RPT. ON BOULDER MERCURY MINING CLAIM IN OTHER FILES

dmta-2990

O
P
Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
So. 157 Howard Street
Spokane 4, Washington

April 6, 1953

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D.C.

Re: Previous Docket DMA-1176X - Declined
(Uranium)

Boulder Mercury Group
Jefferson County, Montana

Dear Mr. Selfridge:

Enclosed are three copies of an application submitted by the Uranium Star Mining Company on the Boulder Mercury Group, Jefferson County, Montana. One copy of the application has been retained at this office.

Also enclosed are four copies of a memorandum by Mr. George Becraft, U. S. Geological Survey, pointing out that recent exploration work by the Uranium Star Mining Company has failed to disclose any evidence suggesting that further work is warranted. Mr. Becraft recommends that the enclosed application be denied.

The Field Team concurs with Becraft and recommends denial of the application. No further consideration will be given this application unless requested by DMEA officials in Washington, D.C.

By DMEA Field Team, Region II

/s/ A. E. Weissenborn
A. E. Weissenborn, Executive Officer
(U. S. Geological Survey)

/s/ M. E. Volin, Member
M. E. Volin, Member
(U. S. Bureau of Mines)

Enclosures
cc: USBM. (2)
Becraft

Reviewed by
DMEA [illegible]
4-20-53

P
Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
So. 157 Howard Street
Spokane 4, Washington

April 6, 1953

Memorandum

To: DMEA Field Team, Region II

From: George E. Becraft, Geologist, U. S. Geological Survey

Subject: Report on resubmitted application for DMEA loan, Boulder Mercury Group, Jefferson County, Montana, Previous Docket No. DMA-1176X - Declined - (Uranium).

An application for DMA assistance on the Boulder Mercury group was denied in 1951. Since then 300 feet of adit has been driven to intersect a large chalcedonic vein zone which crops out at the crest of a low ridge. Because this work has supplied no additional evidence to indicate the possibility of a uranium deposit, the situation on this group of claims is in no way different from when the original application was denied. Therefore, I recommend that this second application also be denied.

The writer has spent two field seasons mapping in the vicinity of the Boulder Mercury group of claims. As a part of this study the adit on the Boulder Mercury group was examined. It is situated in quartz monzonite which is slightly altered and cuts a few very small veinlets (less than one inch) of chalcedonic silica. No anomalous radioactivity was detected in the adit and no uranium minerals were recognized.

A few very weak radioactivity anomalies have been detected along chalcedonic vein zones exposed at the surface on this group of claims, but they are too weak to warrant exploration.

The increase in counts per minute on a scintillometer in the adit reported in the application can be duplicated in most mines in the area and certainly the applicant's judgment is not good when he states that "we.....have disclosed positive evidence of mineralization in sufficient amount, in our judgment, to warrant further development".

I support the original denial and strongly recommend that this second application be denied for the same reason: no evidence to indicate the possibility of a uranium ore body.

Distribution:
DMEA (Orig. & 3)
USBM (2)
Docket
Becraft

4-20-53

700

FILE COPY
SURNAME:

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

MAR 17 1953

BW

Leo J. Kottas, Esquire
Union Bank Building
Helena, Montana

Re: DMA-1176X (Declined) (Uranium)
Uranium Star Mining Co.,
Boulder Mercury Group, Montana

Dear Mr. Kottas:

We acknowledge your letter of March 3, 1953, referring to the above application which was denied on June 21, 1951, by the Defense Minerals Administration.

It is noted that you wish to re-submit the application on behalf of Mr. J. I. Listle and Uranium Star Mining Company, whom you now represent, following the completion of additional work on the tunnel and the disclosure of "mineralization in sufficient amount, in our judgment, to warrant further development."

For your information, this Agency is the successor to the Defense Minerals Administration, and deals with exploration only. You will find enclosed information and other matter pertaining to the exploration program. After studying this information if it is decided that the Applicant has disclosed an appreciable tonnage of uranium ore, then, of course, a "discovery" has been made and the Applicant probably would not be eligible for assistance under the Defense Minerals Exploration program. However, the Defense Materials Procurement Agency (address: General Services Building, F Street between 18th and 19th, N.W., Washington, D.C.) is set up to advance financial aid for the further development of presently known strategic mineral deposits. On the other hand, if the work has revealed only a good indication of a uranium deposit, then Applicant may be eligible for aid on a 90-10% participation basis.

On the assumption that the latter is the case, if Applicant wishes to do so, a new application, in quadruplicate, may be submitted on the forms herewith provided. Such application should be forwarded to the following Regional Office:

Mr. A. L. Weissenborn
Executive Officer
DMA Field Team, Region II
South 157 Howard Street
Spokane 8, Washington

If an application is filed, it will be assigned a new docket number by this office.

A copy of your letter of March 2 has been forwarded to Mr. Weissenborn together with a copy of this reply.

Sincerely yours,

Ernest Wm. Ellis, Chief
Rare and Misc. etals Division

Enclosures

EWEllis/gla
3-16-53
cc to: Adm.Reading File
Docket
Messrs. HDKeiser, Rm. 3641
APButler, Jr., Rm. 3206 GSA
Mr. Ellis
DMEA Field Team, Region II (2) w/c incoming letter

J.C. 3/17/53

LEO J. KOTTAS
ATTORNEY AT LAW
UNION BANK BUILDING
HELENA, MONTANA

March 3, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 5 1953

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

Attention: Mr. Tom Lyon
Director Supply Division

Dear Mr. Lyon:

Re: D,M,A 1176X-Exploration Loan
Boulder Mercury Group, Montana

With reference to the above application we wish to state that we have completed driving of the tunnel to a distance of 300 feet and have disclosed positive evidence of mineralization in sufficient amount, in our judgment, to warrant further development. For that reason we wish to re-submit application for loan.

Mr. Listle states that the costs of further development will be as follows:

Driving of said tunnel at price of $25.00 perfoot

Tunnel should be driven an additional 300 feet and drifting 50 feet each way on vein . This work can be contracted for the price of $25.00 per foot, money payable as each 50 feet is completed to specifications. Total costs of proposed development work is $10,000.00.

We wish to re-submit application for loan to cover ninety percent (9)%) of above costs.

Will you have the kindness to address all communications to this office as this office is now representing Mr. J. I. Listle and Uranium Star Mining Company.

