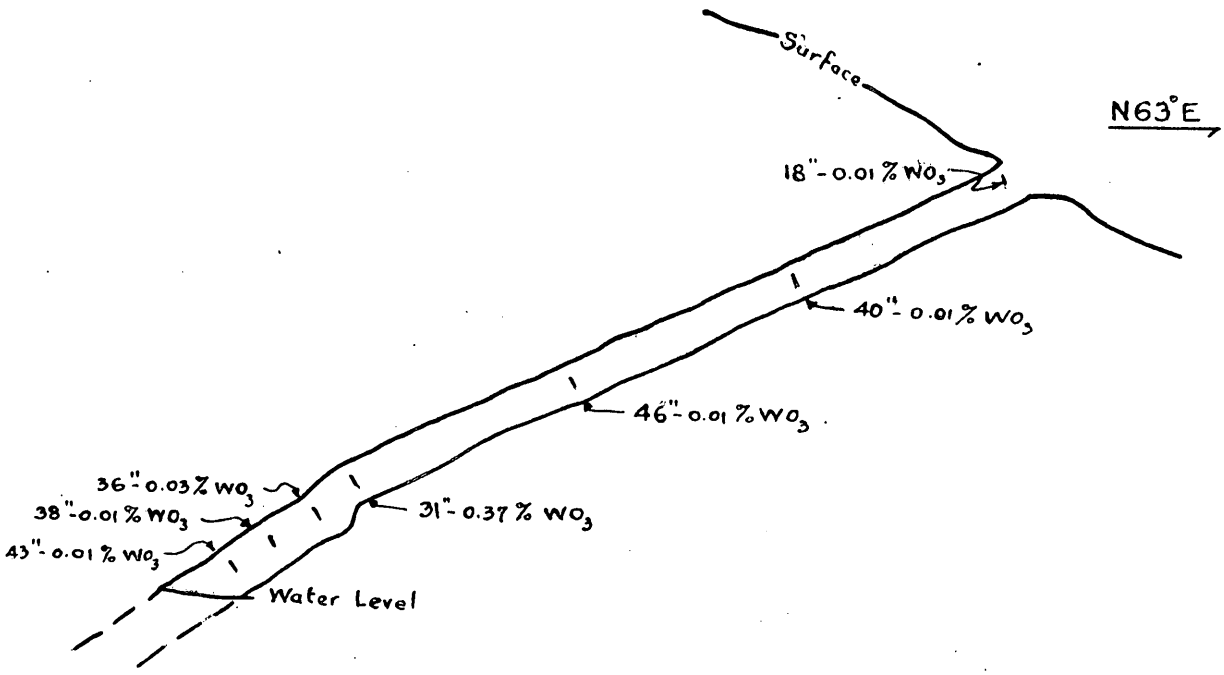

Fig. 5, ASSAY SECTION, PIONEER INCLINE SHAFT

Scale 1"=20 ft.

DMA-62X

PRESENT STATUS

As shown on the accompanying maps, the exploration work on the claims has been limited to short shallow adits that have followed the veins into the steep hillsides. The exception to this method of exploration was the work on the Pioneer vein where an incline shaft followed the vein down its dip for over 100 feet.

PROPOSED EXPLORATION

The proposed exploration work as set forth in the application is as follows:

<u>Evelyn claim:</u>

Extend adit 100 feet
Sink winze an additional 30 feet
Drift 100 feet from winze.

<u>Pioneer claim:</u>

Sink present shaft an additional 50 feet.
Drift 150 feet.
Raise 100 feet.

<u>Little Maude No. 1 claim:</u>

Sink winze 30 feet.
Drift from winze 50 feet.
Raise 30 feet.

No estimate of the cost of this work was submitted by the applicant. It is the opinion of the writer that this underground work would probably cost about $25,000.

The applicant lists the following additional expenditures:

Camp rehabilitation, repairs to well, pipe lines and tanks	[illegible]
Hoist, headframe and hoist house	1,300
General supplies	2,500
Miscellaneous and contingencies	6,000
Total	$15,000

The cost of constructing the necessary roads to the working sites were not given by the applicant. Thus the sum of $17,500, as requested in the application, is hardly adequate to cover the proposed work.

According to the applicant the following equipment was owned by him and would be available for use on the project.

1 - D4 Caterpillar angle dozer
1 - 30-60 road grader
1 - scarifier and road drag.
1 - 110 cfm Ingersoll Rand portable compressor.
1 - 105 cfm Ingersoll Rand semi-portable compressor.
1 - Auger hoist.
3 - Jackhammer drills.
1 - Power saw with 3 h.p. gasoline engine
1 - 1½-ton Chevrolet truck.
Miscellaneous small tools, drill steel and air hose.

The bulk of this appears to be road building equipment. It was not on the property at the time of the visit. The applicant thought the rental allowance on this equipment would be sufficient to cover his share of the total cost of the proposed exploration.

At the time the property was visited, about 9 miles of the road leading to the mine camp were practically impassable to other than vehicles with 4-wheel-drives. The last mile of the road was completely washed out. Burro trails leading from the camp served the mine workings on the Evelyn, Pioneer and Little Hands claims.

Before attempting any serious mining operations on the claims it would be necessary to construct about 6 miles of road in order to reach the camp, and an additional 2 miles to reach the sites of the proposed work. This road construction probably would cost between $[illegible],000 and $[illegible],000.

Production costs

The economic portions of the Evelyn and Little Lade veins average about 1 foot in width and are confined to a maximum strike length of 60 feet. Owing to the very limited tonnage that could be developed per foot of depth the cost of the necessary development work would probably exceed $25 a ton. Stoping, or cut-and-fill would be necessary in mining the ore. This cost would be in the neighborhood of $30 a ton.

The Yellow Jacket mine, about 60 miles by road from Dutch Flat, is being reopened and the mill remodeled. It is reported that the Yellow Jacket will treat custom ore. If so, this would be the most logical market for Dutch Flat ore. Assuming that ore was produced from the Evelyn and Little Lade ore bodies and was milled at Yellow Jacket, the costs would be approximately as follows:

Development and mining	$35 a ton
Transportation (60 miles at 15 cents a mile)	9
Milling	5
Royalty (minimum)	6
Total	$75 a ton

Assuming a mill recovery of 50 percent of the tungsten, paid for at $60 a unit, the realized mill value of an ore containing 1.5 percent WO3 would be $72 a ton. This is probably an optimistic estimate as

to both the operating costs and realized value of the Dutch Flat ores. The small producers of tungsten ores are at the mercy of private ore buyers and currently are being paid on the basis of not over $50 a unit for the recoverable tungsten trioxide.

Thus it appears that the small ore bodies on the Dutch Flat property probably would prove submarginal as they were in the past. In any event their potential production would be relatively insignificant.

CONCLUSIONS AND RECOMMENDATIONS

Since 1936, when scheelite was first discovered in the narrow quartz veins of the Dutch Flat area, the production has amounted to about 225 units of WO_3. Although traces of scheelite were present in several of the veins of the district, in only 2 occurrences was it found concentrated in appreciable quantities. The principal production came from a small lenticular ore shoot which had a maximum stope length of 50 feet and an average vein thickness of 1 foot. The other undeveloped exposure was limited to a length along the drift of 25 feet and a width of about 1 foot.

The indicated and inferred reserves in these 2 oreshoots were estimated of the order of 300 tons of ore containing about 430 units of WO_3.

It was estimated that the cost of producing tungsten ore from these small ore bodies would amount to $75 a ton and if exploited, little, or any profit would result.

The outcrops of the veins in the area are well exposed and relatively free of cover. They were well prospected for gold prior to the detection of tungsten. Since the discovery of scheelite, the veins were explored further and no doubt have been examined many times under ultra-violet light. Thus, there seems little likelihood that, in these veins, any noteworthy tungsten occurrences still remain undiscovered. As the potential of the 2 known ore bodies is so small, further exploration does not seem warranted.

Mining Division
Region IV

November 6, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 62X, Sheldon Heath, applicant; Evelyn, Little Maude and Pioneer Tungsten C laims, Dutch Flat Area, Mohave County, Arizona

The application of the subject docket was for an exploration loan of $37,500.

The proposed exploration program was the sinking and drifting on the three claims listed above. Scheelite is the principal tungsten mineral, which is found in quartz veins occupying fracture zones in gneissic rocks.

The indicated and inferred reserves in the Evelyn and Little Maude veins are estimated at 300 tons containing about 430 units of tungstic trioxide.

Because of the small tonnage and low grade of the reserve, the examining team recommends denial of the loan, with which we concur.

Paul T. Allsman

Paul T. Allsman

MINING DIVISION
REGION IV

October 30, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Final Report, DMA Docket 62X, Shelton Heath's Evelyn, Little Maude and Pioneer Tungsten Claims, Dutch Flat Area, Mohave County, Ariz.

Enclosed are original and 7 copies of the above report by Lloyd L. Farnham of the Bureau of Mines. Although C. S. Bromfield of the Geological Survey accompanied Farnham, a separate geological report will not be submitted by the Geological Survey. Bromfield concurs with Farnham's conclusions and recommendations.

This report has my approval.

Brochure is enclosed.

Walter R. Storms

CC P. T. Allsman (7)
C. A. Anderson
DMA 62X
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-62X, Shelton Heath's Evelyn, Little Maude and Pioneer Tungsten Claims, Dutch Flat Area, Mohave County, Arizona

L. L. Farnham, Mining Engineer
U. S. Bureau of Mines

October 1951

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By L. L. Farnham[1]

In May 1951, Sheldon Heath applied to the Defense Minerals Administration for an exploration loan of $37,500. The application was docketed as DMA-62X. The requested loan was to be used for further sinking and drifting on 3 tungsten claims, known as the Evelyn, Little Maude No. 1, and the Pioneer. These claims are members of what is known as the Dutch Flat group and are located in the Mohave Mountains about 43 miles south of Yucca, Mohave County, Ariz. The property was visited by a DMA field team during the week of October 8, 1951.

Scheelite, the principal tungsten mineral was found in narrow quartz veins occupying fracture zones in gneissic rocks. Since 1936 the recorded production of tungsten from the area has amounted to about 225 unites of WO_3.

Minute amounts of tungsten occur in several of the veins in the district but only in the Evelyn and Little Maude claims was it found concentrated in appreciable quantities. A lenticular ore shoot in the Evelyn vein produced about 150 tons of ore that contained approximately 200 units of WO_3. This ore body was mined to a depth of 50 feet below the outcrop and in that distance yielded about 3 tons of ore for each vertical foot. The other undeveloped scheelite concentration, in the Little Maude vein, was limited to a strike length of 25 feet with a width of one foot and was estimated to have an average grade of not over 1.5 percent WO_3.

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

The indicated and inferred reserves in the Evelyn and Little Maude veins were of the order of some 300 tons of ore containing in the neighborhood of 430 units of WO_3. No ore approaching a mineable grade was evident in the Pioneer vein.

Due to the size of the deposits in relation to their grade, it appears that they could not be mined profitably at this time. In any event the amount of tungsten that these Dutch Flat ore bodies can be expected to yield is so limited that further exploration does not seem warranted. Therefore, it is recommended that the application for a loan be denied.

