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DEFENSE MINERALS ADMINISTRATION
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DMA Docket No. 3948

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To:	Mr. Mill	Date	11-28-55
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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

NOV 28 1955

Mr. Dan O'Laurie
Post Office Box 402
Moab, Utah

Re: Docket No. DMEA-3948 (Copper)
Dan O'Laurie
Pine Tree Claims
Mineral County, Nevada

Dear Mr. O'Laurie:

Your application for aid for an exploration project and other reports available to us in Washington concerning your application have been reviewed.

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

Careful study of all our information, although noting a small amount of marginal copper ore on your leases, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

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

Sincerely yours,

Frank E. Johnson

ACTING Administrator

JAMT/er 11/25/55
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Pennington, USBM
Mr. Kiilsgaard, USGS
Region II, (2)
Chron.

R.C.H.

UNITED STATES
DEPARTMENT OF THE INTERIOR 500
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

November 25, 1955

Memorandum

To: The Administrator

From: Chief, Base Metals Division

Subject: Denial of Application, Docket No. DMEA-3948 (Copper), Dan O'Laurie, Pine Tree Claims, Mineral County, Nevada.

The cited application, dated August 8, 1955, was forwarded by the Executive Officer, Region II, and was received by this office on August 15. The Field Team examined the property and their report was received on November 16.

The Applicant proposed to (1) explore the surface showings by bulldozing, diamond and churn drilling, and shallow inclines and drifts, (2) underground drifting and crosscutting, (3) explore the deposit at depth with a 600 inclined shaft and drifting on 3 levels. The Applicant estimates that the work will require two years to complete and that it will cost $331,129.00.

The provisions development of the property consisted of a 500 foot adit, a 340 incline shaft and several shallow surface trenches.

The Field states: "There is no geologic evidence to indicate the existence of the copper-sulfide ore bodies that are the target of the proposed exploration. All previous exploration, both along the strike and down the dip of the structure, has indicated that the copper occurence at the Pine Tree claims consists of small erratically distributed concentrations of secondary copper minerals that were probably derived from primary copper sulfide minerals sparsely disseminated in the thrust zone. The existing 300 foot inclined shaft, 600 foot adit, and numerous prospect pits are considered adequate tests of the deposit and are believed to have exposed mineralized material which is representative of the average character and grade of the deposit."

We concur with the recommendations of the Field Team and the Commodity members of the USGS and the USBM that this application be denied.

J. W. Ald
for W. R. Griswold

File Copy
Surname

J. [illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR 500
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

November 25, 1955

Memorandum

To: The Administrator

From: Chief, Base Metals Division

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We concur with the recommendations of the Field Team and the Commodity members of the USGS and the USBM that this application be denied.

W. R. Griswold

JWAlt/er
Copy to: Docket
Base Metals
Chron.

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

all Betty

RECEIVED
NOV 18 1955

November 17, 1955

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: J. W. Pennington, Branch of Base Metals

Subject: Review of Field Team Examination, Docket No. DMEA - 3948 (copper), Dan O'Laurie, Pine Tree Claims, Mineral County, Nevada, Report dated November 4, 1955, Received November 15, 1955, $331,129

The Field Team examination of the property indicates that the mineralization consists of secondary copper minerals in irregular pods and lenses of erratic distribution. The probable tonnage and grade are low, and there is little evidence of a large copper-sulfide deposit. In addition the proposed program is far too extensive for this property.

I concur with the recommendations of the Field Team that the application for Government assistance to explore the property be denied.

J. W. Pennington

J. W. Pennington

Copy to: Division of Minerals
Branch of Base Metals
J. W. Pennington
R. W. Geehan
Thor Kiilsgaard, U.S.G.S.
F i l e s

IN REPLY REFER TO:

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

RECEIVED
NOV 17 1955

November 16, 1955

Re: DMEA 3948
Dan O'Laurie
Pine Tree Claims
Mineral Co., Nevada
$331,129.00 - Copper

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

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

Subject: Review of Field Team report.

The applicant requested assistance in doing surface exploratory work on what was taken to be the surface expression of a sulfide deposit, and, if warranted, underground work. Extensive sampling by the applicant had indicated a long zone showing spotty 'oxide' copper mineralization. The average reported copper content of the samples is low but some good grade samples were recorded.

Twelve samples taken by the examining engineer averaged 0.91% copper for an average width sampled of 4.62 feet. The low was 0.08% for 3 and 5 feet, and the high 3.77% for 3 feet. The maximum thickness sampled was 7.0' for 0.78% copper. The sampling checked reasonably well with that of the applicant's geologist, but the examiners' over-all appraisal does not agree with that of the consulting geologist inasmuch as examiners concluded, "there is no geologic evidence to indicate the existence of the copper-sulfide ore bodies that are the target of the proposed exploration . . . . The existing 300-foot inclined shaft, 600-foot adit, and numerous prospect pits are considered adequate tests of the deposit and are believed to have exposed mineralized material which is representative of the average character and grade of the deposit."

I concur with the recommendations of the examiners and the Field Team that the application be denied.

N. E. Nelson

N. E. Nelson

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

1605 Evans Avenue
Reno, Nevada

November 7, 1955

Memorandum

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

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-3948 (Copper)
Dan O'Laurie
Pine Tree Claims
Mineral County, Nevada

Reference is made to your letter of August 31, 1955 requesting an examination of above subject property.

Attached are four copies of a report by B. H. Sheahan, Bureau of Mines and H. K. Stager, Geological Survey in which it is recommended that the application for exploration aid be denied.

Roscoe Smith and I concur in the recommendation.

S. Ricker

Attach.

Reviewed by
DMEA OPERATING COMMITTEE
11/16/55
(date)

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION II

APPLICATION REPORT

DMEA 3948 (Copper)
Dan O'Laurie
Pine Tree Claims,
Mineral County, Nevada

by

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

H. K. Stager
Geologist
U. S. Geological Survey

November 4, 1955

Reviewed by
DMEA OPERATING COMMITTEE
11/16/55
(Date)

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ILLUSTRATIONS

Figure 1 . . . . . Location Map

Figure 2 . . . . . Geological Map

INTRODUCTION

Mr. Dan O'Laurie, P. O. Box 402, Moab, Utah, applied for Government assistance in a $331,129 program under the Defense Minerals Exploration Administration, docket DMEA-3948, to explore for copper at the Pine Tree claims, Mineral County, Nevada. The applicant wishes to explore the property to determine if a reserve of 500,000 tons of 3 percent copper-sulfide ore can be found to justify the building of a mill to handle at least 200 tons of ore per day.

A field examination was requested by the Operating Committee, and was made by B. H. Sheahan of the U. S. Bureau of Mines, H. K. Stager and D. C. Ross of the U. S. Geological Survey, accompanied by Mr. Dan O'Laurie, the applicant, Mr. E. S. McIntyre of the Centennial Development Company, consultants for the applicant, Mr. Fred Porteous, superintendent in charge of the development work at the property, and Mr. Irvin C. Scott, Jr., holder of the lease on the property.

Inasmuch as the geology of the surface and underground workings had been mapped by the consultants for the applicant no attempt by the field examiners was made to remap the property.

The applicant's maps were carefully studied and were compared with geologic exposures on the property. As the consultants for the applicant have taken about 40 samples of the best mineralized exposures, the examiners took only 13 check samples.

CONCLUSIONS AND RECOMMENDATIONS

The Pine Tree claims cover a large area of spotty exposures of low grade secondary copper minerals. The results of the examination and past exploration indicate that these traces of copper are not the surface expression of a large copper-sulfide ore deposit.

The applicant proposed to (1) explore the surface showings by bulldozing, drilling, and shallow inclines and drifts, (2) underground drifting and crosscuts and (3) explore the deposit at depth with a 600 foot inclined shaft and drifting on 3 levels. The program would require two years to complete and the Government's share of the estimated total cost of $331,129 would be $165,565.

The proposed program is so far out of proportion to the meager traces of copper exposed on the property and so patently ignores the lack of proper geologic setting and the negative evidence already available from past exploration that the entire proposal is unsound.

It is recommended that Government assistance under the DMEA program be denied.

LOCATION, ACCESSIBILITY, AND LOCAL RESOURCES

The Pine Tree claims are in the Pilot Mountains at an altitude of from 7,500 feet to 8,000 feet in an unsurveyed southern portion of Section 7, T. 6 N., R. 36 E., M.D.B.&M., Mineral County,

Nevada. To reach the property from Mina, Nevada, which is the nearest town, travel north 0.7 miles on paved U. S. Highway 395, turn right on a dirt road leading toward the Cloverdale Ranch and go northeasterly 2.2 miles, turn right at forks of road and go southeasterly 3.6 miles up Dunlap Canyon, turn right and follow a winding steep narrow dirt road up a canyon for 3.6 miles to the south side of the claims. The total distance by road from Mina is 10.1 miles. The road is accessible during dry weather, but is usually closed by snow during winter months at elevations above 5,000 feet. Above 6,000 feet there is a sparce growth of piñon pine.

There is no developed water on the claims. One mile northeast small springs have been improved, and along the road 2.4 miles below the Pine Tree claims there is an undeveloped spring in the canyon which flows approximately 10 gallons of water per minute.

Mina, Nevada is the nearest railhead, post office and source of supplies. The wage scale for miners in this locality is $16.00 per day. Housing facilities are available at Mina. The freight rate to Garfield, Utah would be about $9.00 per ton.

HISTORY AND PRODUCTION

The initial discovery was made some time prior to 1905, or about the time of the construction of the railroad into Tonapah. In 1917, the Bell Copper Company, with M. H. Bettles as agent, explored the property and a 111 ton shipment was made during 1918 which contained 45 ounces silver and 14,920 pounds of copper. The claims were relocated by Mr. L. E. Cornelius and

Charles F. Nobel of Mina in 1951 and were leased to the Argyle Mining Company of Las Vegas, Nevada, but no exploration work was done.

Mr. I. C. Scott, Jr. and wife acquired a lease and option on June 4, 1955 and this lease was assigned to Mr. Dan O'Laurie on July 7, 1955. An examination was made by an engineer[1] of the Bureau

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[1] Holmes, G. H., Mining Engineer, U. S. Bureau of Mines, Preliminary Examination Report, Pine Tree Copper Mine, July 5, 1955.

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of Mines in April 1955. Many previous examinations are believed to have been made by companies engaged in copper mining.

PROPERTY AND OWNERSHIP

There are nine unpatented lode mining claims under lease to the applicant which are owned by Mr. L. E. Cornelius and Mr. Charles F. Noble of Mina, Nevada.