Very truly yours,

Leo J. Kottas

Leo J. Kottas

LJK:CEB

FILE COPY
SURNAME:

Bourret
Hosted

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

AIR MAIL

June 21, 1951

Mr. J. I. Listle
Uranium Star Mining Company
3950 West 8th Street
Los Angeles 5, California

Re: Uranium Star, Colorado
DMA docket 1176x

Dear Mr. Listle:

Your application of April 30, 1951 for an exploration project in the amount of $42,037.70 has been received by the Minor and Rare Metals Branch, Supply Division.

After careful review and study by the DMA engineers we find insufficient evidence to justify government participation in the exploration project submitted by you. If the assessment work soon to be performed by your group reveals more positive evidence of mineralization I would suggest you resubmit your proposal.

Yours very truly,

Tom Lyon

Tom Lyon, Director
Supply Division

WBourret/bf
cc: Adm. Reading File
Lyon
Strobel
Kaiser-Hosted
Field Team II (2)
Bourret
Files

1176

FILE COPY
SURNAME:

Bourret
Porter

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

June 21, 1951

MEMORANDUM

To: Landon F. Strobel, Executive Secretary

Through: Director, Supply Director

From: Minor and Rare Metals Branch

Subject: Uranium Star, Colorado
DMA docket 1176x

I am attaching hereto letter of even date addressed to the Uranium Star Mining Company denying their request for an exploration project in the amount of $42,037.70.

We are returning hereto the complete docket, which includes the following: (a) two copies form MF-103. (b) assignment of lease. (c) modification of mining lease and option. (d) certificate of articles of partnership. (e) report on the Boulder group by W. V. Lewis & J. T. Lewis. (f) memo for A. E. Weissenborn dated may 27 stating that there is insufficient evidence to justify this project.

approved Tom Lyon
Director Supply Division

Weston Bourret, Chief
Minor and Rare Metals Branch

Attachment
WBourret/bf
cc: Adm. Reading File
Lyon
Strobel
Kaiser-Hosted
Field Team II (2)
Bourret
Files

Docket 1176

FILE COPY
SURNAME:
Bourret.

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

July 10, 1951

Mr. J. I. Listle, General Manager
Uranium Star Mining Company
3950 West Eighth Street
Los Angeles 5, California

Dear Mr. Listle:

Thank you for your letter of July 1, advising that you are proceeding to drive the six-hundred foot crosscut tunnel. After completion of this development work and in the event you should decide to resubmit this project, I would suggest that you contact Mr. A. A. Weissenborn, DMA Executive Officer, Region II, South 157 Howard Street, Spokane, Washington. We are all very much interested in following your work and will be pleased to learn of future developments.

Yours very truly,

Tom Lyon

Tom Lyon, Director
Supply Division

WBourret/mh

cc: Adm. Read. File
Reports and Records
Lyon
Field II
Hosted & Keiser AEC
Bourret
Files

URANIUM STAR MINING COMPANY

FIELD HEADQUARTERS • • • BOULDER, MONTANA

J. I. LISTLE, GENERAL MANAGER
3950 WEST EIGHTH STREET
LOS ANGELES 5, CALIFORNIA

320 N. Warren St. Apt 2
Helena, Montana
July 1, 1951

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 6 - 1951
LANDON F. STROBEL
Executive Secretary

Defense Minerals Adm;
Supply Division
Washington 25, D. C.

Attention: Mr. Tom Lyon:

Dear Sir:

Your letter of June 21st has been forwarded to the above address and just received.

In regard to Uranium Star, Colorado D.M.A. docket 1176X I am sorry to hear that the atomic engineers of the Spokane office; do not agree with the two private engineers reports; which I submitted and as a result the U. S. Government does not wish to aid in the development.

For your information and files we are going ahead with the development and driving a cross cut tunnel. Total proposed length of the tunnel 600 ft. Our engineer Frank R. Wicks thinks that the tunnel will disclose commercial ore when it is 300 or 350 ft. long. If this should prove correct I will accept your kind suggestion and re-submit our proposal.

Thanking you for past courtesies.

Sincerily,

J. I. Listle

J. I. Listle

JIL/AMS

FILE COPY
SURNAME:

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

May 16, 1951

Mr. J. I. Listle
Uranium Star Mining Co.
3950 West 8th Street
Los Angeles 5, California

Subject: DMA 1176X
Re: Exploration Loan -
Boulder Mercury Group
(Montana)

My dear Mr. Listle:

Receipt is acknowledged of your application and attachments of April 30, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number 1176X and referred to Mr. Weston G. Bourret, Acting Chief, Minor and Rare Metals Branch on May 16, 1951.

In any future correspondence relating to your application, kindly refer to DMA 1176X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:mab
cc: Strobel 2
Files
Bourret
Lyon

Loan 1176

856

PHONES: OFFICE - VANDIKE 5384
RES. - LAFAYETTE 8276

Comm 11 76 X

FRANK R. WICKS
CONSULTING MINING AND INDUSTRIAL ENGINEER
108 WEST SIXTH STREET., LOS ANGELES 14, CALIF.

May 22, 1951

REPORT OF EXAMINATION.

BOULDER "MERCURY" GROUP.
LODE MINING CLAIMS.

JEFFERSON COUNTY, MONTANA. Uranium Star Mining Co.

Date of this Report: May 22, 1951.

Dates of Examination: May 13-16, 1951.

Report Prepared for: Western Mines, Inc.,
% Mr. John G. Gemmill, Atty.,
530 West Sixth Street,
Los Angeles 14, Calif.
Phone: VA-8147.

Name of Property: Boulder Mercury Group.

Types of Ores: Primary and secondary Uranium Minerals, with considerable silver, some gold and some mercury and lead in spots.

Names of Claims: Boulder Mercury.
Boulder Mercury Nos. 2-3-4- and 5.
East Mercury Nos. 1 and 2.
Mercury Connection.

Area: 8 Lode Mining claims. Net area approximately 145 acres. In a contiguous group.

Location of Property: One mile northerly from Boulder, Jefferson County, Montana.

Legal Location: A portion of Section 20:T-6-N:R-4-W:M.P.M. Mostly in the north half of that section. Nearest reference point in N.W. Corner of Section 20.

Titles: Unpatented lode claims held by Mineral Location under U. S. Mining Laws. Original locations by Sanford R. Davis, etal. Subsequently leased to the Elkhorn Mining Company of Boulder, Montana, and later Subleased to John I. Listle of Los Angeles, Calif., whose present address is: Apt. 21, at 320 Warren St., Helena, Montana. (Phone: 1419-R.) Lease and sublease carry option

to purchase and provide for payment of royalties to apply in part to purchase payments. See Jefferson County records for details.

Assessment Work: All completed for current fiscal year to hold claims until June 30, 1952.