SHELTON HEATH'S EVELYN, LITTLE MAUDE AND PIONEER TUNGSTEN CLAIMS
DUTCH FLAT AREA, MOHAVE COUNTY, ARIZONA
DMA-62X

Engineering Report

By L. L. Farnham
Mining Engineer
U. S. Bureau of Mines

October 1951

SHELTON HEATH'S EVELYN, LITTLE MAUDE AND PIONEER TUNGSTEN CLAIMS
DUTCH FLAT AREA, MOHAVE COUNTY, ARIZONA
DMA-62X

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INTRODUCTION

This report describes the results of the field examination of the Dutch Flat tungsten prospects made in connection with the loan application of Sheldon A. Heath of Yucca, Arizona to the Defense Minerals Administration, DMA Docket 62X. The applicant requested an exploration loan amounting to $37,500 for the purpose of sinking and drifting on 3 tungsten claims known as the Evelyn, Pioneer and Little Maude No. 1, all of which are members of what is known as the Dutch Flat group, situated in southwestern Mohave County, Ariz. The writer visited the property during the week of October 8, 1951.

ACKNOWLEDGMENTS

Thanks are due Earl Heath, the father of the applicant, for the help he extended the writer during the examination. Acknowledgments also are made to the engineers and geologists of the Bureau of Mines and Geological Survey whose data are used in this report.

LOCATION AND PHYSICAL FEATURES

The Dutch Flat group of claims is situated on the southwesterly slope of the Crossman Peak area in the Mohave (Chemehuevis) Mountains of Mohave County, Ariz. The claims occupy parts of Sec. 19, 20, 29 and 30, T. 14 N., R. 18 W. and are about 43 miles south of Yucca, a station on the Santa Fe railroad. The winding desert road that leads to the property leaves U. S. Highway 66 about 5 miles south of Yucca. Due to the numerous branching roads it is difficult to

describe the route and it would be almost impossible for a stranger to find the claims without the aid of a guide. The last 9 miles of the road follows several sand washes, portions of which, if traveled much, soon become impassable to ordinary automobiles.

The Dutch Flat group, contrary to the implication as suggested by the name, occupies an area of very rugged topography. The altitude of the various mine workings rangesfrom about 3,500 to 5,000 feet above sea level. Rainfall is limited so that only a scant growth of desert vegetation covers the region.

HISTORY AND PRODUCTION

The claims first were location in 1912 and were worked originally on a small scale for gold. The presence of tungsten in the area was not detected until the mid-thirties, whereupon a local small crude mill, formerly built for the treatment of the gold ores, was used to concentrate the tungsten-bearing quartz. Between 1936 and 1943, available records show that the Dutch Flat group produced 2,240 pounds of scheelite concentrates containing 78 units of WO_3, and that 148 units were contained in 34 tons of selected ore that was treated in the Boriana mill. Of this total production, amounting to some 225 units, it appears that about 168 units came from the Evelyn[1/] vein and 21 units from the Little Maude. The source of the remaining 36 units is not known but probably came largely from the Evelyn claims.

1/ Formerly known as the Gold Crown.

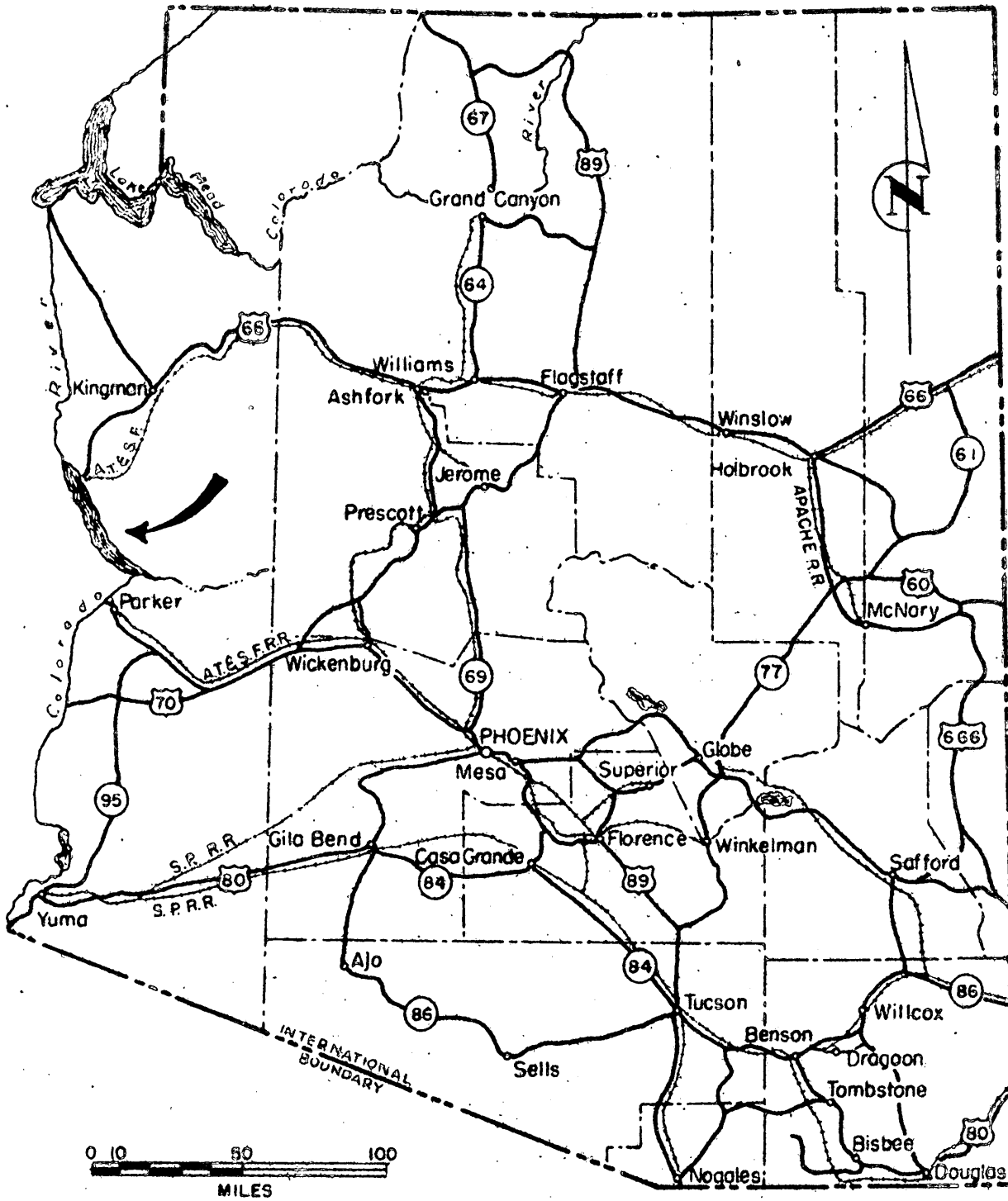

Fig. 1, LOCATION MAP, DUTCH FLAT TUNGSTEN AREA
MOHAVE COUNTY, ARIZONA

DMA-62X

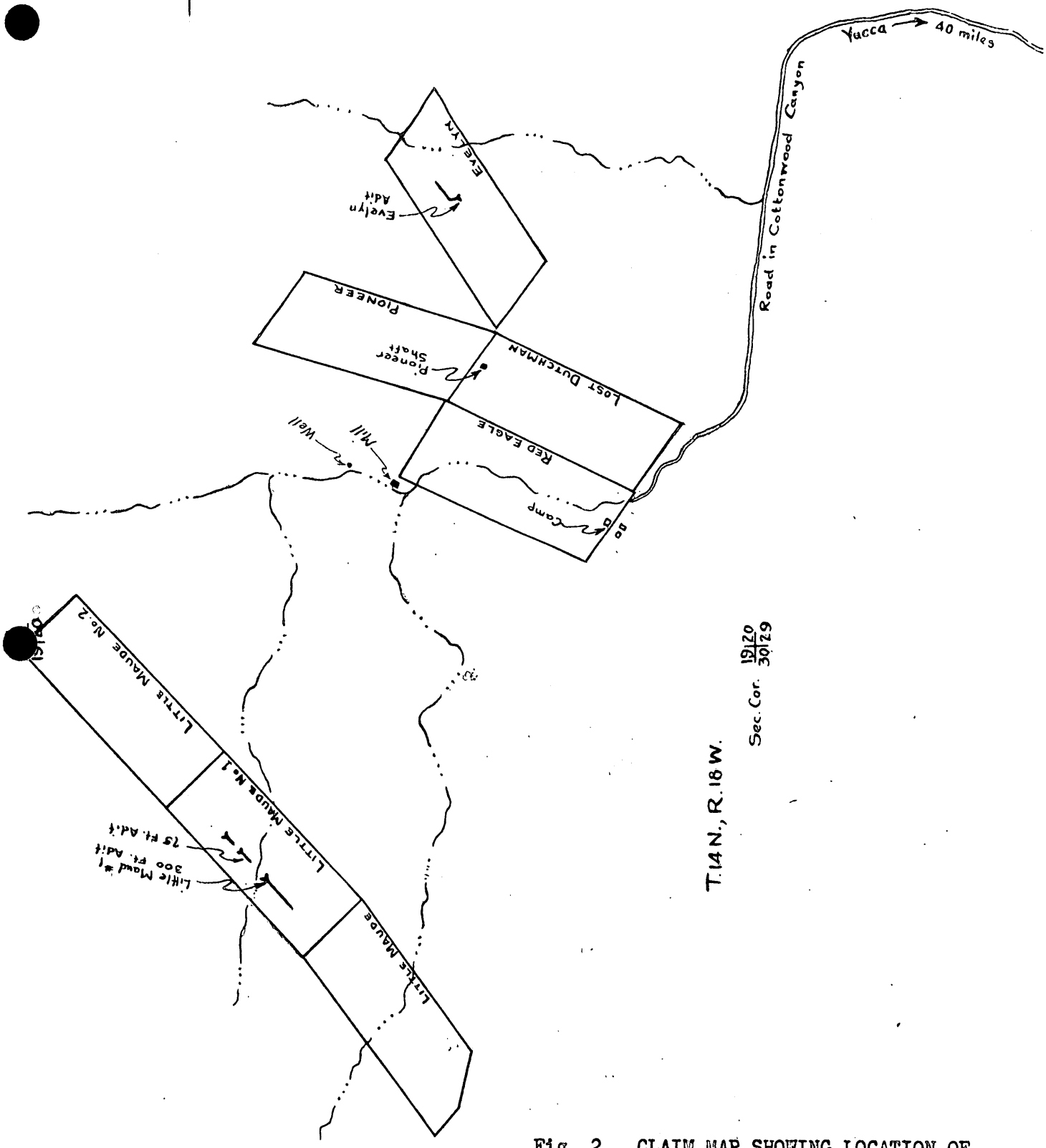

Fig. 2, CLAIM MAP SHOWING LOCATION OF PROPOSED EXPLORATION
Scale 1"=1,000 ft.

DMA-62X

OWNERSHIP AND EXTENT

Title to the Dutch Flat group of 25 unpatented mining claims is held by Julius Eaton of Yucca, Ariz.

The applicant, Shelton Heath, has a 3-year lease and option to purchase the group for $20,000, payable by a royalty of 10 percent of the value of the ore produced, or by cash, on or before December 1953. The buyer is obligated under the terms of the lease to perform 50 man-shifts of work per month for at least 8 months of each year.