Name of Claim	Date Recorded	Book No.	Page No.
Pine Tree No. 1	July 24, 1951	14	59
" " " 2	" " "	"	60
" " " 3	" " "	"	61
" " " 4	August 14, 1951	"	74
" " " 5	" " "	"	"
Pine Tree Ext. No. 1	July 15, 1955	18	96
" " " " 2	" " "	"	"
" " " " 3	" " "	"	97
" " " " 4	August 1, 1955	-	-

The applicant did not include a copy of his lease agreement on the Pine Tree Extension claims Nos. 1 to 4 inclusive, but he stated that he could obtain a written agreement.

DEVELOPMENT

Development consists of a 500 foot adit, a 340 foot incline shaft and several shallow surface trenches, the location of which are indicated on the attached Geological Map (Fig. 2).

At the present time the applicant has employed Mr. Fred Porteous, a mining engineer, contractor and business man, residing at Mine, to conduct surface trenching operations. A three-man crew is working on the Pine Tree No. 1 claim. Equipment owned by the contractor and being used includes the following: 1 HD-5 Dozer, 1 Air Compressor, 105 c.f.m.; 2 Jackhammers, 1 pick-up truck, miscellaneous small tools, hose, and pipe.

All underground workings were open and dry even though timber had not been used for ground support. The altitude of the present water table at the property is unknown. It is probably about the altitude of the lower tunnel.

GENERAL GEOLOGY

The Pine Tree claims are in an area that has been studied and mapped by Ferguson, Muller, and Cathcart of the U. S. Geological Survey.

/ Ferguson, Henry G. and Muller, Siemon W., 1949, Structural Geology of the Hawthorne and Tonopah Quadrangles, Nevada, U. S. Geological Survey Professional Paper 216.

_/ Ferguson, H. G., Muller, S. W., and Cathcart, S. H., 1954, Geology of the Mina Quadrangle, Nevada, U. S. Geological Survey, Map GQ 45.

- -

The oldest rocks in the claim area are slate and conglomerate of the Upper Triassic Luning formation that have been thrust over conglomerate of the Lower Jurassic Dunlap formation. The copper deposits are in the thrust zone between the two formations.

The rocks of the Luning formation exposed in the claim area are part of a silicious slate and conglomerate unit near the middle of the formation. This unit is about 800 feet thick in the claim area and is 3,000 feet thick in the type locality which is several miles to the west. The underlying limestone and overlying dolomite and limestone units of the Luning formation are missing in the claim area.

The coarse conglomerate of the upper part of the Dunlap formation in the claim area is composed of cobbles derived from the limestones, dolomites, slates, and conglomerates of the Luning formation. The thickness of the Dunlap formation in the claim area is not known although it is probably in excess of 5,000 feet.

Except for a small dike of rhyolite porphyry that crops out along the thrust plane there are no igneous rocks exposed in the area. The absence of intrusive rocks for a radius of several miles around the claim area is not a favorable indication for a large copper deposit.

The major structural feature in the area is the Cinnabar Canyon thrust fault that has thrust the rocks of the Luning formation

over those of the younger Dunlap formation. The thrust plane trends easterly and dips 20° - 35° N. The displacement has not been determined but probably is several miles. The thrust zone is from 50 to 300 feet wide on the Pine Tree claims and consists of brecciated material derived from both the Dunlap formation and the overriding rocks of the Luning formation. It is within this brecciated material that the copper deposits occur.

ORE DEPOSITS

The copper bodies at the Pine Tree claims are small irregular pods and lenses of secondary copper minerals erratically distributed in the breccia of the Cinnabar Canyon thrust fault.

Malachite, azurite, chrysocolla, tenorite, and chalcanthite are the copper minerals and occur as thin veinlets and coatings in fractures and lining small cavities in the fault breccia. Gangue minerals are limonite and goethite at the surface and pyrite about 50 feet below the surface. The copper content of the mineralized material ranges from a trace to about 4 percent and averages about 1 percent. A sample (S-391) containing abundant pyrite was taken in the inclined shaft near the east end of the property. This sample assayed 0.08 percent copper and is probably representative of the grade of the primary copper-bearing material in the deposit.

The pods and lenses of copper ore range in size from small concentrations of copper minerals a few inches across and containing a few pounds of ore to irregular masses about 10 feet thick, 20 feet wide, and 100 feet long containing about

1,000 tons of material with an average grade of about 1 percent copper. All of the ore bodies are confined to an area about 200 feet wide and 2,000 feet long, in the thrust zone.

SAMPLING

Maps included with the docket showed the analyses and location of 34 select samples taken by the applicant's engineers. The following check samples were taken, locations of which are indicated on Fig. 2.

Sample Number	Width, feet	Cu, %	Au, %	Ag, %	Remarks
S-387	3.0	0.08			South side shaft. 5.0 ft. above bottom
S-388	5.0	0.20			" " " 18.0 " " "
S-389	5.0	0.10			" " " 45.0 " " "
S-390	3.0	2.72			" " " 95.0 " " "
S-391	5.0	0.08			" " " 140.0 " " "
S-392	6.0	2.35			" " " (near No. 13)
S-393	Grab	0.67			Pit No. 1 Muck Pile
S-394	6.0	0.25			Pit A
S-395	3.0	3.77			Select Pit A
S-396	7.0	0.78			Pit A
S-397	5.0	0.15			Pit A
S-398	3.5	0.77			Lower Adit
S-399	3.5	1.16			Lower Adit (near Q-1)
Composite 387 to 399, incl.	-	-	Tr	Tr	

ORE RESERVES

There are no measured, indicated, or inferred reserves of copper-sulfide ore on the Pine Tree claims.

By careful mining and sorting of the small copper oxide and carbonate bodies exposed on the Pine Tree No. 1 and No. 2 claims a small tonnage, perhaps as much as 5,000 tons, might be recovered that would average about 2 percent copper. The grade of this ore is too low, however, to stand the expense of transportation to a smelter and the carbonate content of the gangue is probably too high to permit economical treatment by leaching.

PROPOSED EXPLORATION

The applicants have proposed an exploration program in 3 stages. Stage I consists of bulldozing 10 trenches 50 feet long, 10 feet wide and 5 feet deep, followed by 2,250 feet of rotary and diamond drilling, and 700 feet of shallow inclines with drifts and crosscuts. Stage II consists of driving an 1,800 foot adit with 500 feet of crosscuts and 1,000 feet of test holes. Stage III consists of a 600 foot inclined shaft and 700 feet of drifting. This work would be confined to the Pine Tree No. 1, 2, 4, and Pine Tree Extension No. 1 and No. 2 claims to explore for copper-sulfide ore bodies in the Cinnabar Canyon thrust zone. They estimate the cost of the work would be $331,129 and would require two years to complete.

There is no geologic evidence to indicate the existence of the copper-sulfide ore bodies that are the target of the proposed exploration. All previous exploration, both along the strike and down the dip of the structure, has indicated that the copper occurrence at the Pine Tree claims consists of small erratically distributed concentrations of secondary copper minerals that were probably derived from primary copper sulfide minerals sparsely disseminated in the thrust zone. The existing 300 foot inclined shaft, 600 foot adit, and numerous prospect pits are considered adequate tests of the deposit and are believed to have exposed mineralized material which is representative of the average character and grade of the deposit.

FIG. 1. LOCATION MAP NEVADA

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

1605 Evans Avenue
Reno, Nevada

November 7, 1955

Memorandum

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

From: Executive Officer, DMEA Field Team, Region II

Subject: Docket No. DMEA-3948 (Copper)
Dan O'Laurie
Pine Tree Claims
Mineral County, Nevada

Reference is made to your letter of August 31, 1955 requesting an examination of above subject property.

Attached are four copies of a report by B. H. Sheahan, Bureau of Mines and H. K. Stager, Geological Survey in which it is recommended that the application for exploration aid be denied.

Roscoe Smith and I concur in the recommendation.

S. Ricker

Attach.

SRicker:gh
cc: R. M. Smith
File

Reviewed by
DMEA OPERATING COMMITTEE

(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION II

APPLICATION REPORT

DMEA 3948 (Copper)
Dan O'Laurie
Pine Tree Claims,
Mineral County, Nevada

by

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

H. K. Stager
Geologist
U. S. Geological Survey

November 4, 1955

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

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A field examination was requested by the Operating Committee, and was made by B. H. Sheahan of the U. S. Bureau of Mines, H. K. Stager and D. C. Ross of the U. S. Geological Survey, accompanied by Mr. Dan O'Laurie, the applicant, Mr. E. S. McIntyre of the Centennial Development Company, consultants for the applicant, Mr. Fred Porteous, superintendent in charge of the development work at the property, and Mr. Irvin C. Scott, Jr., holder of the lease on the property.

Inasmuch as the geology of the surface and underground workings had been mapped by the consultants for the applicant no attempt by the field examiners was made to remap the property.

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CONCLUSIONS AND RECOMMENDATIONS

The Pine Tree claims cover a large area of spotty exposures of low grade secondary copper minerals. The results of the examination and past exploration indicate that these traces of copper are not the surface expression of a large copper-sulfide ore deposit.

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There is no developed water on the claims. One mile northeast small springs have been improved, and along the road 2.4 miles below the Pine Tree claims there is an undeveloped spring in the canyon which flows approximately 10 gallons of water per minute.

Mina, Nevada is the nearest railhead, post office and source of supplies. The wage scale for miners in this locality is $16.00 per day. Housing facilities are available at Mina. The freight rate to Garfield, Utah would be about $9.00 per ton.

HISTORY AND PRODUCTION

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Holmes, G. H., Mining Engineer, U. S. Bureau of Mines, Preliminary Examination Report, Pine Tree Copper Mine, July 5, 1955.

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" " " " 3	" " "	"	97
" " " " 4	August 1, 1955	-	-

The applicant did not include a copy of his lease agreement on the Pine Tree Extension claims Nos. 1 to 4 inclusive, but he stated that he could obtain a written agreement.

DEVELOPMENT

Development consists of a 500 feet adit, a 340 foot incline shaft and several shallow surface trenches, the location of which are indicated on the attached Geological Map (Fig. 2).

At the present time the applicant has employed Mr. Fred Forteaus, a mining engineer, contractor and business man, residing at Mina, to conduct surface trenching operations. A three-man crew is working on the Pine Tree No. 1 claim. Equipment owned by the contractor and being used includes the following: 1 HD-5 Dozer, 1 Air Compressor, 105 c.f.m.; 2 Jackhammers, 1 pick-up truck, miscellaneous small tools, hose, and pipe.

All underground workings were open and dry even though timber had not been used for ground support. The altitude of the present water table at the property is unknown. It is probably about the altitude of the lower tunnel.

GENERAL GEOLOGY

The Pine Tree claims are in an area that has been studied and mapped by Ferguson, Muller, and Cathcart of the U. S. Geological Survey.

- -

_/ Ferguson, Henry G. and Muller, Siemon W., 1949, Structural Geology of the Hawthorne and Tonopah Quadrangles, Nevada, U. S. Geological Survey Professional Paper 216.