Maps: Reference maps by Wade V. Lewis of Boulder, Mont., is approximately correct as to location of Boulder Mercury Group, based upon preliminary survey. The claims have not been surveyed by a U. S. Mineral Surveyor in the manner required for procurement of patent title, but this is not required to maintain unpatented status.

The map by Wade V. Lewis shows some, but not all, of adjoining claims held by Elkhorn Mining Company, which are not included in the sublease to John Listle.

Mining District: Known as the Boulder District, and also as a part of the Elkhorn District, for which no definite boundaries have been established.

Federal Reservations: Properties are apparently outside of the Elkhorn Forest Reserve, but are subject to provisions of the Taylor Grazing Act for cattle grazing. This does not in any way interfere with normal mining operations. No school land, railroad land or Indian involved, except right-of-way of Great Northern through the lower extreme end of East Mercury Nos. 1 and 2.

Shipping Point: Boulder, a station on the Great Northern Railroad, ½ to ¾ mile from the property. Loading track and two loading ramps at station. Railroad runs across the end of two of the claims.

Roads: Boulder is on paved U. S. Highway No. 91. Road to property is good, county maintained. Roads on property to reach principal working places will have to be built, involving less than a mile of hillside grading of easy construction, plus two or three culverts and a cattle guard.

Road Distances: Boulder to Helena via highway - 30 miles.
Boulder to Butte " " - 34 miles.
Boulder to Salt Lake City, as the destination for ore shipments, 500 miles.

Boulder "Mercury" Group
Western Mines, Inc.,- Mr. John G. Gemmill, Atty.
May 22, 1951.

Elevations: At Boulder - 4900 ft. above sea level; at central portion of property - 5200 ft.

Terrain: Rolling hills; sparsely timbered; few rock outcrops. Surface covered with range grass.

Climate: Snow and freezing weather December to March. Ordinary underground operations can be carried on throughout the year after property is equipped to do so.

Power: Nearest electric power line about one mile away. It is understood that power from that line is available when wanted.

Water: None on property now. Water for mining purposes can be developed by shallow well in main canyon when desired. Underground operations will likely by dry above the 5000 ft. elevation. The properties are in the watershed of the Boulder River, which flows southeasterly through the county.

Timber: None on property. Can be purchased as green mine dimension timber or logs from nearby.

Labor: Usually ample and good in this area. Mostly American native miners living in vicinity.

Camp Equipment: None now and none required.

Mine Equipment: None.

Operations: No production as yet. No underground work as yet. Assessment work as surface trucking, in progress with rented dozer.

General Operating Conditions: Exceptionally good.

Boulder "Mercury" Group
Western Mines, Inc.,- Mr. John G. Gemmill, Atty.
May 22, 1951.

GENERAL DESCRIPTION OF THE PROPERTY:

A description of this Boulder Mercury property should include mention of the adjoining Free Enterprise Claims. Together, the two properties represent about 30 claims or something more than 550 acres. This area is really under one ownership, except that the eight easterly claims have been set over into a separate lease to John Listle, while about 22 claims are retained by Elkhorn Mining Company for their operations.

The claims of the two groups lie on the Southerly and Southeasterly slopes of round-top foot hills which flank the Elkhorn Range, bordering a wide section of the valley of the Boulder River. The main line of the Great Northern runs through this valley, enroute from Helena to Butte.

There is no substantial difference in the two groups as to surface appearance or principal geological characteristics. As the situation is explained to me, the property was considered to be larger than the Elkhorn Mining Company could develop, with facilities and funds available, so they leased one part of it to the Sunshine Mining Co., and another part to John Listle, while the Elkhorn Company continued to operate the original Elkhorn Silver-lead mine located some 60 miles northeast of Boulder. Subsequently, the Sunshine Company gave up their lease on the Free Enter-

prise Group and turned that group back to Elkhorn. Further reference is made to this later in this report.

HISTORY:

There has been no production from the Boulder Mercury Group. The Enterprise workings have produced 350 to 400 tons of ore to date. A consideration of the prior circumstances is necessary to understand the present situation.

In the year 1941, the ground covered by some of the Boulder Mercury Claims, and an adjoining area now known as the Free Enterprise Group, were located by Sanford Davis and others. Prospecting showed some gold and silver ore in outcrops. One shaft 85 feet deep and another shallow one followed veins which showed some value. A general cessation of gold mining stopped these operations, and the properties were dormant until 1949, when they were relocated by the same claimants.

Some of the outcrops showed spots of cinnabar, an ore of mercury, which brought about some exploration but no production. It was then discovered that the waste dumps at the shafts on the Free Enterprise Group showed uranium ores, as determined by Geiger Counter tests.

This discovery lead to active development at one shaft, and subsequent detailed surveys of both groups of claims by means of the more sensitive Scintillometer equipment.

Based upon these exploratory surveys the Sunshine Mining Company took a lease on the Enterprise claims and equipped the old Blue Bell shaft. The company deepened the shaft, did some exploratory work, encountered water in the shaft at 100 feet below the surface, made a small trial shipment, and then surrendered their lease. The Elkhorn Company, under the management of Wade V. Lewis, took over and began to produce and ship ore in a small way.

Separately, the Elkhorn Company had some location work and assessment work on outlying claims completed. Doing so, developed new showings of uranium ore on their ground, but the ores produced have come entirely from the Silver Bell shaft, and from a section between 20 ft. and 100 ft. below the surface, within 150 ft. of the shaft.

DEVELOPMENT ON THE BOULDER GROUP:

There is no underground work on the Boulder Mercury Group. There are discovery pits, prospect holes and open cuts on all of the claims but no real development has been attempted. The largest cut is a dozer trench about 100 feet long, 8 feet deep and 3 to 6 feet deep. This crosscuts one of the principal outcrops near the center of Boulder Mercury No. 2 Claim and at the end line of the Boulder Mercury No. 4. Several other smaller cuts were made recently to suppliment

the older test pits made during the prior history of the property. At no place is there more than about 8 ft. of depth attained as yet.

GEOLOGICAL CONDITIONS:

The whole area may be generalized as a granitic block, probably a part of the well known Boulder Batholith, through which there are a large number of well defined intrusions of a coarse grained, softer monzonite. This monzonite is higher in the feldspar component than the better known quartz monzonite of the Butte District and far more absorbent as to mineralization.

These intrusions appear as bold continuous outcrops having a general east-west trend and near vertical dips. The principal one traverses the length of the Boulder No. 3 Claim as a strong outcropping rib, and thence is noted with less prominence westerly and southwesterly through the Boulder Nos. 2 and 4, and thence on through the Free Enterprise Group for a half mile.