DESCRIPTION OF THE DEPOSITS

There are 3 localities on the Dutch Flat group that have produced tungsten ore from narrow quartz veins which occupy fracture zones in gneissic rocks. Of these the Evelyn and Little Maude veins are nearly vertical northeastward trending fissures, while the Pioneer vein strikes northwest and dips 30 degrees southwesterly. Scheelite, the principal tungsten mineral, is associated with the quartz in which it usually occurs as thin erratic streaks aligned more or less parallel to the walls of the veins. The quartz ranges in thickness from mere stringers to short pods that attain widths of 3 feet. Regardless of the width of the vein the scheelite usually is found distributed in a band of the quartz that seldom exceeds 18 inches in thickness.

As observed under ultra-violet light, small specks of scheelite were widespread within the veins but areas containing appreciable quantities were limited to 2 short isolated lenses. Small amounts of

galena, pyrite and specularite were present in the quartz and minor quantities of gold and silver were associated with the sulphide minerals.

The largest tungsten ore shoot in the area was found in the Evelyn vein where it had a maximum stope length of 50 feet. The tungsten concentration in the Little Maude vein was limited to a strike length of about 25 feet. The exploration of these occurrences was confined to such shallow depths that little could be observed regarding the behavior of the ore shoots along the dip. They were lenticular in plan and presumably they will have the same tendency to pinch and swell along the dip.

The most striking feature in the area was the large number of intrusive dikes, which range from basic to felsitic varities. They were of varied size, age and attitude. Some cut the veins and by so doing, frequently interferred with the continuity of the quartz (fig. 4 & 6).

ORE RESERVES

The Evelyn vein has been the principal producer and the only one of the group where any serious attempt was made to mine tungsten ore. Near the center of the Evelyn adit, the vein had been stoped above the back of the drift for a maximum distance of 50 feet (fig. 6). Though largely filled and inaccessible, it was estimated that the stope

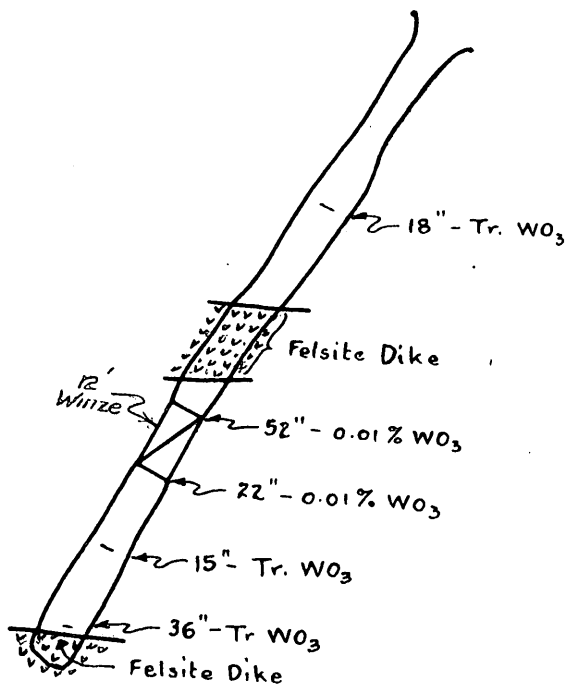

Fig. 4, ASSAY PLAN, LITTLE MAUDE 75-FT. ADIT

Scale 1"=20 ft.

DMA-62X

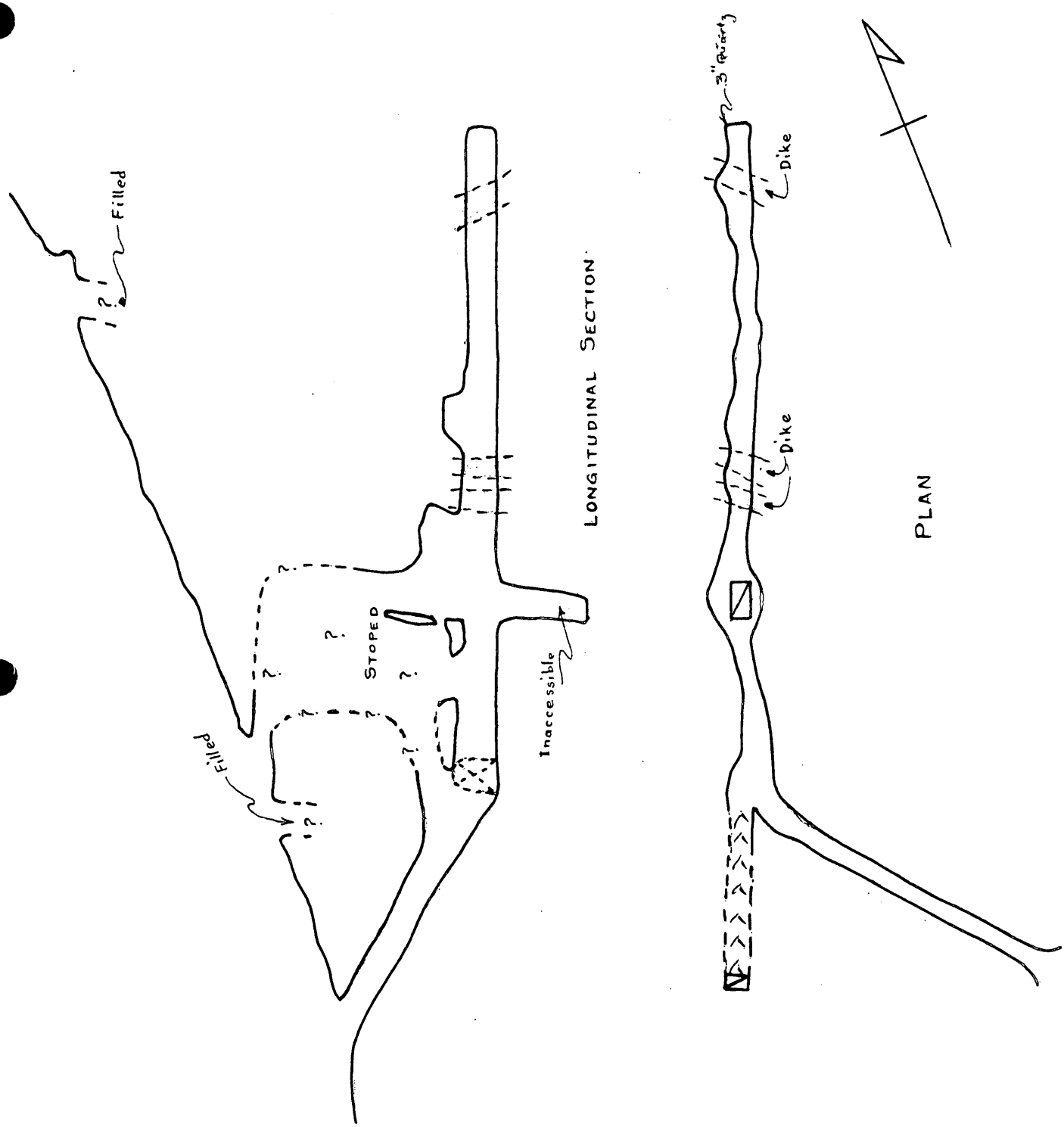

Fig. 6, MINE WORKINGS ON EVELYN CLAIM

Scale 1"=30 ft.

DMA-62X

had produced about 150 tons of ore containing, according to the available records, approximately 200 units of WO_3. As the average height of the stoped area was about 50 feet, it evidently yielded about 3 tons of ore per vertical foot. The vein is said to persist to the bottom of a winze which is about 20 feet below the adit level. This winze was not accessible at the time of the visit. If the ore shoot continues downward in its former size and grade to the depth of the winze, the indicated ore would amount to about 60 tons. Assuming a like persistence for an additional 50 feet below the bottom of the winze, the inferred reserves would amount to 150 tons. Thus the total ore reserves of the Evelyn would be of the order of 210 tons containing 280 units of WO_3.

The Little Maude vein is credited with a production of 21 units of WO_3. This came from the 330-foot adit where, for a length of about 25 feetalong the back of the drift, ultra-violet light showed appreciable amounts of scheelite. In the other portions of the vein only occasional specks of scheelite were evident. An assay map of this adit was submitted by the applicant (fig. 3). Of the 15 samples shown on the map only 2 contained an appreciable tungsten content. However, these 2 samples were cut across a width of 42 inches which was greatly in excess of the apparent width of the tungsten concentration. The results of 4 samples taken in the ore shoot by O. M. Bishop of the Bureau of Mines, showed an average content of 1.26 percent WO_3 over a width of 14 inches.

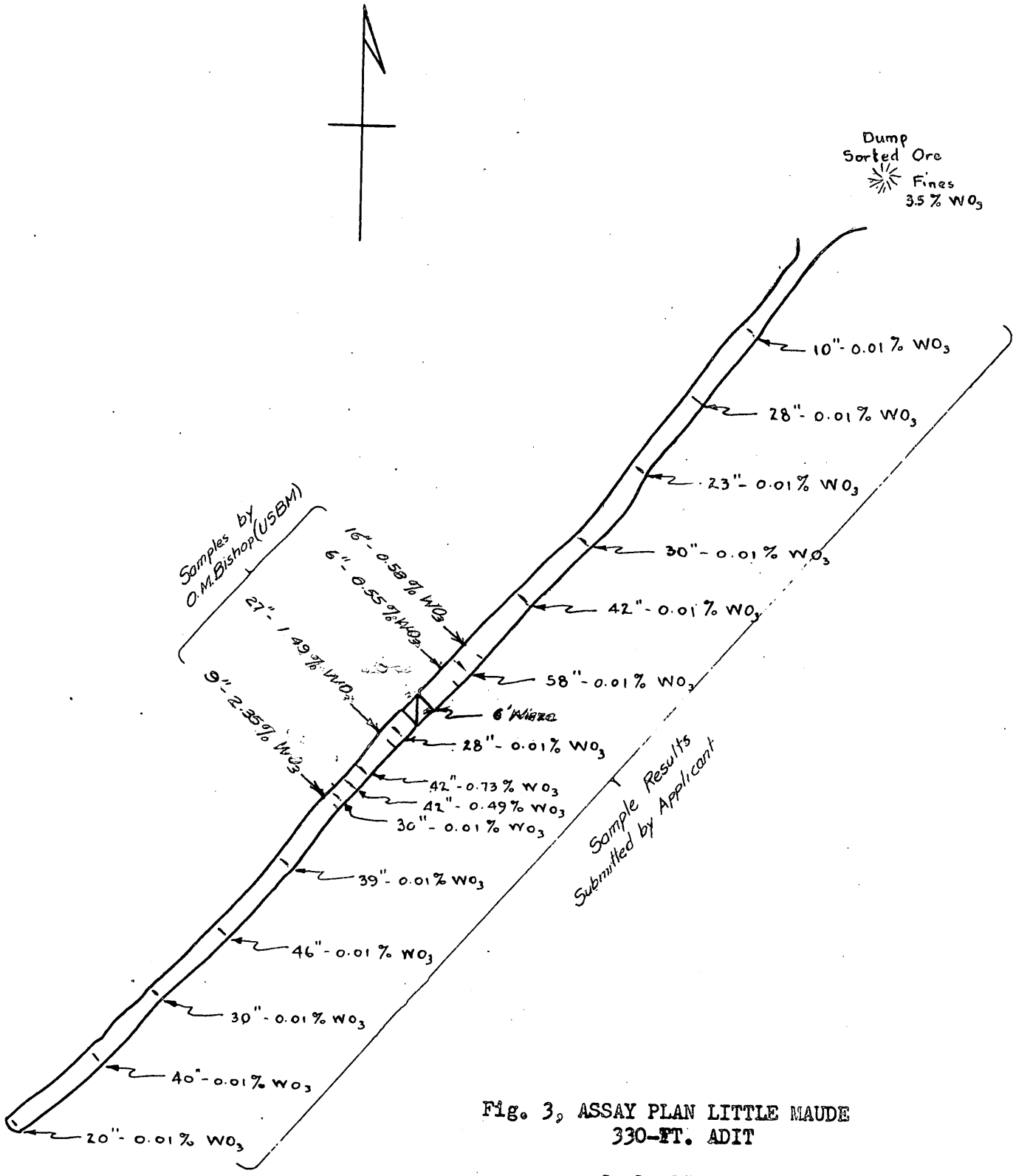

Fig. 3, ASSAY PLAN LITTLE MAUDE
330-FT. ADIT

Scale 1"= 40 ft.