_/ Ferguson, H. G., Muller, S. W., and Cathcart, S. H., 1954, Geology of the Mina Quadrangle, Nevada, U. S. Geological Survey, Map GQ 45.

- -

The oldest rocks in the claim area are slate and conglomerate of the Upper Triassic Luning formation that have been thrust over conglomerate of the Lower Jurassic Dunlap formation. The copper deposits are in the thrust zone between the two formations.

The rocks of the Luning formation exposed in the claim area are part of a silicious slate and conglomerate unit near the middle of the formation. This unit is about 800 feet thick in the claim area and is 3,000 feet thick in the type locality which is several miles to the west. The underlying limestone and overlying dolomite and limestone units of the Luning formation are missing in the claim area.

The coarse conglomerate of the upper part of the Dunlap formation in the claim area is composed of cobbles derived from the limestones, dolomites, slates, and conglomerates of the Luning formation. The thickness of the Dunlap formation in the claim area is not known although it is probably in excess of 5,000 feet.

Except for a small dike of rhyolite porphyry that crops out along the thrust plane there are no igneous rocks exposed in the area. The absence of intrusive rocks for a radius of several miles around the claim area is not a favorable indication for a large copper deposit.

The major structural feature in the area is the Cinnabar Canyon thrust fault that has thrust the rocks of the Luning formation

over those of the younger Dunlap formation. The thrust plane trends easterly and dips 20° - 35° N. The displacement has not been determined but probably is several miles. The thrust zone is from 50 to 300 feet wide on the Pine Tree claims and consists of brecciated material derived from both the Dunlap formation and the overriding rocks of the Luning formation. It is within this brecciated material that the copper deposits occur.

ORE DEPOSITS

The copper bodies at the Pine Tree claims are small irregular pods and lenses of secondary copper minerals erratically distributed in the breccia of the Cinnabar Canyon thrust fault.

Malachite, azurite, chrysocolla, tenorite, and chalcanthite are the copper minerals and occur as thin veinlets and coatings in fractures and lining small cavities in the fault breccia. Gangue minerals are limonite and goethite at the surface and pyrite about 50 feet below the surface. The copper content of the mineralized material ranges from a trace to about 4 percent and averages about 1 percent. A sample (S-391) containing abundant pyrite was taken in the inclined shaft near the east end of the property. This sample assayed 0.08 percent copper and is probably representative of the grade of the primary copper-bearing material in the deposit.

The pods and lenses of copper ore range in size from small concentrations of copper minerals a few inches across and containing a few pounds of ore to irregular masses about 10 feet thick, 20 feet wide, and 100 feet long containing about

1,000 tons of material with an average grade of about 1 percent copper. All of the ore bodies are confined to an area about 200 feet wide and 2,000 feet long, in the thrust zone.

SAMPLING

Maps included with the docket showed the analyses and location of 34 select samples taken by the applicant's engineers. The following check samples were taken, locations of which are indicated on Fig. 2.

Sample Number	Width, feet	Cu, %	Au, %	Ag, %	Remarks
S-387	3.0	0.08			South side shaft. 5.0 ft. above bottom
S-388	5.0	0.20			" " " 18.0 " " "
S-389	5.0	0.10			" " " 45.0 " " "
S-390	3.0	2.72			" " " 95.0 " " "
S-391	5.0	0.08			" " " 140.0 " " "
S-392	6.0	2.35			(near No. 13)
S-393	Grab	0.67			Pit No. 1 Rock Pile
S-394	6.0	0.25			Pit A
S-395	3.0	3.77			Select Pit A
S-396	7.0	0.78			Pit A
S-397	5.0	0.15			Pit A
S-398	3.5	0.77			Lower Adit
S-399	3.5	1.16			Lower Adit (near 1-1)
Composite 387 to 399, incl.	-	-	Tr	Tr	

ORE RESERVES

There are no measured, indicated, or inferred reserves of copper-sulfide ore on the Pine Tree claims.

By careful mining and sorting of the small copper oxide and carbonate bodies exposed on the Pine Tree No. 1 and No. 2 claims a small tonnage, perhaps as much as 5,000 tons, might be recovered that would average about 2 percent copper. The grade of this ore is too low, however, to stand the expense of transportation to a smelter and the carbonate content of the gangue is probabl, too high to permit economical treatment by leaching.

PROPOSED EXPLORATION

The applicants have proposed an exploration program in 3 stages. Stage I consists of bulldozing 10 trenches 50 feet long, 10 feet wide and 5 feet deep, followed by 2,250 feet of rotary and diamond drilling, and 50 feet of shallow inclines with drifts and crosscuts. Stage II consists of driving an 1,800 foot adit with 500 feet of crosscuts and 1,000 feet of test holes. Stage III consists of a 600 foot inclined shaft and 700 feet of drifting. This work would be confined to the Pine Tree No. 1, 2, 4, and Pine Tree Extension No. 1 and No. 2 claims to explore for copper-sulfide ore bodies in the Cinnabar Canyon thrust zone. They estimate the cost of the work would be $331,129 and would require two years to complete.

There is no geologic evidence to indicate the existence of the copper-sulfide ore bodies that are the target of the proposed exploration. All previous exploration, both along the strike and down the dip of the structure, has indicated that the copper occurrence at the Pine Tree claims consists of small erratically distributed concentrations of secondary copper minerals that were probably derived from primary copper sulfide minerals sparsely disseminated in the thrust zone. The existing 300 foot inclined shaft, 600 foot adit, and numerous prospect pits are considered adequate tests of the deposit and are believed to have exposed mineralized material which is representative of the average character and grade of the deposit.

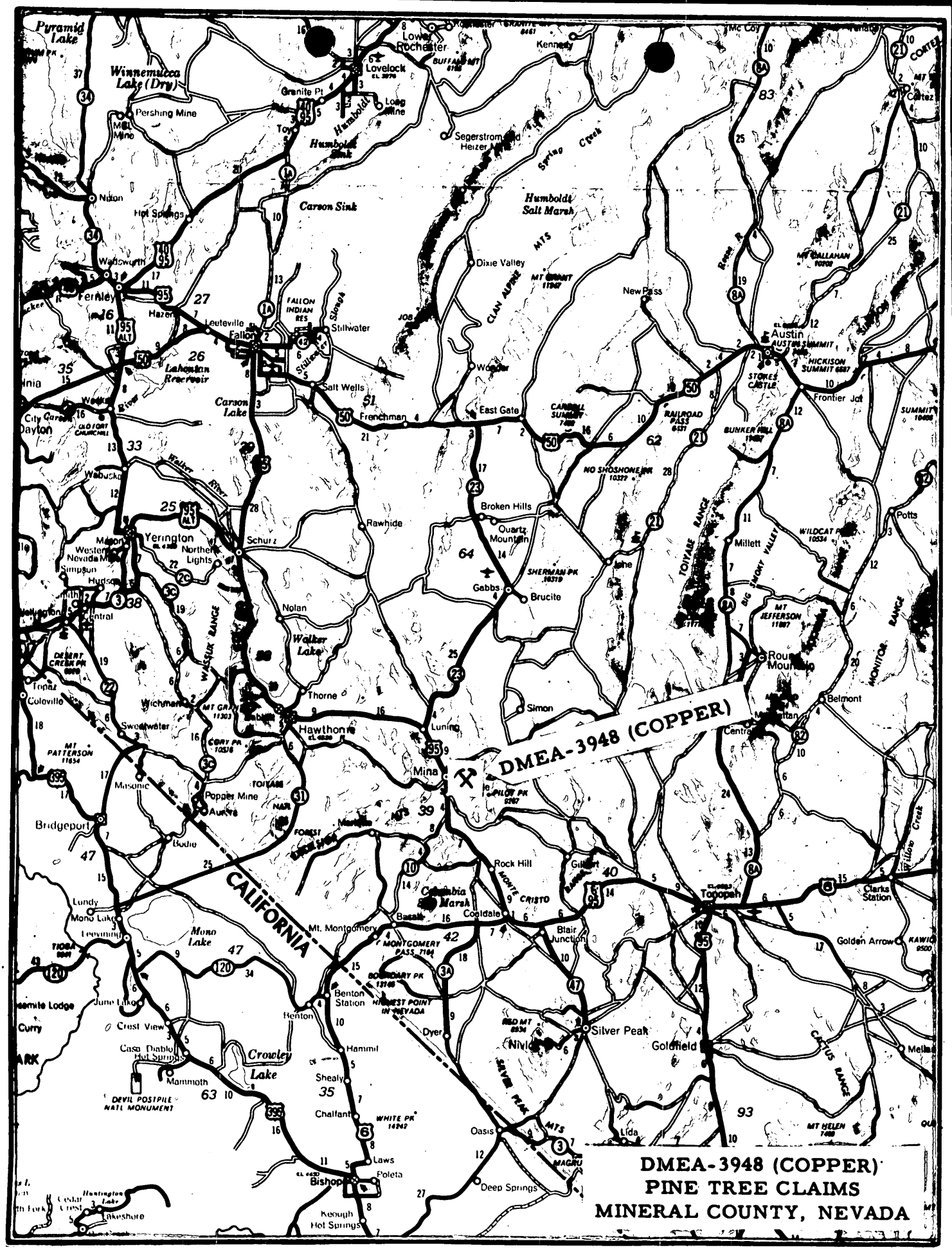

FIG. 1. LOCATION MAP NEVADA

File Copy

J. ACR. Approved Selfridge

UNITED STATES
DEPARTMENT OF THE INTERIOR 500
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

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

AUG 31 1955

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

Re: Docket No. DMEA-3948 (Copper)
Dan O'Laurie
Pine Tree Claims
Mineral County, Nevada

Dear Mr. Ricker:

A review of the cited application, of which you have retained a copy, indicates that an examination of the property is necessary. Will you please have such an examination made and submit your report and recommendations to us.

In the application, the Applicant states that he has a lease on eight unpatented mining claims. The lease as submitted by the Applicant includes 5 claims and does not include Pine Tree Extension Claims Nos. 1, 2, and 3. The Applicant should be requested to obtain a lease on these claims as his map shows that he proposes to do work on two of these claims.

In the event that you consider this application favorably, the Applicant should be requested to obtain a Consent to Lien from the owner of the property.

The Applicant's proposed costs of the work to be done should be carefully reviewed by the Field Team. They appear to be high.

We have attempted to point out only a few items to you, as we realize that the entire proposal will need to be carefully studied by the Field Team.

Enclosed are copies of memorandums from the Commodity members, N. E. Nelson, USGS, dated August 19, and James W. Pennington, USBM, dated August 22, giving their recommendations and comments regarding the application.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (WB)

Enclosures
APPROVED:

P. F. Yopes
Member, Bureau of Mines (WB)

Thor H. Kiilsgaard
Member, Geological Survey (WB)

Mr. James W. Pennington, USBM
Mr. Kiilsgaard, USGS
Chron.