Approximately paralleling this principal structure, there are a series of others on the southerly side. Portions of these, likewise, show strong croppings but less continuous.

The main intrusion, or dike, is the most noticeable and, hence, has been given most of the attention as to

Scintillometer surveys and exploratory work, but is less likely to carry mineralization to an important degree, because of certain conditions herein described.

There are a very great number of places where the monzonite and the bordering granitic rocks have been cut by a series of later intrusions of small transverse dikes, or flows, of a fine-grained, hard lamprophyre type rock which is locally classified as Aplite. This rock is found as thin dikes and as thin flat sills, squeezed out into cracks in the main structures, and is usually accompanied by quartz veins of varying size.

These conditions, as described, exist on both of the properties mentioned herein, and very likely extend to other nearby areas. The same general situation may be noted at several places north and east of Boulder, presumably around the fringes of the granitic batholith, in intrusive rocks near, but not in, the older sediments.

To be attractive, so far as uranium mineralization is concerned, the full sequence of rock formation described must be found:

1. Limestone or dolomitic beds.
2. Massive granite.
3. Monzonite or porphyritic intrusions.
4. Aplite, felsite or pegmatite intrusives.
5. Quartz or quartz-calcite fissure fillings bordering the aplite.
6. Rare metal and precious metal minerals in the fissure veins, adjacent to, but not in, the matrix of the aplite, accompanied by absorption of both primary and secondary minerals in the softer monzonite as dispersed grains and crystals.

More than likely, the aplite, the quartz and the mineralization occurred simultaneously, with the latter phase continuing for some time, or as long as the structure would permit the circulation of magmatic solutions.

These geological remarks are here interposed as a possible guide in the conduct of future development work for the reason that blind or unskilled prospecting for ores in these areas could be disappointing.

Ores and Ore Types:

There is no tonnage of developed, commercial ore on the Boulder Mercury Group. None could be reasonably expected at the surface, other than isolated spots. Experience on the adjoining property shows pretty well that commercial ore of the uranium minerals does not exist nearer than about 20 feet below the surface. A little gold value is noted in vein croppings and frequent spots of very high silver, as native silver and as sulphide mineral, are found near the surface. However, fair to very good radio-activity is shown along and in the proximity of all of the monzonite croppings. This is particularly noted where there is a crossbreak, or an aplite or quartz rib in evidence in or alongside of the monzonite.

The cropping of the main dike of monzonite need not be strong at those points. Some of the more broken sections appear to be the most radio-active, and in some places, the location and trend of the dike may be traced under detrital by Scintillometer readings.

At the surface and in test trenches, it is found that the Geiger counter is not appreciably excited unless the probe is within a foot or two of radio-active mineral. Underground, the Geiger becomes influenced by the mass and thus is not very useful as a guide to ore concentrations. On the other hand the Scintillometer is both sensitive and directional on the surface and underground and the readings are more nearly a reflection of richness of mineralization than an indication of mass or volume of ore in the vicinity.

Because of these circumstances, any future work must at the outset be guided by what is known of the relationship between surface activity and actual underground commercial ore in the workings of the adjoining property, as well as an understanding of the basic conditions under which the uranium ores are or were deposited.

In this structure, on either or both of the properties, the primary uranium ore is uraninite, occurring with or in proximity of pyrargyrite, an ore of silver. Here there seems to be a defined difference between the uraninite and pitchblende; what we have designated as uraninite is dense black, fine crystals in small masses. The pitchblende takes on a brownish-black color, is in larger crystals, sometimes as much as ¼" in dimension. Presumably the alteration products are autunite and torbernite with a variety of other combinations such as uranophane and uranyl phosphate, etc.

Autunite is found to a limited extent in the fissures and more generally as disemminated green or blackish green grains well out into the monzonite. Generally, there is no important mineralization at the surface, but in places

where the ore is hard there is some mineralization that can be noted visually and that excites the counters within 3 or 4 feet from the surface. From there down, in the mine workings on the Silver Bell Claim, there is a gradual increase in uranium mineralization with both the primary and secondary types in the ore. Autunite is found at 80 feet below the surface, which is as deep as I was able to observe conditions; it presumably continues to some point below the permanent water level at 120 feet. There is not enough information available as to this type of ore in this type of structure to be able to predict whether a zone of increased mineralization, or what is known as secondary enrichment, will occur immediately below water level such as is often found in base mineral deposits. In all probability, such enrichment does not occur with uranium minerals because of slight water solubility of the altered forms.

Incidentally, the tiny red spots that are evident in the Boulder Mercury Group croppings, have been identified as proustite, an ore of silver. They look so much like the mercury ore, cinnabar, that the red color gave rise to the erroneous name Mercury when the claims were located.

A fairly extensive Scintillometer survey had already been made on the main ledge or cropping which is mentioned as passing through the northerly claims of the Boulder Mercury Group. I checked enough of the readings to be satisfied that the survey figures were approximately correct, or at least within reasonable range of accuracy. It is my considered opinion that the parallel ledges to the south, which are less prominent, are likely to contain

a higher average mineral content, and hence are more attractive for initial prospecting and development. This is again referred to later in this report.

Sampling:

During my examination no accurate average samples could be taken, as there is no commercial ore in sight to sample. Numerous specimen samples were saved for study and these were used in the preparation of this report.

Market:

The sole buyer of uranium ores is the Atomic Energy Commission, or agents of the Commission. Shipments from the adjoining group are being sold to Vitro, an authorizied buyer, and sent to Salt Lake City to a new plant there.

There is a fixed schedule of prices, published by the Commission and recently revised upward. The price range is from $3.50 to $8.00 per pound of contained U_3O_8, on cars at shipping point. For estimating purposes, the value of these ores at Boulder can be figured at about $7.00 per pound of U_3O_8, although that price may not be fully realized until the operations reach a depth where the mineralization is mainly the primary uraninite and pitchblende.

These ores are very desirable for treatment by the processers and the Commission and I am assured that there is and will be a continuing market and no reduction in price schedule within the foreseeable future. Carnotite ores take a lower price range, but there is no probability that any carnotite will be encountered in this structure.

Conclusion and Recommendations:

I have been able to get no accurate information on the subject, but am of the opinion that the operations up to date on the adjoining property have as yet been unprofitable if we figure total expenditures against total receipts from the sale of some 350 or 400 tons of ore averaging about four pounds of uranium oxide per ton.

High costs incident to shaft operation with inadequate equipment and the relatively shallow depth of workings are the main contributing factors. Dealing with a little known ore and a poorly understood geological problem were probably responsible for the failure of the Sunshine Company to get production. The present management is good and future results should be better.