DMA-62X

Judging from the sampling and the observations of the vein under ultra-violet light, it appears that for a length of 25 feet and with a width of 1.0 feet, this portion of the Little Maude vein will average between 1.0 and 1.5 percent WO_3. Assuming the persistence of this area for a distance of 25 feet upward and a like distance downward, the inferred ore would amount to about 100 tons containing between 100 and 150 units of WO_3.

The 75 foot adit on the Little Maude No. 1 claim is a few hundred feet northeast of the 330 foot adit and was apparently driven on the northerly extension of the Little Maude vein, In this 75 foot adit only traces of tungsten were present in the quartz segment lying between the transverse felsite dikes (fig. 4).

The incline shaft on the Pioneer vein followed a schistose fracture zone in which small disconnected quartz lenses and stringers were irregularly distributed within the zone. The vein matter attained widths of as much as 3.5 feet but the quartz seldom exceeded a width of 6 inches. A few units of tungsten was said to have been recovered by picking the scheelite-bearing quartz out of the shaft dump. The five samples taken in this shaft by Bishop of the Bureau of Mines showed little more than traces of tungsten. An assay map submitted by the applicant showed like results (fig. 5). A sample cut across the outcrop of the Pioneer vein at a point 16 0 feet northwest of the shaft contained 0.01 percent WO_3. Thus no ore was evident on the Pioneer vein.

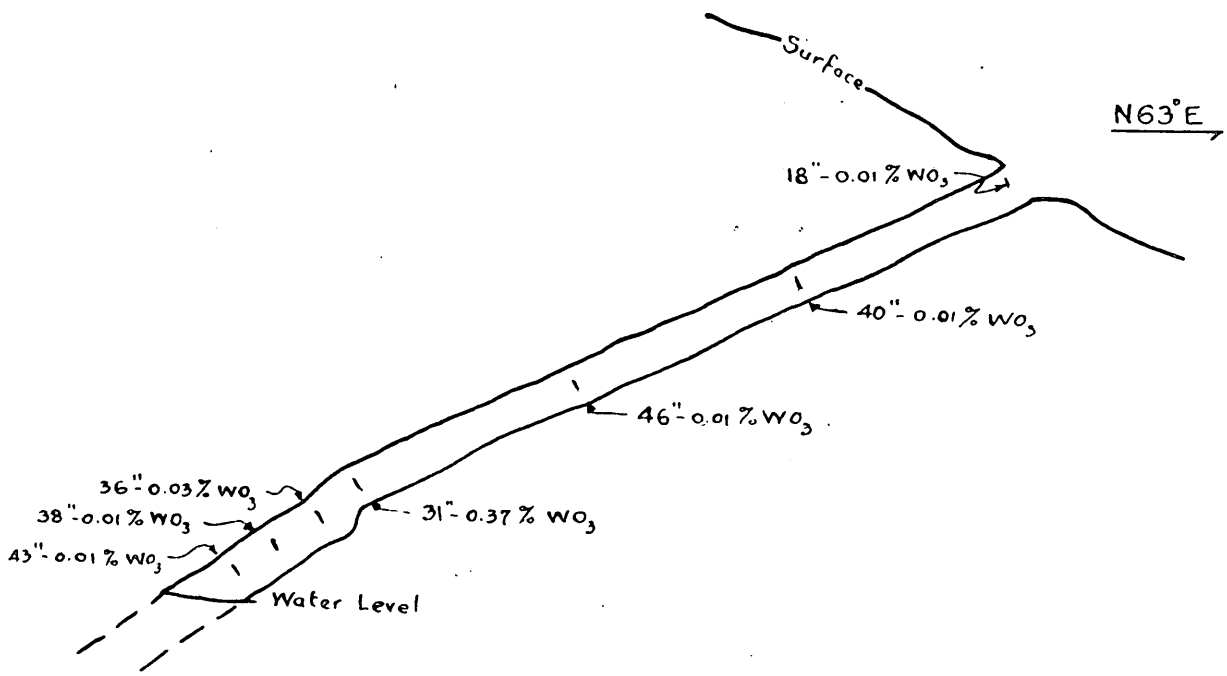

Fig. 5, ASSAY SECTION, PIONEER INCLINE SHAFT

Scale 1"=20 ft.

DMA-62X

PRESENT STATUS

As shown on the accompanying maps, the exploration work on the claims has been limited to short shallow adits that have followed the veins into the steep hillsides. The exception to this method of exploration was the work on the Pioneer vein where an incline shaft followed the vein down its dip for over 100 feet.

PROPOSED EXPLORATION

The proposed exploration work as set forth in the application is as follows:

Evelyn claim:

Extend adit 100 feet
Sink winze an additional 50 feet
Drift 100 feet from winze.

Pioneer claim:

Sink present shaft an additional 50 feet.
Drift 150 feet.
Raise 100 feet.

Little Maude No. 1 claim:

Sink winze 50 feet.
Drift from winze 50 feet.
Raise 50 feet.

No estimate of the cost of this work was submitted by the applicant. It is the opinion of the writer that this underground work would probably cost about $25,000.

The applicant lists the following additional expenditures:

Camp rehabilitation, repairs to well, pipe lines and tanks	$2,000
Hoist, headframe and hoist house	3,000
General supplies	2,000
Miscellaneous and contingencies	6,000
Total	$13,000

The cost of constructing the necessary roads to the working sites were not given by the applicant. Thus the sum of $37,500, as requested in the application, is hardly adequate to cover the proposed work.

According to the applicant the following equipment was owned by him and would be available for use on the project:

1 - R4 Caterpillar Angle Dozer
1 - 50-60 Pull Grader
1 - Scarifier and road drag.
1 - 60 cfm Smith portable compressor.
1 - 105 cfm Rix semi-portable compressor.
1 - Tugger hoist.
3 - Jackhammer drills.
1 - Power saw with 5 H.P. gasoline engine
1 - $1\frac{1}{2}$-ton Chevrolet truck.
Miscellaneous small tools, drill steel and air hose.

The bulk of this appears to be road building equipment. It was not on the property at the time of the visit. The applicant thought the rental allowance on this equipment would be sufficient to cover his share of the total cost of the proposed exploration.

At the time the property was visited, about 9 miles of the road leading to the mine camp were practically impassable to other than vehicles with 4-wheel-drives. The last mile of the road was completely washed out. Burro trails leading from the camp served the mine workings on the Evelyn, Pioneer and Little Maude claims.

Before attempting any serious mining operations on the claims it would be necessary to construct about 6 miles of road in order to reach the camp, and an additional 2 miles to reach the sites of the proposed work. This road construction probably would cost between $5,000 and $8,000.

PRODUCTION COSTS

The mineable portions of the Evelyn and Little Maude veins average about 1 foot in width and are confined to a maximum strike length of 50 feet. Owing to the very limited tonnage that could be developed per foot of depth the cost of the necessary development work would probably exceed $25 a ton. Resuing, or cut-and-fill would be necessary in mining the ore. This cost would be in the neighborhood of $30 a ton.

The Boriana tungsten mine, about 60 miles by road from Dutch Flat, is being reopened and the mill rebuilt. It is reported that the Boriana mill will treat custom ore. If so, this would be the most logical market for Dutch Flat ore. Assuming that ore was produced from the Evelyn and Little Maude ore bodies and was milled at Boriana, the costs would be approximately as follows:

Development and mining	$55 a ton
Transportation (60 miles at 15 cents a mile)	9
Milling	5
Royalty (minimum)	6
Total	$75 a ton

Assuming a mill recovery of 80 percent of the tunsten, paid for at $60 a unit, the realized mill value of an ore containing 1.5 percent WO_3 would be $72 a ton. This is probably an optimistic estimate as

to both the operating costs and realized value of the Dutch Flat ores. The small producers of tungsten ores are at the mercy of private ore buyers and currently are being paid on the basis of not over $50 a unit for the recoverable tungsten trioxide.

Thus it appears that the small ore bodies on the Dutch Flat property probably would prove submarginal as they were in the past. In any event their potential production would be relatively insignificant.

CONCLUSIONS AND RECOMMENDATIONS

Since 1936, when scheelite was first discovered in the narrow quartz veins of the Dutch Flat area, the production has amounted to about 225 units of WO_3. Although traces of scheelite were present in several of the veins of the district, in only 2 occurrences was it found concentrated in appreciable quantities. The principal production came from a small lenticular ore shoot which had a maximum stope length of 50 feet and an average vein thickness of 1 foot. The other undeveloped exposure was limited to a length along the drift of 25 feet and a width of about 1 foot.

The indicated and inferred reserves in these 2 oreshoots were estimated of the order of 300 tons of ore containing about 430 units of WO_3.

It was estimated that the cost of producing tungsten ore from these small ore bodies would amount to $75 a ton and if exploited, little, of any profit would result.

The outcrops of the veins in the area are well exposed and relatively free of cover. They were well prospected for gold prior to the detection of tungsten. Since the discovery of scheelite, the veins were explored further and no doubt have been examined many times under ultra-violet light. Thus, there seems little likelihood that, in these veins, any noteworthy tungsten occurrences still remain undiscovered. As the potential of the 2 known ore bodies is so small, further exploration does not seem warranted.

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

DIRECTOR'S
OFFICE
REGION IV
AUG 1951
BUREAU OF MINES
DENVER, COLORADO

Mr. J. H. East, Jr., Executive Officer
DMA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Docket No. 62-X

Commodity Tungsten

Applicant Sheldon Heath
P. O. Box 38, Yucca, Arizona

Please expedite the consideration of this application with particular reference to the points raised in the attached "Review."

Very truly yours,

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

For Bureau of Mines

For Geological Survey

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 62-X

For Field Referral

Commodity Tungsten

Total Amount $37,500 ???

Govt. Participation $28,125
(Applicant states $30,000)

1. Name and Address of Applicant Sheldon Heath
P. O. Box 38, Yucca, Arizona

2. Location of Property Dutch Flat area on south side of Chemehuevis Mountains, Mohave County, Arizona, about 1 mile southeast of Crossman Peak and about 40 miles by road south of Yucca, Arizona. Secsx 18, 19, 20, 30, T. 14 N., R. 18 W.

3. Mineral or metal Tungsten (scheelite) 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 according to USGS memo 1943 (copy attached

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? Yes
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? Yes (original)

Does the lease have sufficient time to run to cover a future productive period? Lease expires Dec. 15, 1953.