UWAlt/er 8/29/55
Copy to: Docket
Admr R File
Op. Committee
Base Metals

R.C.S.

File Copy
Surname

J. W. Pennington
Kiilsgaard
Selfridge
Yoffe

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

AUG 31 1955

Mr. Dan O'Laurie
Post Office Box 402
Moab, Utah

Re: Docket No. DMEA-3948 (Copper)
Dan O'Laurie
Pine Tree Claims
Mineral County, Nevada

Dear Mr. O'Laurie:

Your application for Government assistance to explore your property has been reviewed by the Base Metals Division of the Defense Minerals Exploration Administration, and has been referred for a field examination to:

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

The Regional Office will contact you at an early date as to when an examination is to be made. Any assistance that you may give the members of the Field Team during the examination will be appreciated.

Sincerely yours,

Administrator

JWAlt/er 8/29/55

Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. J. W. Pennington, USBM
Mr. Kiilsgaard, USGS
Chron.
Region II (2)

R.C.G.

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

August 22, 1955

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: J. W. Pennington, Branch of Base Metals

Subject: Review of application, Docket No. DMEA 3948 (copper) Pine Tree Property, Mina, Mineral County, Nevada

The proposed exploration of this property will consist of three stages with each stage dependent upon the results of the previous stage. In the first stage, surface exploration of the central part of the property will be made. If the results are satisfactory the area will be explored at depth by drilling and by underground work.

The mineralized zone varies from 50 to 300 feet in width and extends the length of the property. Copper content ranges from a trace to 4.5 percent. Partial exploration has been done by surface pits and trenches, by a 500 foot tunnel, and by an incline shaft 200 feet deep. Only oxides and carbonates of copper have been found. However, the principal objective at this stage is the development of a sulphide ore body.

Maps of the area are missing from the application but will be supplied later.

This area appears favorable for copper exploration and a Field Team examination is recommended. It is suggested, though, that the Field Team study and evaluate the proposed exploration to determine if it is the best approach.

James W. Pennington

James W. Pennington

Copy to: Division of Minerals
Branch of Base Metals
H. M. Meyer
F i l e s
Thor Kiilsgaard, U.S.G.S.

RECEIVED
AUG 23 1955

August 22, 1955

Memorandum

To: W. P. Griswold, Defense Minerals Exploration Administration

From: J. W. Pennington, Branch of Base Metals

Subject: Review of application, Docket No. DMEA 3948 (copper) Pine Tree Property, Mine, Mineral County, Nevada

The proposed exploration of this property will consist of three stages with each stage dependent upon the results of the previous stage. In the first stage, surface exploration of the central part of the property will be made. If the results are satisfactory the area will be explored at depth by drilling and by underground work.

The mineralized zone varies from 50 to 300 feet in width and extends the length of the property. Copper content ranges from a trace to 4.5 percent. Partial exploration has been done by surface pits and trenches, by a 500 feet tunnel, and by an incline shaft 200 feet deep. Only oxides and carbonates of copper have been found. However, the principal objective at this stage is the development of a sulphide ore body.

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This area appears favorable for copper exploration and a Field Team examination is recommended. It is suggested, though, that the Field Team study and evaluate the proposed exploration to determine if it is the best approach.

Signed

James W. Pennington

JWPennington/vr

Copy to: Division of Minerals
Branch of Base Metals
H. M. Meyer
F i l e s
Thor Kiilsgaard, U.S.G.S.

IN REPLY REFER TO:

Alb
Betty

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

August 19, 1955

Re: DMEA 3948
Dan O'Laurie
Pine Tree Group
Mineral Co., Nevada
$331,129 - Copper

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

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

Subject: Review of application

The location of the 8 unpatented claims which constitute the Pine Tree Group, as given in the application is not definite enough to permit plotting on Plate 7 of Professional Paper 216--Structural Geology of the Hawthorne and Tonopah Quadrangles. However, an abrupt curve in the Cinnabar Canyon thrust fault corresponds to that shown on the map of the Pine Tree property which accompanies the application. Section B-B' of Plate 7 probably crosses Pine Tree No. 2 claim. Neither the Paper nor the descriptive matter on GQ 45, Geology of the Mina Quadrangle, makes mention of copper mineralization in the Pine Tree area.

The sampling on Pine Tree No. 1 and No. 2 claims where surface work is proposed appears to warrant the work outlined under Phase #1 and perhaps #2, and Phase #3 of the First Stage of the program. Perhaps the whole program can be justified.

What might be called overhead in the estimates should be checked.

A referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

RECEIVED
AUG 2 1955

IN REPLY REFER TO:

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

August 19, 1955

Re: DMEA 3948
Dan O'Laurie
Pine Tree Group
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What might be called overhead in the estimates should be checked.

A referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-8/19/55
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Meyer, 3623

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AUG 2 1955

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ale

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

1605 Evans Avenue
Reno, Nevada

August 16, 1955

Memorandum

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

From: Executive Officer, DMEA Field Team, Region II

Subject: Loan Application (Copper) · 3948
Dan O'Laurie
Pine Tree Claims
Mineral County, Nevada

Just received the attached additional maps from the above subject applicant to supplement the application for aid sent under cover of my letter of August 11, 1955.

S. Ricker

Attach.

RECEIVED
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August 16, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region II

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

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

DMEA-3948 Dan O'Laurie

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

August 16, 1955
Subject: DMEA-3948
Re: Exploration Assistance

Mr. Dan O'Laurie
Box 402
Moab, Utah

Dear Mr. O'Laurie:

The receipt of your application dated August 8, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3948 and referred to the Base Metals Division.

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

60932

RMEA

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

1605 Evans Avenue
Reno, Nevada

August 11, 1955

Memorandum

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

From: Executive Officer, DMEA Field Team, Region II

Subject: Loan Application (Copper)
Dan O'Laurie
Pine Tree Claims
Mineral County, Nevada

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

S. Ricker

Attachs.

RECEIVED
AUG 1 [illegible]

Dan O'Laurie
P. O. Box 402
MOAB, UTAH

August 8, 1955

U. S. Bureau of Mines
DMEA Division
Reno, Nevada

Gentlemen:

Enclosed are five copies of DMEA "Form MF 103" with supporting data to cover application for DMEA loan. I lack two maps and the Eureka office of Centennial Development Company will forward those promptly for inclusion with the papers.

Preliminary exploration work will be started about August 15th. Mr. Fred Porteous of Mina, Nevada will be in charge of the work, under direction of Centennial Development Company.

I am starting the preliminary work soon as possible in order to take advantage of the favorable weather.

At the time your representative is to make an inspection of the claims, I will appreciate it if you can notify me by letter or wire sufficiently in advance so that my representative and the representative from Centennial can be there at the same time.

Thanking you for an early consideration on this application, I am

Very truly yours,

Dan O'Laurie

Dan O'Laurie

DO'L:bc

RECEIVED
AUG 15 1955

APPLICATION FOR AID

IN AN EXPLORATION PROJECT

D.M.E.A. ORDER #1

PINE TREE PROPERTY, MINA, NEVADA

Dan O'Laurie
Box #402
Moab, Utah

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

Not to be filled in by applicant

Docket No. 3948
Metal or Mineral Copper
Date Received ~~8-15-55~~ 8/15/55
Estimated Cost $331,129
Participation (Government %)

INSTRUCTIONS

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

DAN O'LAURIE
P.O. Box 402
MOAB, UTAH

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract

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

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

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

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

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

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

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

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

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

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

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RECEIVED
AUG 15 1955

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

.....

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated AUGUST 8, 1955

SAM O'LAURIE
(Applicant)

By Sam O'Laurie

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

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

CERTIFICATION

The undersigned certifies that the information set forth in this appendix for Form MF 103, and the accompanying maps is correct and complete to the best of his knowledge and belief.

Date: August 8, 1955.

Dan O'Laurie

Dan O'Laurie
(Applicant)

APPENDIX

Appendix attached to M.F. - 103, Application for Aid in an Exploration Project, Pursuant to D.M.E.A. Order 1, Under the Defense Production Act of 1950 as Ammended.

ANSWERS TO QUESTIONS

1. Name of Applicant

Dan O'Laurie
Box 402
Moab, Utah

2. General

Complied with by this Application.

3. Applicants property rights:

Lease on 8 unpatented mining claims located in the Pilot Range near Mina, Mineral County, Nevada, in approximately sec. 7, T6N - R36E,(unsurveyed) as follows:

CLAIMS	DATE OF LOCATION	DATE OF RECORDING	BOOK	PAGE
Pine Tree #1	5-1-51	7-24-51	14	59,60
Pine Tree #2	5-1-51	7-24-51	14	60
Pine Tree #3	5-1-51	7-24-51	14	61
Pine Tree #4	6-3-51	8-14-51	14	74
Pine Tree #5	6-3-51	8-14-51	14	74
Pine Tree Extension #1	7-14-55	7-15-55	18	96
Pine Tree Extension #2	7-14-55	7-15-55	18	96
Pine Tree Extension #3	7-14-55	7-15-55	18	97

Above claims located in the name of Charles Nobel and Lester Cornelius, Mina, Nevada.

A copy of the lease is attached to this application.

4. Physical Description

The claims cover a mineralized zone which has been partially explored by surface pits and trenches, by a tunnel 500 feet long and by an incline shaft 200 feet deep. There is no production on record. The attached geological report and maps show the distribution of the mineralization on the property, its location and accessibility. No power, water,

equipment or supplies are available on the property at present.

5. The Exploration Project

This exploration project is laid out to explore for oxidized and sulphide copper minerals.

The enclosed maps show the proposed work which is scheduled in stages. It is estimated that the project will start within 30 days after approval of the loan and will be completed two years from that date. The work will be carried out by Centennial Development Company, Eureka, Utah, or a similar independent contractor.

6. Estimate

The estimate of costs for the preliminary stage are as follows:

(a) Surface Trenching

(b) Drilling

(c) Shallow prospect inclines from the surface with some short drifts and cross cuts.

It may be advantageous to do less bulldozer work on the surface and more drilling, or possibly the drilling will not appear feasable after the surface work and it will necessitate increasing the footages for shallow shafts from the surface. The latter phases of this stage will depend upon the results of the first bulldozer rock trenches. Much of the overhead outlay for one phase will also be part of the overhead for the later stages so the estimates must be computed together.

Estimate: Four months preliminary surface work, shallow drilling and shallow shaft and drift work.

FIRST STAGE

General Costs - 4 month period.