There is every good reason to believe that development on the Boulder Mercury Group will show at least as good ore at comparable depth and gradually improving grade with increased depth. The silver content of the ore on this property may be enough to be very important. I am advised that the Vitro Company have arranged to pay for silver in the uranium ores, which has not heretofore been done.

I would not expect sizable amounts of commercial ore above 100 feet from the surface, and hence would not favor any appreciable expenditures for drilling or other exploration above that horizon. The first objective, should be to reach a depth of 100 feet or more at the best possible location and then map the future program upon the results shown by that initial work.

Vertical drill cores are of course the accepted method of exploration for large ore bodies; in this case I would expect such drilling to be inconclusive if not quite disappointing. Diagonal or sloping drill work will be much better if the drill is directed to crosscut the structure.

Taken as a whole, it appears to me that the best initial results will be obtained by crosscut tunnel development work. For this purpose, I selected two feasible points for portal tunnels, either one of which could be decided upon for the first work.

An adit tunnel at either of these sites, directed more or less true north, would cut four or five monzonite dikes in about 600 feet of length, and at that length it would have about 200 feet of depth below the croppings of the main dike. However, as previously stated, I believe that the softer and less prominent dikes between the proposed portal and the main dike are most likely to produce the best ore, so that commercial grade should be found in the first 300 or 350 feet of tunnel work.

This tunnelling could be preceded by some horizontal diamond drilling if desired. One hole of about 800 feet and two 500 to 600 feet would be indicated. However the cost of this drilling will total more than half of the cost of the tunnel and I would personally favor spending the money on tunnel work without prior drilling. The main reasons are that drill work takes considerable time, and when it is finished no one is fully satisfied as to the results, whether they are very good or very bad.

The whole situation justifies recommendation for development on a limited scale and the tunnel method is my preference. The surface showings and the underground conditions on the adjoining property are good. The initial work will serve to prove the particular property and its value, and it will also tend to show what may be expected throughout the District where the same geological conditions can be found.

In that country at this time of year, ordinary tunnel work in granite and monzonite should be done on contract for around $15.00 or $16.00 per lineal foot after the preliminary portal and surface work is done and a road to the site is built. Very little timber will be required and a good crew should make 200 feet of tunnel per month. When ore is encountered it will then be an easy matter to install sorting arrangements and truck bin for shipments.

No license is required for exploration and mining of uranium ores but when the ore is ready to sell, then both the producer and the buyer must be licensed, which is merely a matter of application to the Commission at the proper time.

It is understood that engineers representing the Atomic Energy Commission have recently examined this general area. The results of their work are not yet known to me. It is reported, however, that the data can be obtained from the Spokane office of the Commission if one can show a legitimate reason for getting it. The Department of Interior surveyors were on the ground resetting section corners a few days ago.

This is a new project in a country where there has been but little uranium production in the past. However, improved methods of exploration and substantially higher market prices with a more or less guaranteed market for all that can be produced, all serve to reduce the gamble involved in the initial operation. If as good ore is encountered as can reasonably be expected, then the project should be quite profitable as well as quite simple to operate.

I appreciate the courtesies extended to me by all concerned at Boulder during the progress of the examination work.

Respectfully submitted,

Frank R. Wicks

Consulting Mining Engineer.
Registered engineer #2370, Calif.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 5 - 1951
LANDON F. STROBEL
Executive Secretary

Dma - 1176X

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

So. 157 Howard Street
Spokane 8, Washington

May 7, 1951

Memorandum

To: L. F. Strobel, Executive Secretary, Defense Minerals Administration

From: A. E. Weissenborn, Executive Officer, DMA Field Team, Region II

Subject: Transmittal of Application for Exploration Contract; Uranium Star Mining Company.

Four copies of Form MF-105 submitted to this office by the Uranium Star Mining Co., 3950 W. Eighth Street, Los Angeles 5, California, are transmitted herewith. The applicant proposes that a sum of $42,057.70 be expended in exploration for uranium on the Boulder Mercury Group of claims in Jefferson County, Montana, 90 percent of this sum to be furnished by the Government. The exploration would consist of 1800 feet of diamond drilling, 100 feet of shaft sinking and 200 feet of drifting.

During the past summer a field party of the Geological Survey made a detailed study of the geology and radiometry of parts of Jefferson Co., Montana, including the claims on which the proposed exploration would be done. The report and maps of this study is just about completed and will be transmitted to L. R. Page in Denver within ten days.

It seems appropriate to note in this transmittal that no unusual radioactivity and only one small spot of weak to moderate activity was noted on the Boulder Mercury Group of claims. The claims are crossed by at least two silicified vein zones similar to those in which the nearby Free Enterprise uranium-silver mine is located. In this connection, however, it should be pointed out that similar structures are common in an area of a few square miles north and east of the Free Enterprise mine, and that moderate surficial radioactivity has been noted at two localities within this area and weak to moderate radioactivity has been noted at a number of localities, one of which is now the Free Enterprise mine.

It is our opinion that the weak and completely unexplored radioactivity on the Boulder Mercury claims is not sufficient to justify Government participation in an exploration project unless the Government is willing to take a wild gamble. If assessment work soon to be started by the applicant should reveal more interesting anomalies, his proposal might be reviewed again.

cc: M.E. Volin
S.M. Shelton
L.R. Page
E.E. Thurlow

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
So. 157 Howard Street
Spokane 8, Washington

May 7, 1951

Memorandum

To: L. F. Strobel, Executive Secretary, Defense Minerals Administration

From: A. E. Weissenborn, Executive Officer, DMA Field Team, Region II

Subject: General statement concerning applications of Elkhorn Mining Company and Uranium Star Mining Company.

This brief note is an attempt to place the two applications listed above in their proper perspective.

Both applications propose that exploration be done for uranium near Boulder, in Jefferson Co., Montana, in an area recently studied in detail by the Geological Survey and the Atomic Energy Commission. The results of the Survey investigation are now being compiled in this office and should be available through Mr. L. R. Page, Trace Elements Unit of the Geological Survey in Denver, within a few weeks. It may be pertinent to summarize these results here.

An area of about four square miles in the Boulder batholith near Boulder, Montana, is cut by numerous silicified and altered zones. Uranium mineralization is known to be present in one of these vein zones and weak to moderate radioactive anomalies have been detected in several others. The one zone of known uranium mineralization is currently being explored by the Elkhorn Mining Co. (Free Enterprise mine on Silver Bell claim) and a small amount of uranium-silver ore has been shipped from it. It is proposed in the application of Elkhorn Mining Co. that this zone be further explored by drilling and other underground work. The Field Team and Mr. Thurlow, Chief, Spokane Exploration Branch, A.E.C., favor this plan with certain reservations set forth in the letter of transmittal accompanying that application.