*question numbers are those of MF-103

DMA 62-X

7. Are subordination agreements necessary? Yes

   a) MF-201? No

   b) MF-202 Yes ; not furnished

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

   a) Available manpower Yes

   b) Equipment and supplies Yes
      (Question 14 plus general knowledge of availability)*

   c) Accessibility (question 12)* Yes

   d) Water (question 13)* Yes

   e) Power (question 13)* Yes

   Is a field check needed on any of these points? No

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

   Unknown

   Is a field check needed on this point? Yes

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

   a) Is the project adequately described? Yes

      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? No

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

      If not, what part of it is? _____

DMA-62K
Sheldon Heath

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data?_____ If so, attach a draft.

e) Are the cost estimates reasonable?_____

f) Should more information be requested from applicant? Yes

g) Is a field examination necessary to complete Exhibit A? Yes

11. Exhibit B (question 23-d)*

a) Is it applicable? Yes; improperly prepared by applicant.

b) If so, are sufficient data furnished?_____ If so, attach a draft.

c) Is a field check needed? Yes;

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes

b) Sufficient data?_____ If so, attach a draft.

c) Are rents and charges reasonable? Some appear excessive.

d) Is a field check needed? Yes

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? Yes

b) Is the schedule adequate for the work proposed? Yes

c) Is the schedule excessive for the work proposed?_____

d) Are the proposed wages and salaries reasonable? Yes

e) Is a field check needed? Check adequacy of proposed crew for work planned.

14. Exhibit E (question 23-c)*

a) Is it applicable? Yes

b) Sufficient data? No; applicant has not differentiated between repairs to existing facilities and new facilities (Exhibit B)

c) Reasonable?

d) Field check needed? Yes

15. In your judgment, can the proposed work be done in the proposed time? Yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? If the project appears to have any geologic merit, please help the applicant draw up the proposal in suitable style.

Reviewed by: Dwight M. Lemmon
Dwight M. Lemmon

Date July 25, 1951

97692

List of File to East 7/27/51

DMA 62 X Tungsten

Sheldon Arthur Heath

1- Report on Kampf Property, Dutch Flat by Hobbs, USGS.
1- Print Claim Map " "
2- MF-200 Expl. Contract
1- MF-103
2- MF-100
1- Copy lease & option
6- Assay and settlement sheets
6- Small print assay maps
3- Sheets assay results on assay maps
1- Blue print claims
1- Copy letter Holderer to Heath 6/19/51

KAMPF PROPERTY — Dutch Flat Area, Mohave County, Arizona

by

S. W. Hobbs, U. S. Geological Survey

June 5, 1943

Location: The property is located on the south side of the Chemehuevi (or Mohave) Mountains, Mohave County, Arizona, about 1 mile southeast of Crossman Peak, and about 40 miles by road south of the town of Yucca, Arizona.

Ownership and Equipment: The properties, consisting of 30 or more claims scattered over some three square miles of country, are owned by A. V. Kampf who has his home on the grounds. Kampf has produced small amounts of gold and silver from the veins on the property for over a period of some 30 years. Portions of the claims have, at various times, been leased to others, but no ore has been produced from these leases.

There is very little equipment on the property. All the mining done by Kampf has been done only with the aid of a single jack and burros. A small make-shift mill, said to handle 10 tons a day, has been built near the water supply in a small gully north of the camp.

Geology and ore deposits: The country rock of the district is schist and gneiss which has been intruded by felsite dikes. The ore deposits consist of quartz veins and shear zones which carry argentiferous galena, free gold, scheelite and a little wolframite. These veins follow three principal directions, one set strikes NE.-SW., another N-S and the third set, following strong fault zones, strikes about N. 75-80 degrees W. The N-S and the NE-SW veins locally follow the borders of the dikes.

The main production from the district has been in gold and silver. Scheelite occurs in the quartz veins but for the most part seems to be localized in the segments of the N-S and NE-SW veins which occur between the two predominent NW-SE faults -- the Contact fault and the Ida May fault on the map.

The only scheelite at the time of visit to the property in August, 1941 was on the Lost Dutchman, Gold Crown and Maude claims. On the Gold Crown claim, a tunnel has been driven for 100 or more feet on a quartz vein which averages 3 feet wide. Scheelite is erratically distributed through the quartz -- the WO_3 content being estimated as varying between 0.0 and 5 percent with an average of perhaps 1%. The vein, however, has very low backs and cannot be traced for any distance on the surface.

Some scheelite is reported to occur in the shaft on the N. end of the Lost Dutchman claim, 800 feet west of the Gold Crown. The Maude vein, a NE-SW vein, in section 19, is the main gold producer in the district. It is said to carry thin high-grade wedges of scheelite ore on its borders. None was seen in place at the time of the visit but Kampf recovers a certain amount of scheelite in the milling of gold ore.

General Outlook: No large amounts of ore are in sight in the district. The whole property appears to be a small scale producer and only such. Any recommendations should be preceded by a revisit to the property in order to evaluate it in the light of any new developments.

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

Mr. J. H. East, Jr., Executive Officer
DMA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Docket No. 62-X

Commodity Tungsten

Applicant Sheldon Heath
P. O. Box 38, Yucca, Colorado

Please expedite the consideration of this application with particular reference to the points raised in the attached "Review."

Very truly yours,

Tom Lyon, Chairman
Coordinating Committee

For Bureau of Mines

For Geological Survey

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 62-X

For Field Referral

Commodity Tungsten

Total Amount $37,500 ???

Govt. Participation $28,125
(Applicant states $30,000)

1. Name and Address of Applicant Sheldon Heath
P. O. Box 38, Yucca, Arizona

2. Location of Property Dutch Flat area on south side of Chemehuevis Mountains, Mohave County, Arizona, about 1 mile southeast of Crossman Peak and about 40 miles by road south of Yucca, Arizona. Secsx 18, 19, 20, 30, T. 14 N., R. 18 W.

3. Mineral or metal Tungsten (scheelite) 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 according to USGS memo 1943 (copy attached

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? Yes
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? Yes (original)

Does the lease have sufficient time to run to cover a future productive period? Lease expires Dec. 15, 1953.

*question numbers are those of MF-103

DMA 62-X

7. Are subordination agreements necessary? Yes

a) MF-201? No

b) MF-202 Yes ; Not furnished.

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

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

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

Unknown

Is a field check needed on this point? Yes

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

a) Is the project adequately described? Yes

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? No

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

If not, what part of it is? _____

DMA 62-X
Sheldon Heath

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data?_____ If so, attach a draft.

e) Are the cost estimates reasonable?_____

f) Should more information be requested from applicant? Yes

g) Is a field examination necessary to complete Exhibit A? Yes

11. Exhibit B (question 23-d)*

a) Is it applicable? Yes; improperly prepared by applicant.

b) If so, are sufficient data furnished?_____ If so, attach a draft.

c) Is a field check needed? Yes;

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes

b) Sufficient data?_____ If so, attach a draft.

c) Are rents and charges reasonable? Some appear excessive.

d) Is a field check needed? Yes

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? Yes

b) Is the schedule adequate for the work proposed? Yes

c) Is the schedule excessive for the work proposed?_____

d) Are the proposed wages and salaries reasonable? Yes

e) Is a field check needed? Check adequacy of proposed crew for work planned.

14. Exhibit E (question 23-c)*

a) Is it applicable? Yes

b) Sufficient data? No; applicant has not differentiated between repairs to existing facilities and new facilities (Exhibit B)

c) Reasonable?

d) Field check needed? Yes

15. In your judgment, can the proposed work be done in the proposed time? Yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? If the project appears to have any geologic merit, please help the applicant draw up the proposal in suitable style.

Reviewed by: Dwight M. Lemmon

Geo B Holdeen

Date July 25, 1951

97692

List of File to Eeast 7/27/51

DMA 62 X Tungsten

Sheldon Arthur Heath

1- Report on Kampf Property, Dutch Flat by Hobbs, USGS.
1-Print Claim Map " "
2- MF-200 Expl. Contract
1- MF-103
2- MF-100
1- Copy lease & option
6- Assay and settlement sheets
6- Small prints assay maps
3- Sheets assay results on assay maps
1- Blue print claims
1- Copy letter Holderer to Heath 6/19/51

FILE COPY
SURNAME:

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

August 1, 1951

Mr. Sheldon Heath
P. O. Box 38
Yucca, Mohave County
Arizona

In reply please refer to
DMA 62-I Tungsten

Dear Mr. Heath:

We have received the additional data concerning the proposed exploration at your tungsten prospects in the Dutch Flat area, Mohave County, Arizona.

We have requested that a field examination of the property be made through Mr. J. H. East, Jr., Executive Officer, DMA Field Team, Region IV, 224 New Customhouse, Denver, Colorado. Mr. East or his representative will get in touch with you as soon as a geologist or engineer is available to make the examination.

Very truly yours,

SIGNED

Tom Lyon, Director
Supply Division

DMLemmon:jh

CC: Adm. Reading File
Reports and Records Unit
Mr. Holderer
Mr. Lemmon
Field Team, Region IV - 2
Files

FILE COPY
SURNAME:

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

Maskard
Simmons/H
Holden
Merrill

July 27, 1951

Mr. Melton Keith
P. O. Box 23
Inez, Ribero County
Arizona

In reply please refer to
DMA (D-I Region

July 18, 1951

Mr. Sheldon Arthur Heath
Post Office Box 38
Yucca, Arizona

Subject: DMA-62X
Re: Exploration Loan -
Dutch Flat

My dear Mr. Heath:

Receipt is acknowledged of your application and attachments for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-62X and referred to Mr. George Holderer, Chief, Tungsten Branch on July 16, 1951.

In any future correspondence relating to your application, kindly refer to DMA-62X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

L. F. Strobel:jc
cc: ✓ Strobel
File
Holderer
Lyon

MF-200
(April 1951)

Docket No. DMA 62X
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 9 - 1951
LANDON F. STROBEL
Executive Secretary

It is agreed this 5th day of July, 1951, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Sheldon Arthur Heath
Yucca, Ariz.
P.O. Box 38
hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Arizona, County of Mohave described as follows: [3] Dutch Flat Group of mining claims Chemehuevis mining dist.
with respect to which the Operator represents and undertakes: [4]

(*a*) That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: Holds Lease & Option on said property, above property is free of all encumbrances, claims & liens.

(*b*) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for Tungsten Scheelite Ore and prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials and labor, all properly designed to bring the project to completion within a period of [6] 6 to 18 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Attached hereto, marked "Exhibit 'B'," is a detailed list of additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute its agreed pro-rata share of the cost. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro-rata share.

6. *Operating equipment.* Attached hereto, marked "Exhibit 'C'," is a detailed list of operating equipment divided into categories of items to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or rental value, as the case may be, annexed to each. As to equipment purchased for the project, the Government will contribute its agreed pro-rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro-rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, and other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* Attached hereto, marked "Exhibit 'D'," is an itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project.

9. *Rehabilitation and repairs.* Attached hereto, marked "Exhibit 'E'," is a detailed schedule of existing facilities, buildings, installations, and fixtures, with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition, which cost shall be allowed as a cost of the project.