Move in and out	500.00
Shelter sheds and explosive storage	1,500.00

Engineering 4 months @ $750.00 inc. tax & expenses		3,000.00	
Assaying, drafting supplies, etc.		500.00	
Jeep Pick-up rental @ $150.00 per month		600.00	
Gas, oil, grease, etc.		300.00	
Foreman @ $600.00 per month, inc. taxes & expenses		3,000.00	$9,400.00
Phase #1 - Bulldozer Work			
10 rock trenches - 50' long 5' deep and 10' wide.			
HD5G Loader: 50 days @ $8.50 per hr., inc. expenses and operator		$3,400.00	
125 cu. ft. compressor: 50 days @ $180.00 per month		360.00	
2 drills, hoses, etc. @ $37.50 each		150.00	
Powder and caps		1,500.00	
Drill Steel		500.00	
Labor:			
2 miners - 2 mo. intermittant	1,000.00		
Over time, fringe & taxes @15%	150.00	1,150.00	
Gas, oil, repairs, etc., for compressor		200.00	7,260.00
Phase #2 - Drilling			
Rotary and diamond drilling to mineralization - core through mineralization only.			
Road & drill site work		1,000.00	
10 holes - 150' to 300' depth - average depth 225'			
2250' hole @ $5.00 per foot		11,250.00	12,250.00
Phase #3 - Shallow Inclines with Drifts & Cross-cuts 2 mo. period			
700 Lineal feet of work.			
Compressor Rental - 315 cu.ft.- 2 mo. @ $350.00 per mo.		700.00	

Air hoist - 2 mo's. @ $50.00 per mo.		100.00	
3 drills, hoses, etc. @ $50.00 each		300.00	
Explosives @ $4.00 per foot		2,800.00	
Drill steel @ $1.00 per foot		700.00	
Rail, timber & misc. supplies @ $5.00 per foot		3,500.00	
Ventilation line @ $2.00 per foot		1,400.00	
Labor:			
6 men @ $500.00 per mo. - 2 mo's.	6,000.00		
Overtime, fringes & taxes	900.00	6,900.00	
Contingencies @ 3.6%		590.00	16,990.00
Sub Total			45,900.00
Contractor's Fee @ 1,000.00 per mo.			4,000.00
Total First Stage			$49,900.00

SECOND STAGE

Low Level Development After Stage #1

Phase #1 - Tunnel Portaled Below Showing on Pine Tree #4 Giving 400' depth below outcrop.

Surface Plant:

Road work and portal excavation	$2,000.00	
Wood bldgs: 1 shop; 1 change room with plumbing; 1 roof over compressor and generator	5,000.00	
Moving in and out	1,500.00	
Dump set-up, timber and trestle, track, etc.	3,500.00	$12,000.00

Phase #2 - Direct Drifting Costs - 1800 feet total:

Price per foot of drift to include the following:

16" Vent line,

4" Air and 1" water line,

30 gauge - 30 lb. rail,

Rental for 600 cu.ft. compressor,

Rental for 60 KVA generator,

Rentals for fans,

Rental for temporary underground electrical system,

Rental for small tractor,

1800 feet of drift @ $45.00 per foot	81,000.00	
Timber estimated - 450 ft. @ @12.00 per foot	5,400.00	86,400.00

Phase #3 - Exploration in Ore Zone

Cross-cuts - Slusher drifts in hanging wall and footwall for a total of 500 feet.

500 feet @ $40.00 per foot	20,000.00	
Timber estimated @ 125 feet @ 12,00 per foot	1,500.00	
Test hole drilling:		
1000 feet @ $3.00 per foot	3,000.00	24,500.00
Sub Total		122,900.00
Contingencies - Stage #2 @ 3.6%		4,424.00
Total Second Stage		127,324.00

THIRD STAGE

Sinking 6' x 8' Incline from Tunnel - Total 600' Including Stations

600 feet @ $100.00 per foot	$60,000.00
3 Stations at 200 ft. intervals @ $7,500.00 per station	22,500.00

700 feet of drifting @ $50.00 per foot	35,000.00	
Timbering estimated 175 feet @ $12.00 per foot	2,100.00	119,600.00
Total Third Stage		$123,905.00
Total - First Second, Third Stage		$301,129.00
Engineering, Assaying, Drafting, etc. - 2 years		30,000.00
Total Exploration Costs		$331,129.00

SUMMARY EXPLORATION COSTS

Stage #1		
Surface Exploration	$16,660.00	
Drilling	12,250.00	
Shallow Inclines & Drifts	20,990.00	49,900.00
Stage #2		
Surface Plant & Workings	12,432.00	
Drifting	89,510.00	
Cross-cuts	25,382.00	127,324.00
Stage #3		
Incline Shaft, Stations, Excavation, Drifting		123,905.00
Engineering, Assaying, Drafting, etc. - 2 years		30,000.00
Total Exploration Project		$331,129.00

CENTENNIAL DEVELOPMENT COMPANY

GEOLOGICAL REPORT, PINE TREE PROPERTY
PILOT RANGE, MINA, MINERAL COUNTY, NEVADA

SUMMARY

The Pine Tree Property consists of 8 unpatented mining claims lying along the surface trace of a fault known as the "Cinnabar Canyon Thrust" which cuts a complexly folded and faulted block of Mesozoic sediments forming the Pilot Range. This thrust has moved the older Triassic Luning slates and conglomerates on top of the younger Jurassic Dunlap formation. The fault zone is roughly 50 to 300 feet wide and carries varying amounts of oxidized copper minerals throughout the length of the property. The copper content ranges from a trace to 4.5%. The gold and silver content is negligable, and no lead or zinc was apparent in hand samples.

Our sampling showed a concentration near the center of the property which may be related to a warp in the thrust fault plane. Some of this mineralization is of shipping grade, but the amount and extent of this grade of material cannot be determined without further work.

We recommend a program of surface exploration in the central part of the property. This work can be carried out by a tractor and portable compressor, and some ore can be saved during this program. These workings should be carefully mapped, and if the results are satisfactory, the area should be explored at depth by drilling and by underground work.

LOCATION

The Pine Tree deposit lies in the Pilot Mountains in an unsurveyed township approximately T6N - R36E, sec. 7. The Property can be reached from Mina, 8 miles to the west

by a gravel and dirt road which is passable during all weather. The property lies on a ridge between an unnamed canyon and Dunlap Canyon at from 7500 to 8000 feet elevation. There are several springs sufficient to water stock below the property in Dunlap and the unnamed canyon. The property is covered with a sparse growth of cedars, but none are large enough for mining purposes. There are no houses or facilities of any value on the property.

Some mercury deposits of minor importance have been worked in Dunlap and Cinnabar Canyons to the east for many years, but they are of minor importance. Regionally, this part of Nevada is metalliferous since it includes the silver ores of Tonopah and Candelaria, the gold ores of the Goldfields, the copper of Yerrington, and many tungsten deposits. The copper, lead and silver ores of New York Canyon, lie in Gabbs Valley Range, seven miles to the north. None of these mining districts, however, are close enough to be part of the Pine Tree area.

GEOLOGY

The Region has been studied intensively by the U.S. Geological Survey for the past 25 years. G.Q.45, "The Mina Quadrangle" Mineral County, Nevada, by Fergusean, Muller and Cathcart, and Professional Paper 216, "The Structural Geology of the Hawthorne-Tonopah Quadrangles" by the first two authors, cover the area and give an excellent presentation of the regional setting.

Lower Jurassic

Dunlap Formation - Sandstone, slate and conglomerates.

Triassic

Luning Formation (Lower) - Slate, conglomerates, silicious shale and interbedded limestone.

These formations are part of the Luning embayment area of deposition which was

deformed by intense pressure during and following late Jurassic time, folded and rethrust later, and cut up and uplifted into blocks by normal faulting which resulted in the present outline of the ranges. The shales and conglomerates appear to have been incompetent beds which failed and failed again.

One of the later thrusts known to the east as the Cinnabar Canyon Thrust, extends through the Pine Tree property, and on it, the slates and silicious shales of the earlier Luning formation have been thrust over the red shales and conglomerates of the later Dunlap formation. The trace of the fault is a zone from 50 to 300 feet wide of brecciated and blocky silicious shale and slate with possibly some altered intrusive of aplitic or granitic composition. The exact boundries of the zone are indistinct. The lower contact, or footwall, is masked by talus, and the upper contact, or hanging wall, is gradational. Some thin, highly altered, limestone beds are found along the footwall of the fault. Although poorly exposed, they appear to be part of the Dunlap formation. One limestone bed in the Luning formation outcrops on Pine Tree #3 claim, some distance east from the strong mineralization.

No attempt was made to differentiate between members of the Luning formation in the hanging wall of the Dunlap formation in the footwall. Both formations are poorly exposed, and broken by a multitude of samll fissures and fractures of short length. The thrust which is a major displacement, is known as the Cinnabar Canyon Thrust, and extends from the mercury district in Cinnabar Canyon several miles to the east, westward to the west end of the range. The displacement must be over several miles. The fault plane is a shallow dipping, undulating surface and apparently later than the Spearmint and Mac Thrusts of the range which have been overturned. The dip appears to be northerly at about 35°, and the outcrop of the zone swings from a northwest trend to west and southwest around the south

slope of the high ridge separating Dunlap from the unnamed canyon. Some of this change in strike is related to topography, but the sharp change on Pine Tree #1 claim is undoubtedly related in part to a warp, or trough, in the fault plane, the rake or plunge being northerly.

MINERALIZATION

This westward extention of the Cinnabar Canyon Thrust carries visible copper oxides and copper carbonates in patches, smears, and films on the outcrops, of the brecciated zone, in the incline shaft, in the tunnel and in small surface excavations shown on the accompanying map. No copper sulphide minerals were found on the property. The oxidized copper minerals are Malachite, the carbonate of copper; Tenorite, a black copper oxide; and Azurite, a blue carbonate mineral. Tenorite is black oxide and somewhat rare. In hand specimines it is difficult to distinguish from the manganese and iron oxides which are common surface stains in desert country.

The samples are shown on the accompanying map, and represent cuts of the length indicated.

Our work shows the concentration of best values to be near the saddle at the end of the road, on Pine Tree #1 claim. It is probable that this concentration of mineralization is localized in this area by a northerly trending warp, or a roll in the fault plane, or by a series of fissures in either the Dunlap formation lying underneath the fault zone, or the Luning formation above it. The outcrops of the Luning series above the fault do not give any indication of such a zone. The Dunlap, lying under the fault is least exposed and such a fissure system could be hidden under the Talus and dirt of the slopes below the outcrop fault. There is no topographic expression of such a fissure zone, however, so a warping of the thrust fault is the most probable reason for the concentration of minerali-

zation on Pine Tree #1 claim.