In the application of Uranium Star Mining Co., it is proposed to test by drilling and other underground work one of numerous vein structures on which a weak radioactive anomaly has been detected, but on which no exploration work other than a scintillometer survey has been done. It is the opinion of both the Field Team and Mr. Thurlow that the anomaly on this zone, as shown on maps submitted by the applicant, is not sufficiently strong or widespread to justify

Government participation at the present time. If assessment work seem to be started by the applicant should reveal more interesting anomalies, his proposal might be reviewed again.

Extra copies of both the enclosed memos are included for transmittal to the appropriate commodity committees.

cc: M.E. Velin
S.N. Shelton
L.B. Page
E.E. Thurlow

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 - 1176 X

Date received 5/15/51

Participation

Uranium Star Mining Co.
3950 West 8th Street
Los Angeles 5, California

c/o J. I. Listle

Name and address of applicant

Date April 30, 1951

FILL IN THIS BLOCK

Date of application April 30, 1951

Estimated cost $42,037.70

Mineral or metal Uranium

Percentage of Government participation 90%

Location of mine See Legal description in lease and map in geological report attached.

Date of filing MF-100 April 30, 1951

DMA Docket Number, if available dma - 1176 X

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? Partnership

*2. If a partnership, state names and addresses of partners. See copy Partnership Agreement Attached.

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders. Inapplicable

*4. Describe the mining and general business experience of (a) the applicant, and (b) the person or persons who will manage the project. Self employed in geological oil development for over 20 yrs. (b) will employ Wade V. Lewis as Engineer

*5. Are you the owner or the lessee of the property? Lessee

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. Inapplicable

7. If lessee, attach a copy of the lease and state if it is in good standing. Attached and 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. Attached

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)? Five Thousand - Yes.

*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. See legal description in lease & map in geological report.

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted. Boulder Mercury Claims #2 and 3. See legal description in lease & map in geo.Rep.

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. Same as question #10 (a)

*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. Same as question #10 (a)

*13. State source and quantity of water available for operations and its sufficiency at all seasons. City Water from Boulder
State amount of power to be used, rate per hour or other cost, and source. Truck from Boulder - 3 miles

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. None

15. State in detail how the ore could be shipped and how and where milled. See geological report attached.

*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. None

(*b*) State briefly the known history and production of adjoining and neighboring properties. See geological report/ attached.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations. Attached geological report

*17. Production:

(*a*) If mine is in production, furnish the following information: Inapplicable

	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. None

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Uranium

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. 100 ft. shaft & 200 ft. of drifts - 9 mos.

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. Geological report attached.

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. See attached estimate

(*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. Attached.

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.

Uranium Star Mining Co.
(Name of company)

By J. L. Leslie
(Signature of authorized official)

April 30, 1951
(Date)

General Partner
(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-100
(March 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. dma-1176X

Date received 5/15/51

Uranium Star Mining Co.
3950 West 8th Street
Los Angeles 5, Calif.

c/o J. H Listle

Name and address of applicant

Date April 30, 1951

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) Necessity Certificate pursuant to the provisions of Sec. 124-A (Amortization Deduction) of Internal Revenue Code, 1950, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products? Inapplicable
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts. Inapplicable
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point. See legal description in lease and map in geological report attached
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated. Not in operation
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☒ Lessee.
   - ☐ Contractor.
5. Number of years in production None

   If not in production or operation, estimated date when production will begin Inapplicable
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project. Self employed in geological oil development for over 20 yrs. (b) Will employ Wade V. Lewis as Engineer.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation. None
   (*b*) State briefly the known history and production of adjoining and neighboring properties. See Geological Report
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations. Geological Report Attached.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	Net Cash Surrender Value After Loans (h)
See Copy of Partnership Agreement Attached							
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants Inapplicable

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production: Inapplicable

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change. Inapplicable

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

See Geological Report Attached

(*b*) If deposit is other than placer: Inapplicable

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer: Inapplicable

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads: See Geological Report & Map

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply: City water from Boulder. Sufficient all seasons.

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power: See itemized statement for estimated cost of exploration attached.

State amount of power used, rate per hour, and source thereof.

16. Labor: Same as 15

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities: None

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

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.

Uranium Star Mining Co.
(Name of company)

By J. T. Little
(Signature of authorized official)

April 30, 1951
(Date)

General Partner
(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.

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

Items 8 MF-103

Uranium Star Mining Company
(Limited Partnership)
Balance Sheet
April 30, 1951

ASSETS

CURRENT ASSETS		
Cash in Bank		$ 5,563.76
FIXED ASSETS		
Mining Leases	$ 5,000.00	
Equipment	810.30	
TOTAL FIXED ASSETS		5,810.30
DEFERRED CHARGES		
Development Expense	$ 1,559.73	
Organization Expense	459.20	
General Expense	409.51	
TOTAL DEFFERED CHARGES		2,428.44
TOTAL ASSETS		$ 13,802.50

NET WORTH

CAPITAL		
Partnership Capital	$15,000.00	
Less: General Partner - Current Account	1,197.50	
TOTAL CAPITAL		$ 13,802.50

Item 23
Sheet 1 of 2

		Total	Core Drilling	Installing Facilities & Equipment	Sinking Shaft	Drift	Other
(a) LABOR							
Hoistman - 2 at $15.00 per day -	60 days	$ 1,800.00			$1,050.00	$ 750.00	
Miners - 2 at $14.00 per day	60 days	1,680.00			980.00	700.00	
Muckers - 2 at $12.00 per day	60 days	1,440.00			840.00	600.00	
General Utility - 1 at $16.00 per day	60 days	960.00			560.00	400.00	
Mechanics - 4 at $14.00 per day	10 days	560.00		$ 560.00			
Total Labor		$ 6,440.00		$ 560.00	$3,430.00	$2,450.00	
(b) SUPERVISION							
Foreman - 1 at $13.00 per day	70 days	$ 1,260.00		$ 180.00	$ 630.00	$ 450.00	
(d) COST OF NECESSARY INSTALLATION OR CONSTRUCTION OF ADDITIONAL FACILITIES, ETC.							
Hoist House and Gallows Frame		$ 1,600.00		$ 1,600.00			
Road work and dozer cuts		1,000.00		1,000.00			
Construction of powder magazine, out houses and other facilities		800.00		800.00			
Total		$ 3,400.00		$ 3,400.00			
(e) COST OF EQUIPMENT							
Air Compressor - 220 cu. ft. - complete with hose and air hammer		$ 6,500.00		$ 6,500.00			
Hoist		1,250.00		1,250.00			
Cable and attachments		300.00		300.00			
Electric light plant		750.00		750.00			
Water Pumps		300.00		300.00			
Pipe, air and water, 300 ft. @ $1.60 per ft.		480.00		480.00			
Blower, air		350.00		350.00			
Ore bucket		55.00		55.00			
Ore Car		100.00		100.00			
Rails - 16 lb. - 700 ft. @ $150.00 per ton		825.00		825.00			
Total cost of equipment		$10,210.00		$10,210.00			