10. *Allowable costs of the project.* The allowable costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in the contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, or any other indirect costs not expressly allowed by these regulations, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Participation by the Government.* At the end of the first full calendar month after the Operator has commenced work under the project, and at the end of each succeeding calendar month, the Operator shall submit to the Government a voucher for payment with a detailed statement of work done and allowable costs (as defined in Article 10 of this agreement) incurred, in a form and with supporting data acceptable to the Government. After approving the voucher, the Government shall pay to the Operator 75 percent of the sum of such costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $ 32,000.00 which is 75 percent of the agreed estimated total cost of this project, $ 37500.00

12. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

13. *Progress reports.* The Operator shall provide the Government with monthly reports of progress in form and content satisfactory to the Government, and upon the completion of the project or termination of the contract shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

14. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent additional for each full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the property which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

15. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

16. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in triplicate the day and year first above written.

Sheldon Arthur Heath
(Operator)

By Earl Heath
Gen. Manager,

THE UNITED STATES OF AMERICA

By

U. S. GOVERNMENT PRINTING OFFICE 16—64066-1

Sheldon Arthur Heath SMA 62X

No 3. Exhibit A.

Evelyn claim, that shows on map Gold Crown
Sink 50 ft Winz
Drift 100 ft from bottom of winz
100 ft drifting north in haulage tunnel

Pioneer Claim.
Sink shaft 50 ft deeper
150 ft drifting in bottom of shaft.
100 ft raise for ventilation, and
prove up ore body.

Little Maude Claim
Sink 50 ft winz.
50 ft of drifting in bottom of Winz
50 ft raising from tunnel level.
All maps - drawings + assays
attached.

No 5. Exhibit B.

Repairing + remodeling cook house +
bunk house, build 1 additional
bunk house - - - - - - - 1,000.00
Pipe lines + Water tanks 1 000.00
Gallas frame material,
building + erecting same,
and collar in shaft - - 1000.00

Sheldon Arthur Heath S.M A 62X

Exhibit B. Cont.

Hoist house & Blacksmith shop building - - - - - $ 1000.00

Lumber, mine timber, pipe cement, galvanized iron, coal carbide, powder, caps, fuze, drill steel, jackbits, gas & oil, grease - - - $ 2000.00

Miscelaneous Expense current maintainance, supplies & insurance $1,000.00 per month, 6 months $ 6000.00

no 6. Exhibit C.

Hoist to be purchased & installed $ 1000.00

	Per day
1 Caterpillar Tractor R H. with angled dozer - -	$ 40.00
Pull Grader & Scarfar	10.00
1-60 cu. ft. Portable Smith Compressor	10.00
1-110 " " R&S Compressor - -	10.00
1-2 R. Jugger Hoist, for under ground sinking - - -	5.00
1 - C.P. Liner & carriage	
1 - Thor Jackhammer & carriage	
1 - C.P. Jackhammer, air & water hose & connections for all hammers - -	5.00

Shelton Arthur Heath Jr. MA 62X

6-C-continued.

	Per day.
Blacksmith shop complete mechanical + carpenter tools	$
Acetylene Torch - - -	5.00
1-Hobart 400 amp Arc Welder - -	10.00
1-1½ Ton Chevrolet Truck	20.00
1-Willis Jeep pickup	10.00
1-Ventilation blower + engine	2.00
Rental per day	$ 127.00

Realizing that all this equipment will not be in use at all times, but all equipment will be on the ground, for standby use, I think $75.00 per day would be a fair allowable ~~use~~ Rental.

Or in other words the operators 25% participation in the project.

Page 4 Sheldon Arthur Heath DMA 62X
M.F 200.

no 8 - Exhibit D.

1 - Truckdriver + general maintainance man
$12 per day - 144 days -- $1728.00
2 - miners, each $14.00 per day - 144 days 4032.00
4 - muckers " $12.00 " " " " " 6912.00
1 - Hoistman $14.00 " " " " 2016.00
1 - Gen Manager $350.00 per months - 6 months - - $2100.00
Total - - - - 16 788.00

no 9 - Exhibit E.

Rehibilitation, repair and material for Camp 1,000.00

MF-200
(April 1951)

Docket No. DMA 62-X
Commodity Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 9 - 1951
LANDON F. STROBEL
Executive Secretary

It is agreed this 5th day of July, 1951, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and[2] Sheldon Arthur Heath
Yucca, Ariz.
P.O. Box 38
hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Arizona County of Mohave described as follows:[3] Dutch Flat Group of Mining Claims
Chemehuevis Mining Dist.
with respect to which the Operator represents and undertakes:[4]

(*a*) That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: Holds Lease and Option on said property
Above property is free all, encumbrances,
Claims and liens

(*b*) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for Tungsten Scheelite Ore; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of[6] 6 to 12 months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Attached hereto, marked "Exhibit 'B'," is a detailed list of additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute its agreed pro-rata share of the cost. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro-rata share.

6. *Operating equipment.* Attached hereto, marked "Exhibit 'C'," is a detailed list of operating equipment divided into categories of items to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or rental value, as the case may be, annexed to each. As to equipment purchased for the project, the Government will contribute its agreed pro-rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro-rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* Attached hereto, marked "Exhibit 'D'," is an itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project.

9. *Rehabilitation and repairs.* Attached hereto, marked "Exhibit 'E'," is a detailed schedule of existing facilities, buildings, installations, and fixtures, with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition, which cost shall be allowed as a cost of the project.

10. *Allowable costs of the project.* The allowable costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in the contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, or any other indirect costs not expressly allowed by these regulations, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Participation by the Government.* At the end of the first full calendar month after the Operator has commenced work under the project, and at the end of each succeeding calendar month, the Operator shall submit to the Government a voucher for payment with a detailed statement of work done and allowable costs (as defined in Article 10 of this agreement) incurred, in a form and with supporting data acceptable to the Government. After approving the voucher, the Government shall pay to the Operator 75 percent of the sum of such costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $30,000.00, which is 75 percent of the agreed estimated total cost of this project, $37500.00

12. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

13. *Progress reports.* The Operator shall provide the Government with monthly reports of progress in form and content satisfactory to the Government, and upon the completion of the project or termination of the contract shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

14. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent additional for each full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the property which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

15. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

16. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in triplicate the day and year first above written.

Sheldon Arthur Heath
(Operator)

By L. Earl Heath
Gen. Manager

THE UNITED STATES OF AMERICA

By _____

U. S. GOVERNMENT PRINTING OFFICE 16—64066-1

Page 1
FM-200

Sheldon Arthur Heath D.M.A 62X

No 3 - Exhibit A.

Evelyn Claim, that shows on map Gold Crown
Sink 50 ft Winze
Drift 100 ft in bottom of winz
100 ft drifting north in haulage tunnel
Pioneer Claim.
Sink main shaft 50 foot deeper
150 ft of drifting in bottom main shaft.
100 ft raise for ventilation and
prove up ore body.
Little Maude Claim.
Sink 50 foot Winz
50 ft. drifting in bottom of winz
50 ft. of raising from tunnel level.
All maps, assays + drawings attached.

No 5 - Exhibit B.

Repairing + remodeling cookhouse + A
Bunk house - Build 1 additional bunkhouse 1,000.00
Pipe lines + water tanks 1,000.00
Dallas frame material,
Building + erecting same,
Collar in shaft - - - - - 1,000.00

Page 2
M.F 200

Sheldon Arthur Heath D.M.A 62X

No 5 - Exhibit B. Cont.

Hoist House + Blacksmith Shop building - - $ 1,000.00

Lumber, mine timber, pipe, cement, galvanized iron, coal, carbide, powder, caps, fuze, drill steel, jack bits, gas oil, grease - - - - - - $ 2,000.00

Miscellaneous Expense Current maintainance, supplies + insurance $1,000.00 per month 6 months $ 6,000.00

No 6 - Exhibit C.

Hoist to be purchased + installed $ 1,000.00

	Per day.
1 Caterpillar Tractor R.4 with angeled dozer	$ 40.00
1 Pull Grader + Scarfar	10.00
1 - 60 cu. ft Portable Smith Compressor	10.00
1 - 110 " " Rix Compressor	10.00
1 - D.R. Jugger Hoist, for underground work - -	5.00

Page 3
MF200

Sheldon Arthur Heath D.M A62X

Exhibit C. cont.

1-C.P. Liner & carriage
1-Ihor Jackhammer & carriage
1-C.P. Jackhammer,
Air & water high pressure hose, Per day.
and connections to all hammers 5.00
Blacksmith shop complete
mechanical & carpenter tools
Accetylene Torch Comp. -- 5.00
1-Hobart 400 amp. Arc Welder 10.00
1-1½ ton Chevrolet Truck - 20.00
1-Willis Jeep pickup 10.00
1-Ventilation Blower & engine 2.00
Rental Per. day - - 127.00

Realizing that all this equipment will not be in use at all times, but all equipment will be on the ground, for standby use, I think $75.00 per day, would be a fair allowable rental, or in other words, the operators 25% percipation in the project.

Page 4
M.F 200

Sheldon Arthur Heath A.M.A 62X

No 8 Exhibit D.

1- Truckdriver & general maintainance man $12.00 per day - 144 days -- $1728.00

2 Miners each $14.00 per day 144 days 4032.00

4 Muckers " $12.00 " " " " 6912.00

1 Hoistman $14.00 " " " " 2016.00

1 General Manager $350.00 per month - 6 months - - - - $ 2100.00

Total - - 16788.00

No 9- Exhibit E.

Rehibilitation, repairs & and material for camp 1,000.00

Docket No.
D.M.A. 62 X

Yucca Ariz
June 28-51

Mr Geo B. Holderer
Chief Tungsten Branch

Dear Sir,-

Your letter of June 19th, just received, and contents noted.

The reason I havn't sent, maps, assays & other technical data, up to this time I have been unable to get this data.

Now I have some of it on hand, and expect to get more in a few days

I will fill in form FM 200, and answer question on FM-103 - namely, 14-20-21-23-24, to the best of my ability.

I will make a cincere effort to have all the data collected, in the mail in the next ten days.

Respectfully yours
Sheldon A. Heath
Yucca
Ariz.
Box 38

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 3 - 1951
LANDON F. STROBEL
Executive Secretary

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

A.E.C.

June 19, 1951

Mr. Sheldon A. Heath
P. O. Box 38
Yucca, Arizona

Dear Mr. Heath:

Your application for a $30,000 Exploration loan has been received and given Docket No. DMA 62-X.

In order for your application to be considered for an exploration loan, it is necessary for you to submit sufficient evidence concerning the deposit to enable this office to determine if it merits the time and expense required for a field examination. This you have failed to do. You have not furnished assay maps or other evidence of work done as our letter to you of January 17 and April 30 requested. There still must be evidence that the Government's 75 percent share has a reasonable mining chance of being returned. This application will be held in suspension until further detailed information is received.

Exploration assistance under DMA regulations is essentially a contract between Government and applicant wherein the latter agrees to do specific work. Until the work to be done is carefully described a contract cannot be written. We are enclosing herewith, for your guidance, one copy of contract form MF-200. You will note therein the attachments which are called for, viz., exhibits A, B, C, D, and E. Each is for the purpose of recording its own appropriate part of the information necessary to a completed contract. The information on form MF-103 must be furnished to us in considerable detail by the applicant, who can do so by carefully answering questions 14, 20, 21, 23, and 24 in particular. Further, question 22 must be answered fully in order that we may determine that exploration of your particular property is justified.

An additional copy of MF-103 is enclosed herewith for your guidance. If in need of further assistance, you should communicate with the nearest office of the U. S. Bureau of Mines.