ECONOMIC CONSIDERATIONS

The Pine Tree deposits show sufficient copper mineralization at the surface to warrant further exploration. It is of prime importance to establish an objective for this exploration. A program to develop a large reserve of oxidized copper ore would be a major project since oxidized ore can be treated only in large expensive plants, and a reserve equal to at least one ton for every dollar for plant expenditure would be an essential. Our knowledge of the property is too limited at this time to contemplate such an exploration program. Sulphide ores can be concentrated in smaller plants, less expensive to build per ton of capacity than large leaching plants similar to that recently constructed at Yerrington, so the prime objective at this stage would be the development of sufficient tonnage of sulphide ore for a flotation plant of possibly 200 tons daily capacity, situated in Soda Spring Valley. If water could be developed, a plant near Mina would be advantageous. This exploration could result in the discovery of minable tonnages of oxodized ore as well, but the objective should still be a reserve for a mill.

The tonnage necessary to warrant a mill would vary with copper content. Perhaps 500,000 tons of 3% copper ore might be a minimum. Higher values would mean less tonnage necessary, and better mining conditions and widths would help as well. There is no doubt that some sort of salvage recovery could be made on the oxidized ores in the same plant, but the recovery would not be over 70%, so real profits must come from mining and milling sulphide ores unless the oxidized ore is of exceptional grade and can be shipped directly to the Garfield or the McGill smelter.

DEVELOPMENT PROGRAM

Since the mineralization is strongest and of the best grade on the Pine Tree #1

claim, northwest of the saddle over a strike length of 400 feet, one of the first steps in the development of a reserve of milling grade ore would be to strip and fully expose this outcrop from the footwall Dunlap formation to the Hanging wall Luning formation, in a series of trenches in bedrock. Any oxidized ore over 3% grade of any size encountered in these trenches should be removed and stockpiled forsampling to determine the feasability of shipping direct to the smelter. The trenches and open cuts should be mapped in detail. The decision to test the mineralization at depth can be based on the results on this preliminary surface stage. If sufficient information is obtained to show a trend to the mineralization, it should be tested down dip by drilling and by sinking inclines on the outcrop. The isolated showing on Pine Tree #4 claim northwest of the "switch-back" should also be explored on the surface at the same time.

The water level may be at considerable depth, or it may rise under the ridge following the topography above the spring. The formations do not appear to be porous, and the water table may not be much below the lower level of the tunnel.

The present lower tunnel and the incline could be used to test the plunge of this surface showing, but they are both small and crooked, and would be difficult to work through. New prospect inclines in the vicinity of the surface showings on Pine Tree #1 claim would be the most practical approach and would be flexible enough to serve as mine openings if direct shipping grade ore is encountered in the preliminary exploration.

These prospect inclines would serve to explore down from the surface for a short distance, but cannot serve as exploration at depth since the mineralized zone may roll and dip and the prospect incline would not make a good operating shaft for low level development. If shallow prospect inclines from the surface, or drill holes, demonstrate that the surface mineralization on the Pine Tree #1 claim is persistant to a depth of 100

feet down from the outcrop, the next step would be to develop the zone at about 500 foot depth by driving a tunnel from the unnamed canyon along the fault zone to the projection of the Pine Tree #1 mineralization below the outcrop. Promising areas adjacent to this tunnel and raise could be prospected by cross cuts and long hole drilling. To explore the lower zone for deposits of copper minerals, which is the most favorable for sulphide ores, will require further exploration at depth. It is proposed that this be accomplished by driving an incline shaft below the proposed tunnel level and drifting in the mineralized areas at regular intervals.

We recommend the acquisition and the exploration of the Pine Tree Property by the above project, each stage in the project to be dependent upon the results of the previous stage.

Respecfully submitted,

CENTENNIAL DEVELOPMENT CO.

James Quigley

James Quigley

E. S. McIntyre

E. S. McIntyre

LEASE

THIS LEASE made and entered into at Mina, Nevada this 4th day of June, 1955 by and between L. E. Cornelius and Charles F. Noble, hereinafter designated as Lessors, and Irvin C. Scott, Jr., hereinafter designated as Lessee.

Witnesseth as follows:

That for and in consideration of the sum of Ten Dollars ($10.00) lawful money of the United States of America paid by the Lessee to the Lessors, receipt of which is hereby acknowledged by the L essors, the Lessors hereby LEASE the Pine Tree Copper No. 1, 2, 3, 4 and 5, Lode Mining Claims, situated in Mineral County, State of Nevada, and Recorded in Book 14 of Mining Locations, Pages 59-60-61-74, Records of Mineral County, State of Nevada, to Lessee for a period of Thirty (30) Years from date with Option to Renew for an additional Thirty (30) Years, on the following terms and conditions:

First: The Lessee shall pay to the Lessors a Ten Percent (10%) Gross Royalty on all ore, concenterates, precipitates, metal or by-products shipped and sold from said property. The Lessee shall supply the Lessors with duplicate copies of all smelter settlement sheets or sales records of all ore, concentrates, precipitates, metal or by-products sold, and the Lessee shall pay all royalties on the 25th day of each month for all such sales made during the previous month.

Second: The Lessee shall pay to the Lessors Five Thousand Dollars ($5,000.00) Advanced Royalty on or before August 1st, 1955.

Third: Beginning September 1st, 1955 and on the First Day of each and every month thereafter during the life of this LEASE, Lessee shall pay to the Lessors a minimum of Five Hundred Dollars ($500.00) a month royalty,

Fourth: The Five Thousand Dollars ($5,000.00) Advanced Royalty to be paid by Lessee to Lessors on August 1st, 1955 shall be credited to Lessee only out of royalties that exceed Five Hundred Dollars ($500.00) per month.

Fifth: If this LEASE is terminated, any and all royalties paid, including Advanced and Minimum Royalties, shall be forfeited and shall be considered as liquidated damages.

Sixth: Lessee shall keep said properties free and clear of any and all liens, encumbrances or debts of any kind whatsoever that may arise out of any labor performed on said property or material, supplies, equipment or machinery purchased for any mining or milling operation on said property. Lessee shall post Notices of Non-Liability on said property as provided by the Laws of the State of Nevada protecting said property and Lessors against any liens, encumbrances or debts incurred by Lessee arising out of the operation of said property by Lessee.

Seventh: Lessee shall keep Lessors harmless from any damages arising out of any accident to himself, assignees, employees, associates or invitees on said property, and Lessee shall carry sufficient Compensation Insurance to protect all his employees at all times, and in the event Lessee contracts any work on said property, Lessee shall either carry sufficient Compensation Insurance to cover any such contractor and his employees or shall see that any such contractor himself carries sufficient Compensation Insurance to cover himself and his employees.

Eighth: Lessee shall conduct all his mining and milling operations in accord with the Mining Laws of the State of Nevada and of the United States.

Ninth: Beginning with the Assessment Work Year ending June 30th, 1956, Lessee shall perform by May 1st of each and every year the Assessment Work required by Law necessary to maintain in good standing all Five (5) Mining Claims above listed.

STATE OF NEVADA,

County of Mineral } ss.

On this 17th day of June A. D., one thousand nine hundred and Fifty five personally appeared before me, L.E.Cornelius a Notary Public in and for the said County of Mineral,

L.E.Cornelius,Charles F.NobleIrvin C.Scott Jr.

known to me to be the person s described in and who executed the foregoing instrument, who acknowledged to me that they executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the County of Mineral, the day and year in this certificate first above written.

Commission expires July 7th.,1955.

L E Cornelius

Notary Public in and for the County of Mineral, State of Nevada.

Cadlick's Form No. 3075—(Acknowledgment General)

STATE OF NEVADA,

County of Mineral } ss.

On this 7th day of July A. D. one thousand nine hundred and Fifty Five personally appeared before me Kay Fortune, a Notary Public in and for said County of Mineral, L.E. Cornelius

known (or proved) to me to be the person..... described in and who executed the annexed instrument, who acknowledged to me that .....he..... executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of Mineral, the day and year in this Certificate first above written.

Kay Fortune

Notary Public in and for the County of Mineral, State of Nevada.

My commission expires June 21st, 1958

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Tenth: Lessee shall pay any and all taxes levied on said properties beginning with the year 1955, and Lessee shall also pay any and all taxes levied on any equipment, machinery or mill placed on said property. Lessee shall also pay any and all taxes that may be levied by either State or Federal Agencies against any ore, concentrates, precipitates, metal or by-products sold from said property, including any and all such taxes commonly referred to as 'bullion taxes'.

Eleventh: Lessors shall have the right to visit and inspect said property or any mining or milling operation thereon at any time, and Lessors shall have the right to inspect Lessee's books and records pertaining to the operation of said property at any reasonable time, and Lessors shall, at their own expense, have the right to audit Lessee's books.

Twelfth: Failure on the part of Lessee to pay the Five Thousand Dollars ($5,000.00) Advanced Royalty on August 1st, 1955 or failure on the part of Lessee to pay the Five Hundred Dollars ($500.00) a month Minimum Royalty beginning September 1st, 1955 and on the First Day of each and every month thereafter during the life of this LEASE, or failure on the part of Lessee to perform any of the other terms and conditions of this LEASE shall be grounds for automatic termination of the LEASE and the forfeiture of all rights of Lessee hereunder, should Lessors so elect. Lessors in that event shall give written notice of said default and if said default is not corrected within Twenty (20) Days from date of mailing of said notice, this LEASE shall then be terminated and rendered null and void. Any such notice of default shall be mailed to Lessee at the following address: P. O. Box 724, Moab, Utah, unless Lessee advises Lessors, in writing, of a change of address.

Thirteenth: The Lessee shall have the right to remove any equipment, machinery or mill off of said property that Lessee may place on said property, providing that Lessee shall remove any such equipment, machinery or mill off of said property within Sixty (60) Days of the termination of this LEASE. Lessee shall not have the right to remove any underground timbers.

Fourteenth: Lessee shall have the right to assign this LEASE, However, in such an event, Lessee shall immediately advise Lessors, in writing, of any such assignment and shall give Lessors the name and address of said assignee.

Fifteenth: The terms and conditions of this LEASE shall be binding on the heirs, administrators and/or assigns of all parties to this LEASE.

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

LESSORS:

L. E. Cornelius

L. E. Cornelius

Charles F. Noble

Charles F. Noble

LESSEE:

Irvin G. Scott, Jr.

Irvin G. Scott, Jr.

AMENDMENTS
(Pine Tree Group)

For the same consideration therein expressed, the foregoing Lease is corrected so as to limit the term thereby granted to a period of Thirty (30) years from June 4, 1955, with an option to the Lessee or his assigns to renew the same for an additional period of Five (5) years from and after June 4, 1985, and the following numbered clauses are hereby amended to read as follows:

First: The Lessee shall pay to the Lessors a ten per cent (10%) gross royalty on the proceeds of all ores, concentrates, precipitates, metal or by-products mined, shipped and sold from said property, or mined therefrom and reduced or otherwise treated thereon, after first deducting transportation and treatment charges; provided, however, that in the event the Lessee or his assigns shall erect and operate their own plant upon or adjacent to said property, said Lessee or his assigns shall be thereupon entitled to deduct a treatment charge of not exceeding Four Dollars ($4.00) per ton as to all ores or products so mined or treated from said property. The amount so to be charged by the Lessee or his assigns shall be computed upon actual milling or reduction costs, as evidenced by adequate account books and records which shall be kept by the Lessee and open to inspection by the Lessors at all reasonable times.