	Total	Core Drilling	Installing Facilities & Equipment	Sinking Shaft	Drift	Other
(h) MATERIALS AND SUPPLIES						
Fuel	$ 1,260.00			$ 735.00	$ 525.00	
Powder, caps, fuses, etc.	1,300.00			1,050.00	750.00	
Steel bits (Kena Metal)	840.00			490.00	350.00	
Timber and planking:						
6200 board ft. @ $200.00 per M.F.	1,240.00			1,240.00		
2000 board ft. @ 180.00 per M.F.	360.00				360.00	
7000 board ft. @ 150.00 per M.F.	1,050.00			1,050.00		
Steel hangers -						
1 in. - 1400 ft. @ 50¢ per ft.	700.00			700.00		
Miscellaneous hardware						
steel washers, nails, etc.	800.00			550.00	250.00	
Miscellaneous small tools	200.00		$ 200.00			
Total Materials & Supplies	$8,250.00		$ 200.00	$5,815.00	$ 2,235.00	
(i) POWER, WATER, UTILITIES & OTHER COSTS						
Industrial Accident Insurance	$ 431.20		$ 41.44	$ 227.36	$ 162.40	
Payroll Taxes	346.50		33.30	182.70	130.50	
Trucking & Freight	1,500.00		300.00	700.00	500.00	
Welding & Misc. Repairs	1,200.00			700.00	500.00	
Assays	150.00					$ 150.00
Scintillometer grid surveys, surface, underground radiation equipment replacements	1,200.00					1,200.00
Core drilling - 1800 ft. at $4.25 ft. (12 core holes, 150 ft. ea. which will cross cut the ore zone at 100 ft. in depth.	7,650.00	$ 7,650.00				
Total	$12,477.70	$ 7,650.00	$ 374.74	$ 1,310.06	$ 1,292.90	$ 1,350.00
SUMMARY						
(a) Labor	$ 6,440.00		$ 560.00	$ 3,430.00	$ 2,450.00	
(b) Supervision	1,260.00		180.00	630.00	450.00	
(d) Installation or construction of additional facilities, etc.	3,400.00		3,400.00			
(e) Equipment	10,210.00		10,210.00			
(h) Materials and Supplies	825.00		200.00	5,815.00	2,235.00	
(i) Power, water, utilities & Other costs	12,477.70	$ 7,650.00	374.74	1,310.06	1,292.90	$ 1,350.00
GRAND TOTAL	$ 42,037.70	$7,650.00	$ 14,924.74	$11,635.06	$ 6,427.90	$ 1,350.00

Item 24, Page 1

	1st Mo.	2nd Mo.	3rd Mo.	4th Mo.	5th Mo.	6th Mo.	7th Mo.	8th Mo.	9th Mo.	Total
The following schedule is based on an average of twenty (20) working days per calendar month										
CORE DRILLING										
90 days at $85.00 per day										
20 days at 85.00	$1,700.00									$ 1,700.00
20 days at 85.00		$1,700.00								1,700.00
20 days at 85.00			$1,700.00							1,700.00
20 days at 85.00				$1,700.00						1,700.00
10 days at 85.00					$ 850.00					850.00
INSTALLING FACILITIES & EQUIPMENT										
Purchase and receipt of Equipment					$10,210.00					10,210.00
Purchase of balance of facilities and equipment and completion of installation 10 days after beginning of 6th Mo.						$4,714.74				4,714.74
SINKING SHAFT										
35 days at $333.88 per day										
10 days at 333.88						3,338.80				3,338.80
20 days at 333.88							$6,677.60			6,677.60
5 days at 333.88								$1,668.66		1,668.66
DRIFTS										
25 days at $257.12 per day										
15 days at 257.12								3,856.80		3,856.80
10 days at 257.12									$2,571.10	2,571.10
OTHER										
Assays, etc.	135.00	270 .00	135.00	135.00	135.00	135.00	135.00	135.00	135.00	1,350.00
TOTALS	$1,835.00	$1,970.00	$1,835.00	$1,835.00	$11,195.00	$8,188.54	$6,812.60	$5,660.46	$2,706.10	$42,037.70

dma - 1176X

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

So. 157 Howard Street
Spokane 8, Washington

May 7, 1951

Memorandum

To: L. F. Strobel, Executive Secretary, Defense Minerals Administration

From: A. E. Weissenborn, Executive Officer, DMA Field Team, Region II

Subject: Transmittal of Application for Exploration Contract; Uranium Star Mining Company.

Four copies of Form MF-105 submitted to this office by the Uranium Star Mining Co., 3950 W. Eighth Street, Los Angeles 5, California, are transmitted herewith. The applicant proposes that a sum of $42,037.70 be expended in exploration for uranium on the Boulder Mercury Group of claims in Jefferson County, Montana, 90 percent of this sum to be furnished by the Government. The exploration would consist of 1800 feet of diamond drilling, 100 feet of shaft sinking and 200 feet of drifting.

During the past summer a field party of the Geological Survey made a detailed study of the geology and radiometry of parts of Jefferson Co., Montana, including the claims on which the proposed exploration would be done. The report and maps of this study is just about completed and will be transmitted to L. R. Page in Denver within ten days.

It seems appropriate to note in this transmittal that no unusual radioactivity and only one small spot of weak to moderate activity was noted on the Boulder Mercury Group of claims. The claims are crossed by at least two silicified vein zones similar to those in which the nearby Free Enterprise uranium-silver mine is located. In this connection, however, it should be pointed out that similar structures are common in an area of a few square miles north and east of the Free Enterprise mine, and that moderate surficial radioactivity has been noted at two localities within this area and weak to moderate radioactivity has been noted at a number of localities, one of which is now the Free Enterprise mine.