The copy of lease and option is herewith returned as you requested.

Very truly yours,

George B. Holderer

George B. Holderer
Chief, Tungsten Branch

TJBallard:ec
CC: Adm. Reading File
Mr. Strobel
Enclosure Mr. Holderer
Files

June 18, 1951

Mr. Sheldon A. Heath
Yucca
Arizona

Subject: DMA-62X
Re: Exploration Loan -
Dutch Flat

My dear Mr. Heath:

Receipt is acknowledged of your application and attachments of May 18, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-62X and referred to Mr. George Holderer, Chief, Tungsten Branch on May 28, 1951.

In any future correspondence relating to your application, kindly refer to DMA-62X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

L. F. Strobel:jc
cc: Strobel
File
Holderer
Lyon

a.e.c.

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

April 30, 1951

Mr. Sheldon Arthur Heath
Yuma, Arizona

In reply please refer to DMA-62

Dear Mr. Heath:

A review of our previous correspondence with you, together with our information on your tungsten deposits, indicates that you do not have sufficient reserves to justify the loan requested for production purposes.

However, an exploration aid program has recently been approved whereby money is loaned for exploration purposes on a share basis. In the case of tungsten the Government will advance up to 75% of the loan if the applicant will provide the balance.

If you are interested in this type of assistance, please complete the enclosed Forms MF-100 and MF-103 and return in quadruplicate to this office. The governing regulations are shown on the enclosed sheet MO-5.

Very truly yours,

P. R. Bradley

P. R. Bradley, Jr. Chief,
Chrome-Manganese-Tungsten Branch

Enclosure

cc: Adm. Reading File
Mr. Strobel
Mr. Bradley
Files

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

January 17, 1951

Mr. Sheldon A. Heath

Yucca, Arizona

Dear Mr. Heath:

Reference is made to your letter of December 26, and the attached forms [illegible]-146, regarding an application for a loan to operate a tungsten mine. (Docket No. DMA-62.

This application is suspended pending receipt of information regarding the ore reserves. It is noted in your letter of November 7 to Mr. East that you list 10,000 tons of 1 percent WO_3 ore as "measured." The reports covering the property on hand in Washington do not agree with this estimate; however, it is possible that additional work has been done since the last visit of a representative of the Government. Please forward the assay maps or other data on which your estimate is based.

Sincerely yours,

P. R. Bradley, Jr., Chief
Tungsten Division
DMA

RMGeehan/mjb

Copy to: P. R. Bradley
Mr. Strobel
Mr. Ridgway
Mr. Geehan
Files

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma-62X

Date received 5/28/51

Participation

Sheldon Arthur Heath
Yucca
P.O. Box 138 Ariz

Name and address of applicant

Date May 18-51

FILL IN THIS BLOCK

Date of application Dec 26-1950 Estimated cost $30,000.00

Mineral or metal Tungsten Scheelite Ore Percentage of Government participation 75%

Location of mine Chemehuevis Dist,
Mohave Co. Ariz.

Date of filing MF-100 May 18-1951 DMA Docket Number, if available 62X

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.
*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.
*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.
22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.
24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Sheldon Arthur Heath
(Name of company)

By Earl H Eath
(Signature of authorized official)

May 18 — 1961
(Date)

Gen. Manager
(Title)

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Form MF 103. Sheldon Heath SMA-62

The Applicant

1 — Individual
2 — No.
3 — No.
4 — a — Applicant has been raised in a mining camp, has had 10 years experience.
B — Manager of project has 25 years experience
5 — Lessee
6 — Free of all encumbrances.
7 — Good standing
8 — Form NSR B-146 — page 8 & 9
9 — Will furnish necessary equipment for mining, building roads and Transportation.

— Property —

10. a — Dutch Flat, group of 24 claims
B — Chemehuevis mining district
Township 14 N Range 18 W
Sections 18-19-20-30.
11 — Dutch Flat (always)
12 — 40 miles So. Yucca, Ariz. R.R shipping point.
Desert Road, fair condition

Form MF 103. Sheldon Heath - DMA-62

13 - 60 ft dug well, sufficient for domestic uses, year around
All power will be gas engines.

14 - 3 houses + necessary mining equipment

15 - By Truck - Milled Signal Sandy River

16 - A - Engineers Report, and Government has some data, obtained during World War 2, when property was closed down by Government Orders, Refer DMA 62.

B - I do not have this information

C - I have none.

17 - This property is not in production

18 - Refer to report DMA-62

19 - Consideration should be given to roads, as no mining property can be developed and put into production without good roads.

— Exploration —

20 - Tungsten Scheelite ore.

21 - 700 ft of drifting, sinking + raising 6 months to complete

22 - There is good showings of tungsten in several places, continuous veins ore goes down, proven in 150 ft shaft

Form MF 123. Sheldon Heath & MF 62

22-cont. This property could have worked through World War 2, and be in production now, if this area hadn't been restricted by the Government.

— The Requirements & Cost —

23 — 700 ft. new developement work.
Approximate cost $25,000.00
2 miles Dutch Flat road to repair
3 miles new road, in and about the mining claims to make it accessable, to put in equipment and carry on said exploration.
at a cost of $5,000.00.
Itemized as follows.

		days	
A — 1 Truck driver & repairman	$12.00	144	$1728.00
2 Miners	$14.00 per day	144	4032.00
4 Muckers	$12.00 " "	144	6912.00
1 Hoistman	$14 " "	144	2016.00
B — 1 General Manager	$350 per mo	6 mo	2100.00
C — Repair & remodel buildings			1000.00
D — Pipelines, water tanks, Gallis frame, shaft collar, Skids, Hoist house — Blacksmith shop			3000.00
E — Hoist —			1000.00

F — rorented equipment
g — my complete eq. equipment would rent for $75.00 per day or more

Form MF 103 Sheldon Heath 2/14/62

H. Lumber, mine timber, galvonized iron, coal, carbide, powder, caps fuse, gas, oil, grease, steel and jackbits. 2000.00

I. Miscelaneous expense
Current maintainance
Supplies + insurance,
$1,000.00 per month, 6 months $ 6000.00

Total Amount $ 29888.00

24 - Information in above itemized estimate.

FILE COPY
SURNAME:

Holderer

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

June 19, 1951

Mr. Sheldon A. Heath
P. O. Box 38
Yucca, Arizona

Dear Mr. Heath:

Your application for a $30,000 Exploration loan has been received and given Docket No. DMA 62-X.

In order for your application to be considered for an exploration loan, it is necessary for you to submit sufficient evidence concerning the deposit to enable this office to determine if it merits the time and expense required for a field examination. This you have failed to do. You have not furnished assay maps or other evidence of work done as our letter to you of January 17 and April 30 requested. There still must be evidence that the Government's 75 percent share has a reasonable mining chance of being returned. This application will be held in suspension until further detailed information is received.

Exploration assistance under DMA regulations is essentially a contract between Government and applicant wherein the latter agrees to do specific work. Until the work to be done is carefully described a contract cannot be written. We are enclosing herewith, for your guidance, one copy of contract form MF-200. You will notetherein the attachments which are called for, viz., exhibits A, B, C, D, and E. Each is for the purpose of recording its own appropriate part of the information necessary to a completed contract. The information on form MF-103 must be furnished to us in considerable detail by the applicant, who can do so by carefully answering questions 14, 20, 21, 23, and 24 in particular. Further, question 22 must be answered fully in order that we may determine that exploration of your particular property is justified.

An additional copy of MF-103 is enclosed herewith for your guidance. If in need of further assistance, you should communicate with the nearest office of the U. S. Bureau of Mines.

The copy of lease and option is herewith returned as you requested.

Very truly yours,

George B. Holderer

George B. Holderer
Chief, Tungsten Branch

TJBallard:ec
CC: Adm. Reading File
Mr. Strobel
Enclosure Mr. Holderer
Files

FILE COPY
SURNAME:

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

July 18, 1951

Mr. Sheldon Arthur Heath
Post Office Box 38
Yucca, Arizona

Subject: DMA-62X
Re: Exploration Loan -
Dutch Flat

My dear Mr. Heath:

Receipt is acknowledged of your application and attachments for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-62X and referred to Mr. George Holderer, Chief, Tungsten Branch on July 16, 1951.

In any future correspondence relating to your application, kindly refer to DMA-62X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

L. F. Strobel:jc
cc: Strobel
✓File
Holderer
Lyon

FILE COPY
SURNAME:

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

June 18, 1951

Mr. Sheldon A. Heath
Yucca
Arizona

Subject: DMA-62X
Re: Exploration Loan -
Dutch Flat

My dear Mr. Heath:

Receipt is acknowledged of your application and attachments of May 18, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-62X and referred to Mr. George Holderer, Chief, Tungsten Branch on May 28, 1951.

In any future correspondence relating to your application, kindly refer to DMA-62X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel jc
Executive Secretary

L. F. Strobel:jc
cc: Strobel
✓File
Holderer
Lyon

DMA 62

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

April 30, 1951

Mr. Sheldon Arthur Heath
Yucca, Arizona

In reply please refer
to DMA-52

Dear Mr. Heath:

A review of our previous correspondence with you, together with our information on your tungsten deposits, indicates that you do not have sufficient reserves to justify the loan requested for production purposes.

However, an exploration aid program has recently been approved whereby money is loaned for exploration purposes on a share basis. In the case of tungsten the Government will advance up to 75% of the loan if the applicant will provide the balance.

If you are interested in this type of assistance, please complete the enclosed forms MF-100 and MF-103 and return in quadruplicate to this office. The governing regulations are shown on the enclosed sheet MO-5.

Very truly yours,

P. R. Bradley

P. R. Bradley, Jr. Chief,
Chrome-Manganese-Tungsten Branch

Enclosure

cc: Adm. Reading File
Mr. Strobel
Mr. Bradley
Files

FILE COPY
SURNAME:

Geehan

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

January 17, 1951

Mr. Sheldon A. Heath

Yucca, Arizona

Dear Mr. Heath:

Reference is made to your letter of December 26, and the attached forms NSRB-146, regarding an application for a loan to operate a tungsten mine. (Docket No. DMA-62.

This application is suspended pending receipt of information regarding the ore reserves. It is noted in your letter of November 7 to Mr. East that you list 10,000 tons of 1 percent WO_3 ore as "measured." The reports covering the property on hand in Washington do not agree with this estimate; however, it is possible that additional work has been done since the last visit of a representative of the Government. Please forward the assay maps or other data on which your estimate is based.

Sincerely yours,

P. R. Bradley, Jr., Chief
Tungsten Division
DMA

RWGeehan/mjb

Copy to: P. R. Bradley
Mr. Strobel
Mr. Ridgway
Mr. Geehan
Files

DMA-62

856

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. Dma-62 X

Date received 5/28/51

Participation

Sheldon Arthur Heath
Yucca
Ariz
P.O. Box 38

Name and address of applicant

Date May 18-51

FILL IN THIS BLOCK

Date of application Dec 26-1950 Estimated cost $30,000.00

Mineral or metal Tungsten Scheelite ore Percentage of Government participation 75

Location of mine Chemehuevis Dist.
Mohave Co. Ariz.