Second: The Lessee shall pay to the Lessors Five Thousand Dollars ($5,000.00) advance royalty on or before August 1, 1955, such payment to be made at the L. E. Cornelius Store, in Mina, Mineral County, Nevada, or at such other place as may be hereafter selected by the Lessors upon written notice to the Lessee or his assigns.

Third: Commencing on or before September 1, 1955, and on or before the 1st day of each and every month thereafter during the life of this Lease, Lessee shall pay to the Lessors a minimum monthly royalty of Five Hundred Dollars ($500.00), such payment to be made at the L. E. Cornelius Store, in Mina, Mineral County, Nevada, or at such other place as may be hereafter selected by the Lessors upon written notice to the Lessee or his assigns.

Fourth: The Five Thousand Dollars ($5,000.00) advance royalty so to be paid by the Lessee to the Lessors on or before August 1, 1955 shall be credited to the Lessee and apply on future production royalties only to the extent that such production royalties, during any month or months of operations shall exceed said required minimum monthly royalty payments of Five Hundred Dollars ($500.00), and until the amount so credited by said advance royalty of Five Thousand Dollars ($5,000.00) shall have been exhausted, with no right in the Lessee or his assigns to accumulate any future production royalties in excess of or in addition to said initial credit of $5,000.00 advance royalty.

Fifth: Upon termination of this Lease, either by expiration of the term, by surrender, or by cancellation or revocation for failure by the Lessee to comply with the terms and conditions hereof, any and all advance, minimum monthly and production royalties theretofore paid shall belong to the Lessors, as additional consideration and rentals for the granting of these presents.

Sixth: In addition to the requirements set forth in this Clause for the protection of said property against liens, encumbrances or debts, Lessee or his assigns shall file a duplicate original of the Notice of Non-Liability therein mentioned and an Affidavit of such posting with the Recorder of Mineral County, Nevada, within five days thereafter.

Seventh: The words "Nevada Industrial Insurance" are hereby substituted for the words "Compensation Insurance" as mentioned in this Clause.

Ninth: There is hereby added to this Clause, immediately following the words "above listed", the following exception and further requirements:

> ...unless performance thereof as to any such year or years shall be exempted by Federal law, and shall complete such annual labor requirements and file verified proof thereof with the Recorder of Mineral County, Nevada, in manner prescribed by law, on or before the 1st day of May of each year of the term. Lessee shall thereupon mail written notice of such filing, together with a true copy thereof to the Lessors.

Tenth: This Clause is hereby amended to read:

Commencing with the taxable year 1955, Lessee shall promptly pay any and all such State and County taxes as may be levied and assessed upon said property and the improvements thereon or appurtenant thereto or used in connection therewith, and shall also pay Lessee's proportion (90%) of all bullion, severance or other like taxes as may be assessed upon the output therefrom during the life of said Lease, or of any extension thereof.

Twelfth: Commencing on the fifth line, and immediately after the words "during the life of this LEASE," The remainder of this clause is amended to read:

...or upon failure of the Lessee to perform any of the terms and conditions of this Lease according to its true intent and meaning, Lessee shall be deemed in default, and Lessors may thereupon give written notice thereof to the Lessee, and if such default be not remedied within twenty (20) days from and after the date of forwarding such notice by registered mail to the Lessee, at his post office address (P.O. Box 724, Moab, Utah or to such other address as the Lessee or his assigns may designate in writing to the Lessors), all of the Lessee's rights and privileges arising hereunder shall thereupon terminate, and the term of the Lease hereby granted shall thereupon expire and be of no further force or effect, and the Lessors may thereupon and without further notice enter upon and take possession of the property, and the Lessee shall deliver peaceable possession thereof to the Lessors.

Thirteenth: This Clause is hereby amended to read:

Lessee shall have the right to remove any and all machinery, equipment, buildings or other improvements placed or installed upon, in or about the property by the Lessee, (save and except mine timbers, mine track, and air pipe installed beneath the surface) for a period of sixty (60) days from and after the expiration or sooner determination of this Lease.

Excepting only as hereinabove expressly modified and amended, all other terms, covenants and conditions of said lease shall be and remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have hereunto signed their names on this 7th day of July, 1955.

L. E. Cornelius

L. E. Cornelius

Charles F. Noble

Charles F. Noble

LESSORS.

I. C. Scott Jr.

Irvin C. Scott, Jr.

LESSEE.

STATE OF NEVADA)
: ss.
County of Mineral)

On this _____ day of July, 1955, personally appeared before me, the undersigned, a Notary Public in and for said State and County, L. E. CORNELIUS, known to me to be the person described in and who executed the foregoing instrument, and who acknowledged to me that he executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal of Office on the day and year in this Certificate first above written.

NOTARY PUBLIC
In and for said State and County

My Commission Expires:

_____

STATE OF NEVADA,
County of Mineral } ss.

On this 7th day of July A. D. one thousand nine hundred and Fifty Five personally appeared before me Kay Fortune a Notary Public in and for said County of Mineral, L.E. Cornelius, Charles F. Noble and Irvin C. Scott, Jr. known (or proved) to me to be the persons described in and who executed the annexed instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of Mineral, the day and year in this Certificate first above written.

Kay Fortune

Notary Public in and for the County of Mineral, State of Nevada.

My commission expires June 21st, 1958

GENERAL—RENO PRINTING CO., RENO, NEVADA

ASSIGNMENT

For and in consideration of the sum of Ten and No/100 Dollars ($10.00) and other good, valuable and sufficient consideration, IRVIN C. SCOTT, JR. and PATTY BELL SCOTT, his wife, ASSIGNORS, do hereby sell, assign, transfer and set over unto DAN O'LAURIE, ASSIGNEE, all of ASSIGNORS' right, title and interest in and to that certain Mining Lease Agreement entered into, on the 4th day of June, 1955, together with amendments thereto dated July 7, 1955, by and between L. E. Cornelius and Charles F. Noble as Lessors and Irvin C. Scott, Jr. as Lessee., said aforementioned certain Mining Lease Agreement and amendments thereto having been recorded in the office of the County Recorder of the County of Mineral, State of Nevada in Book 11, pages 34 to 38, said Mining Lease Agreement dated June 4, 1955 and amendments thereto dated July 7, 1955 covering lease of five (5) unpatented mining claims located in the Pilot Range near Mina, Mineral County, Nevada, in approximately Section 7, T. 6 North, Range 36 East (unsurveyed) by L. E. Cornelius and Charles F. Noble, Lessors to Irvin C. Scott, Jr., Lessee. Aforementioned unpatented mining claims located in the names of L. E. Cornelius and Charles F. Noble of Mina, Nevada, and recorded in the office of the county recorder of Mineral County, State of Nevada, as shown below:

CLAIM NAME	DATE OF RECORDING	BOOK	PAGE
Pine Tree # 1	7-24-51	14	59, 60
Pine Tree # 2	7-24-51	14	60
Pine Tree # 3	7-24-51	14	61
Pine Tree # 4	8-14-51	14	74
Pine Tree # 5	8-14-51	14	74

WITNESS the hands of the ASSIGNORS this 5th day of August, 1955.

Irvin C. Scott, Jr.

Patty Bell Scott

Patty Bell Scott (his wife)

STATE OF UTAH)
) ss
COUNTY OF GRAND)

On the 5th day of August, 1955, personally appeared before me IRVIN C. SCOTT, JR. and PATTY BELL SCOTT, his wife, the signers of the foregoing instrument, who being first duly sworn, acknowledged to me that they executed the same.

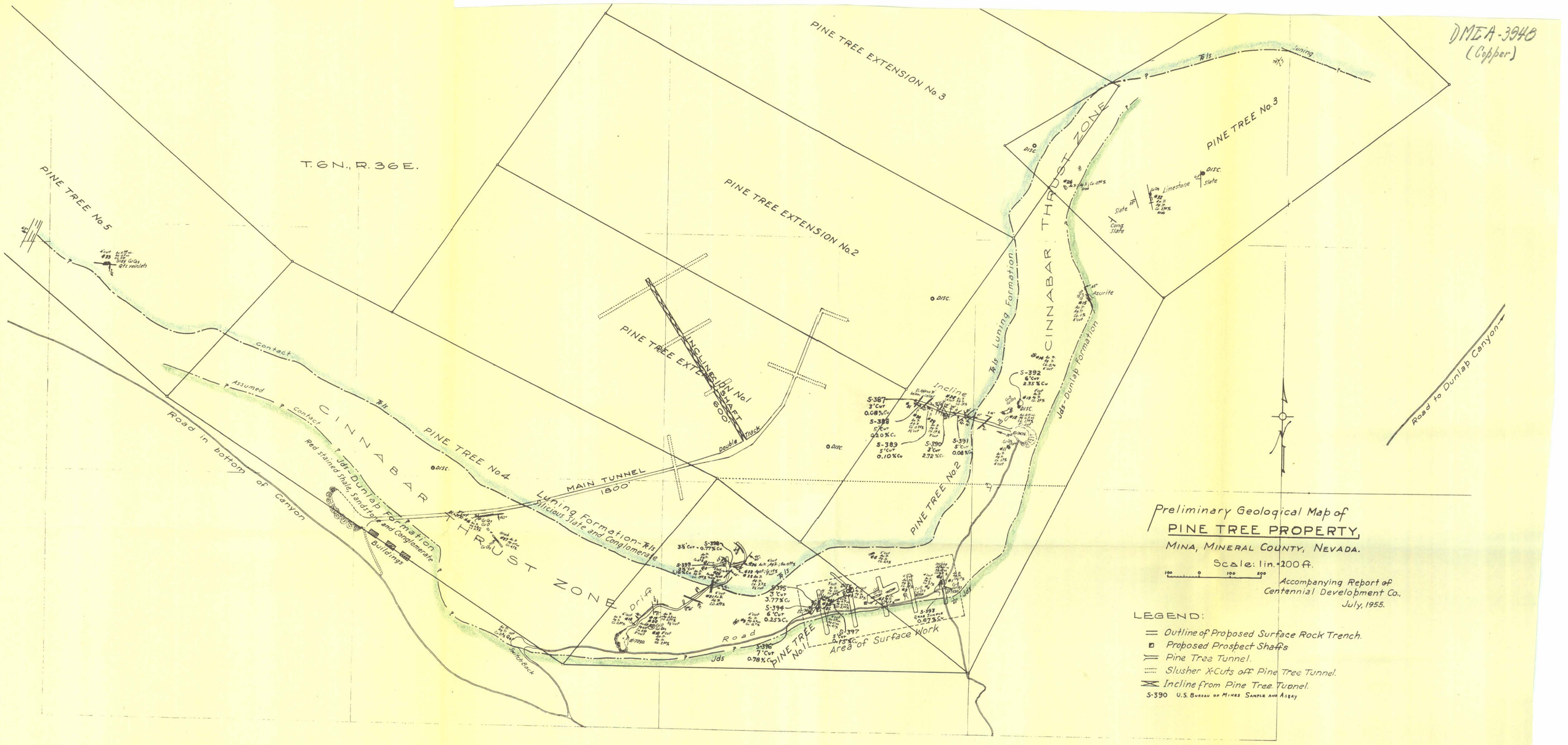
Notary Public, Residing in
Moab, Grand County, Utah

My Commission Expires:
May 19, 1958

CENTENNIAL DEVELOPMENT COMPANY

EUREKA, UTAH

DMEA-3948
(Copper)



Preliminary Geological Map of
PINE TREE PROPERTY,
MINA, MINERAL COUNTY, NEVADA.
Scale: 1 in. = 200 ft.
100 0 100 200
Accompanying Report of
Centennial Development Co.,
July, 1955.