Date of filing MF-100 May 18-1951 DMA Docket Number, if available 62 X

INSTRUCTIONS

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THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.
*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.
*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
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    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.
22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.
24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Sheldon Arthur Heath
(Name of company)

By Earl Heath
(Signature of authorized official)

May 18 — 1951
(Date)

Gen Manager
(Title)

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Form MF 103 Sheldon Heath SMA-62

The Applicant,

1- Individual

2- no

3- no

4- a- Applicant has been raised in a mining camp, 10 years experience

B- Manager of project, 25 yrs. experience

5- Lessee

6- Free of all encumberances

7- Good standing

8- Form NSRB 146 - page 8 & 9

9- Will furnish necessary equipment for mining, building roads and transportation.

— Property —

10- Dutch Flat, group of 24 claims

B- Chemehuevis Mining district

C- Township 14 N Range 18 W - Sec. 18-19-20-30

11- Dutch Flat (always)

12 40 miles So. Yucca, Ariz - R.R. Shipping point

Desert roads - fair condition

13- 60 ft dug well, sufficient for domestic purposes, year around

All power will be gas engines

14- 3 houses & Necessary mining equipment

Form MF 103 Sheldon Heath D. MA - 62

15 - By Truck, Milled Signal, Sandy river.

16-a - In engineers report, government has some data, obtained during World War 2, When property was closed down by government orders, Refer DMA-62

B - I do not have this information.

C - I have none.

17 - This property is not in production

18 - Refer to report DMA - 62

19 - Consideration should be given to roads, as no mining property can develope and put into production, without good roads.

Exploration.

20 - Tungsten Scheelite ore.

21 - 700 ft of drifting, raising & sinking 6 months to complete.

22 - There is a good showing of tungsten in several places, continuous zones, ore goes down, proven in 150 ft shaft, This property could have work through world War 2, and be in production now, if this aria hadnt been restricted by the Government.

23 - The Requirements & cost,

700 ft new developement work Aprox. cost $25,000.00

2 miles Dutch Flat road to repair

Form MF 103 Sheldon Heath S MA - 62

3 miles new road in and about the claims, to make it accessable to put in the equipment, and carry on said exploration.

At a cost of $5,000.00

Itemized as follows.

	days.	$
A- Truck driver + repairman $12 per day	144-	1728.00
2 Miners $14 per day - - -	144-	4032.00
4 Muckers $12 per day - - -	144-	6912.00
1 Hoistman $14 per day	144-	2016.00
B- General Manager 350. per 6 months		2100.00
C- Repair + remodel Bldgs - -		1000.00
D. Pipe lines, water tanks Gallas Frame, shaft collar, skids, Hoist house, blacksmith shop.		3000.00
E- Hoist - - - - - -		1000.00
F- No rented equipment		
G- My complete equipment would rent for $75.00 per day or more.		
H- Lumber, mine timber, galvonized iron, coal, carbide, caps, fuze, gas, oil, grease, steel + jack bits - - -		2000.00
I Miscellaneous expense. Current maintainance supplies + insurance 6 mo. 1,000.00 per mo. - - - - -		6000.00
		29888.00

24 Information itemized above.

Form MF-103
(April 1951)

U. DEPARTMENT OF THE INTERI
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA-62X

Date received 5/28/51

Participation

Sheldon Arthur Heath
Yucca, Ariz
P.O Box 38

Name and address of applicant

Date May 17-1951

FILL IN THIS BLOCK

Date of application Dec. 26-1950 Estimated cost $30,000.00

Mineral or metal Tungsten Scheelite ore Percentage of Government participation 75%

Location of mine Chemehuevis Dist.
Mohave Co. Arizona

Date of filing MF-100 May 17-1951 DMA Docket Number, if available 62X

INSTRUCTIONS

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*1. Is applicant an individual, partnership, or corporation?
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*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
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16—64067-1

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*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

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    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
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*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
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(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
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    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
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    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
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24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Sheldon Arthur Heath
(Name of company)

By Earl Heath
(Signature of authorized official)

May 15 — 1951
(Date)

Gen. Manager
(Title)

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Form MF 103. Sheldon Heath & MA-62

The Applicant

1 - Individual
2 - No.
3 - No.
4 - A - Applicant has been raised in a mining camp, had 10 yrs. experience
B - Manager of project, 25 yrs. experience
5 - Lessee
6 - Free of all encumbrances
7 - Good standing
8 - Form N.S.R.B - 146 - page 8-9.
9 - Will furnish necessary equipment for mining, building roads and transportation.

Property —

10 - A - Dutch Flat, group of 24 claims
B - Clemehuevis Mining District.
Township 14 N Range 18 W - Sec. 18-19-20-30
11 - Dutch Flat (always)
12 - 40 miles so. Yucca, Ariz, RR Shipping point.
Desert road - fair condition.

Form MF 103. Sheldon Heath D MA-62

13- 60 ft dug well, sufficient for domestic uses, year around
All power will be gas engines

14- 3 houses, necessary mining equipment

15- By Truck- Milled, Signal, Saddy River

16- a- Engineers report, Government has some data, obtained during World War 2, when this property was closed down, by government orders, D.MA-62
B- I do not have this information
C- I have none

17- This property is not in production.

18- Refer to Report D.MA-62

19- Consideration should be given roads, as no mining property can be developed and put in production, without good roads.

— Exploration —

20- Tungsten Scheelite ore.

21- 700 ft. of drifting, sinking & raising. 6 months to complete.

22- There is a good showing of tungsten

Form MF-103 Sheldon Heath D.M.A-62

in several places, continuous vanes, ore goes down, proven in 150 ft. shaft, This property could have worked through World War 2, and be in production now, if the area hadnt been restricted by the government.

23- — The Requirements + Cost

700 ft new developement work, Aproximate cost $25,000.00

2 miles Dutch Flat road to repair 3 mi, new road in + about the claims, to make it accessable, to put in equipment, and carry on said exploration, at a cost of $5,000.00

	$ Per day	days	$
A. 1 Truckdriver + repairman	12.00	144	1728.00
2 Miners $14.01 per day		144	4032.00
4 Muckers $12.01 per day		144	6912.00
1 Hoistman $14 per day		144	2016.00
B- 1 Gen. Manager $350.00 per mo. bonus			2100.00
C- Repair + remodel Bldgs			1000.00
D- Pipe lines, water tanks, Gallis Frame, Shaft Collar, Skids			3000.00
Hoist house + Blacksmith shop			1000.00
E- Hoist			

F- No rented equipment.

G- My complete equipment would rent for $75.00 per day or more.

Form MF 103. Sheldon Heath SMA-62

H- Lumber, mine timber galvanized iron, coal, Carbide, powder, caps fuze, gas, oil, grease steel + jackbits ------ 2000.00

I- Miscellaneous Expense. Current maintainance supplies + insurance $1,000.00 per month - 6 months x 6000.00

Total Amount, 29888.00

24- Information in above itimazed Statement,

Form MF-103
(April 1951)

U. DEPARTMENT OF THE INTER
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. .....

Date received .....

Participation .....

Name and address of applicant

Sheldon Arthur Heath
Yucca Ariz
P. O. Box 35

Date May 18-51

FILL IN THIS BLOCK

Date of application Dec 26-56 Estimated cost $30,000.00

Mineral or metal Tungsten Scheelite Ore Percentage of Government participation 75

Location of mine Chemehuevis Dis,
Mohave Co. Ariz.

Date of filing MF-100 May 18-1951 DMA Docket Number, if available 62

INSTRUCTIONS

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(Name of company) (Signature of authorized official)

May 18—1951 Gen. Manager
(Date) (Title)

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*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Form MF103 Sheldon Heath DMA-62

The Applicant

1- Individual
2- no
3- no
4- a- Applicant was raised in a mining camp, has had 10 yrs experience
B- Manager of project, 25 yrs experience
5- Lessee
6- Free of all encumberances.
7- good standing
8- Form NSRB 146 - page 8-9.
9- Will furnish necessary equipment for mining, road building and transportation.
~~10~~-

— Property —

10- Dutch Flat groupe of 24 claims
B. Chemehuevis Mining District.
C. Township 14 N Range 18 W - Sec 18-19-20-30
11- Dutch Flat (always)
12- 40 miles So. Yucca, Ariz, R.R. Shipping point.
Desert Roads, fair condition

Form MF 103 - Sheldon Heath D.M.A-62

13- 60 ft dug well, sufficient for domestic purposes, year around.
All power will be gas engines

14- 3 houses - Necessary mining equipment

15- By truck, Milled Signal, Sandy river

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B. I do not have this information
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6 months to complete

Form MF 103 - Sheldon Heath & MA 62

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Aprox. Cost $25,000.00

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3 miles new road in and about the mining claims, to make it accessable, to put in equipment and carry on the explaration work
At a cost of $5,000.00
- Itemized as follows.

		days	
a - 1 truckdriver & repair man @ 12 per day		144	1728.00
2 miners @ 14.00 per day - -		144	4032.00
4 muckers @ 12.00 " "		144	6912.00
1 Hoistman @ 14.00 " "		144	2016.00
B - 1 Gen Manager @ 350.00 per Mo. 6 mo. - - - -			2100.00
C - Repair & Remodel Bldgs - - - -			1000.00

Form MF 103 Sheldon Heath D M A 62.

D- Pipe lines, water tanks
Gallas Frames, Shaft Collar, Skids
Hoist House - Blacksmith Shop 3000.00

E- Hoist - — — — — 1000.00

F- No rented equipment

G- My complete equipment
would rent for $75.00 per day - or more.

H- Lumber, mine timber, galvanized
iron, coal, carbide, powder, caps,
fuze, gas, oil, grease steel &
Jackbits. — — — — — 2000.00

I- Miscellaneous Exps.
current maintainance
supplies + insurance 6000.00
6 months @ 1,000.00 per month - -
Total Amount - $29,888.00

24- Information in above
itemized statement.

2-7-51
Bradley

DMA-62

Juneau, Alaska
Jan 19 1951

LANDON F. STROBEL

Defense Mineral Adm.
Washington 25 - D.C.

Dear Sir,-

In answer to your letter of Jan 19-51 docket No. D.M.A. 62.

I am taking the liberty to answer your letter, as it will be some time before my son, Sheldon A Heath, will be home and have a chance to do so.

In regard to the 10,000 tons measured ore, I would say that there was a mistake some where, my guess would be it would be nearer 2 thousand tons than ten thousand.

As you very well know there is no mines with that much ore blocked out that would be asking for assistance, but I will say that this is one of the best tungsten prospects in Prohane County.

I am the man that sold the Boriana Tungsten to Lieser and Study Brown in 192[illegible], and you have records of their production. From these facts you should know we know something about tungsten.

Office have the mining equipment and tools, [illegible] know the

business, and all that is holding up the operation is finance.

As previously stated, we have just acquired this property and have no maps or assay sheets, but one can guarantee to show your engineers a good showing on two different veins. 125 ft shaft on one, and a 400 ft tunnel on the other one.

My suggestion would be one of two courses.

If you are looking for a proved up mine with so much blocked out tonnage, you had better cancel this application.

Or the national emergancy needing tungsten, as it does, this property could go into production in a very short while, after the perliminary work was done, it would pay its way, and as you know that is more than most of them can do, furthermore we are willing to put up our time and equipment to put this property into production to help the National Emergancy.

The shape the mining industry is in, needs help, in order to do its part for the national emergancy.

So you boys in Washington had better get busy, and if you don't we could loose this next war.

If you have any intentions of helping the small mine operators please let me know.

If not we will be forced to do somthing else.

Resp. yours

Earl Heath
P.O. Box 38.
Yucca
Ariz.