LEGEND:
- Outline of Proposed Surface Rock Trench.
- Proposed Prospect Shafts
- Pine Tree Tunnel.
- Slusher X-Cuts off Pine Tree Tunnel.
- Incline from Pine Tree Tunnel.
- S-390 U.S. Bureau of Mines Sample and Assay

Figure 2

DMEA-3040
(Copper)

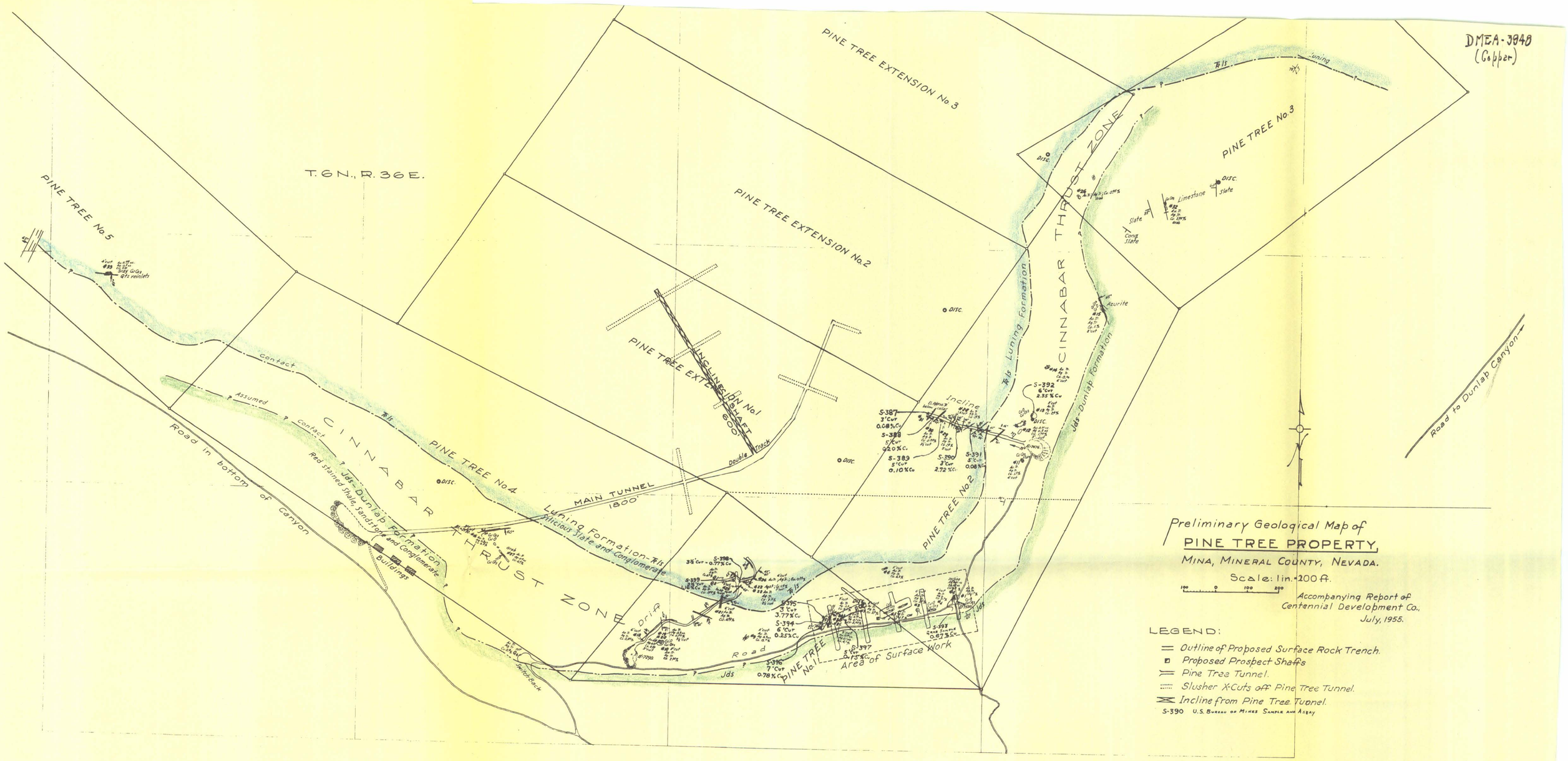
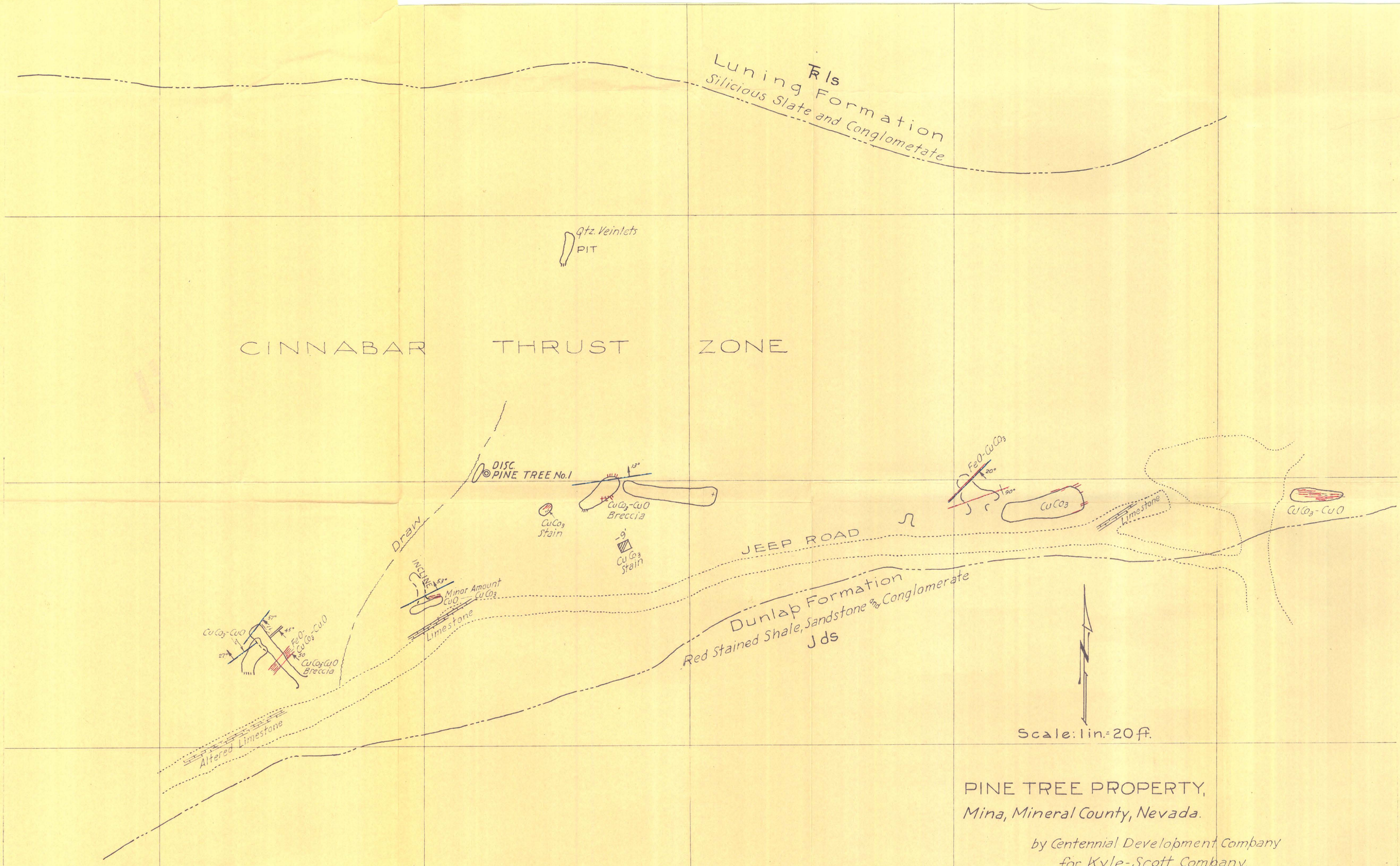


Figure 2



PINE TREE PROPERTY,

Mina, Mineral County, Nevada.

by Centennial Development Company
for Kyle-Scott Company.
July, 1955.

Preliminary Geological Map of
PINE TREE PROPERTY,
MINA, MINERAL COUNTY, NEVADA.
Scale: 1in.=100ft.
Accompanying Report of
Centennial Development Co.
July, 1955.
LEGEND:
Outline of Proposed Surface Rock Trench.
Proposed Prospect Shafts.
Pine Tree Tunnel.
Slusher X-cuts off Pine Tree Tunnel.
Incline from Pine Tree Tunnel.
Area of Surface Work
PINE TREE No.1
PINE TREE No.2
PINE TREE No.3
PINE TREE No.4
PINE TREE No.5
PINE TREE EXTENSION No.1
PINE TREE EXTENSION No.2
PINE TREE EXTENSION No.3
INCLINE EXTENSION No.1
MAIN TUNNEL
1000
CINNABAR THRUST ZONE
CINNABAR THRUST ZONE
Luning Formation-Kis
Dulcie Formation
Dulcie Formation-Kis
Luning Formation
Dulcie Formation
Road in bottom of canyon
Road to Dunlap Canyon
Dunlap Road and Mina
9 Miles to
Tunnel
Approx. 200'
CABIN
T6N., R.36E.
Assumed
Contact
Incline
Limestone
Slate
Coral Slate
Quartzite
Adit
Disc
Pipe
Drift
Road
Adits
Road to Dunlap Canyon