It is our opinion that the weak and completely unexplored radioactivity on the Boulder Mercury claims is not sufficient to justify Government participation in an exploration project unless the Government is willing to take a wild gamble. If assessment work soon to be started by the applicant should reveal more interesting anomalies, his proposal might be reviewed again.

cc: M.E. Volin
S.M. Shelton
L.R. Page
E.E. Thurlow

Form MF-108
(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-1176 X

Date received 5/15/51

Participation

Uranium Star Mining Co.
3950 West 8th Street
Los Angeles 5, California

c/o J. I. Listle

Name and address of applicant

Date April 30, 1951

FILL IN THIS BLOCK

Date of application April 30, 1951

Estimated cost $42,037.70

Mineral or metal Uranium

Percentage of Government participation 90%

Location of mine See legal description in lease and map in geological report attached.

Date of filing MF-100 April 30, 1951

DMA Docket Number, if available Dma-1176X

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? Partnership

*2. If a partnership, state names and addresses of partners. See Partnership Agreement attached.

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders. Inapplicable

*4. Describe the mining and general business experience of (a) the applicant, and (b) the person or persons who will manage the project. Self employed in geological oil development for over 20 yrs. (b) Will employ Wade V. Lewis as Engineer

*5. Are you the owner or the lessee of the property? Lessee

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. Inapplicable

7. If lessee, attach a copy of the lease and state if it is in good standing. Attached and 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. Attached

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)? Five Thousand - Yes.

*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. See legal description in lease & map in geological report

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted. Boulder Mercury Claims #2 and 3. See legal description in lease & Map geo.Rep.

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. Same as question #10 (a)

*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. Same as question #10 (a)

*13. State source and quantity of water available for operations and its sufficiency at all seasons. City Water from Boulder State amount of power to be used, rate per hour or other cost, and source. Truck from Boulder - 3 miles

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. None

15. State in detail how the ore could be shipped and how and where milled. See geological report attached

*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. None attached.

(*b*) State briefly the known history and production of adjoining and neighboring properties. See geological report/

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations. Attached. geological report

*17. Production:

(*a*) If mine is in production, furnish the following information: Inapplicable

	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. None

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Uranium

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. 100 ft. shaft & 200 ft. of drifts - 9 mos.

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. Geological report attached.

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. See attached estimate

(*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. Attached

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.

Uranium Star Mining Co.
(Name of company)

By J. F. Little
(Signature of authorized official)

April 30, 1951
(Date)

General Partner
(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-100
(March 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. _____

Date received _____

Uranium Star Mining Co.
3950 West 8th Street
Los Angeles 5, Calif.

c/o J. I. Listle

Name and address of applicant

Date April 30, 1951

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) Necessity Certificate pursuant to the provisions of Sec. 124–A (Amortization Deduction) of Internal Revenue Code, 1950, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products? Inapplicable
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts. Inapplicable
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point. See legal description in lease and map in geological report attached
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated. Not in operation
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☒ Lessee.
   - ☐ Contractor.
5. Number of years in production None

   If not in production or operation, estimated date when production will begin Inapplicable
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project Self employed in geological oil development for over 20 yrs. (b) Will employ Wade V. Lewis as Engineer.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation. None
   (*b*) State briefly the known history and production of adjoining and neighboring properties. See Geological Report
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations. Geological Report Attached

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
See Copy of Partnership Agreement Attached							
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants Inapplicable

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production: Inapplicable

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change. Inapplicable

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

See Geological Report Attached

(*b*) If deposit is other than placer: Inapplicable

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer: Inapplicable

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads: See Geological Report & Map.

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply: City water from Boulder. Sufficient all seasons

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power: See itemized statement for estimated cost of exploration attached.

State amount of power used, rate per hour, and source thereof.

16. Labor: Same as 15

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities: None

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

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.

Uranium Star Mining Co.
(Name of company)

By J. J. Little
(Signature of authorized official)

April 30, 1951
(Date)

General Partner
(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.

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

Items 8 MP-103

Uranium Star Mining Company
(Limited Partnership)
Balance Sheet
April 30, 1951

ASSETS

CURRENT ASSETS		
Cash in Bank		$ 5,563.76
FIXED ASSETS		
Mining Leases	$ 5,000.00	
Equipment	810.30	
TOTAL FIXED ASSETS		5,810.30
DEFERRED CHARGES		
Development Expense	$ 1,559.73	
Organization Expense	459.20	
General Expense	409.51	
TOTAL DEFFERED SHARGES		2,428.44
TOTAL ASSETS		$ 13,802.50

NET WORTH

CAPITAL		
Partnership Capital	$15,000.00	
Less: General Partner - Current Account	1,197.50	
TOTAL CAPITAL		$ 13,802.50

Item 23
Sheet 1 of 2

		Total	Core Drilling	Installing Facilities & Equipment	Sinking Shaft	Drift	Other
(a) LABOR							
Hoistman - 2 at $15.00 per day -	60 days	$ 1,800.00			$1,050.00	$ 750.00	
Miners - 2 at $14.00 per day	60 days	1,680.00			980.00	700.00	
Muckers - 2 at $12.00 per day	60 days	1,440.00			840.00	600.00	
General Utility - 1 at $16.00 per day	60 days	960.00			560.00	400.00	
Mechanics - 4 at $14.00 per day	10 days	560.00		$ 560.00			
Total Labor		$ 6,440.00		$ 560.00	$3,430.00	$2,450.00	
(b) SUPERVISION							
Foreman - 1 at $18.00 per day	70 days	$ 1,260.00		$ 180.00	$ 630.00	$ 450.00	
(d) COST OF NECESSARY INSTALLATION OR CONSTRUCTION OF ADDITIONAL FACILITIES, ETC.							
Hoist House and Gallows Frame		$ 1,600.00		$ 1,600.00			
Road work and dozer cuts		1,000.00		1,000.00			
Construction of powder magazine, out houses and other facilities		800.00		800.00			
Total		$ 3,400.00		$ 3,400.00			
(e) COST OF EQUIPMENT							
Air Compressor - 220 cu. ft. - complete with hose and air hammer		$ 6,500.00		$ 6,500.00			
Hoist		1,250.00		1,250.00			
Cable and attachments		300.00		300.00			
Electric light plant		750.00		750.00			
Water Pumps		300.00		300.00			
Pipe, air and water, 300 ft. @ $1.60 per ft.		480.00		480.00			
Blower, air		350.00		350.00			
Ore bucket		55.00		55.00			
Ore Car		100.00		100.00			
Rails - 16 lb. - 700 ft. @ $150.00 per ton		825.00		825.00			
Total cost of equipment		$10,210.00		$10,210.00			

	Total	Core Drilling	Installing Facilities & Equipment	Sinking Shaft	Drift	Other
(h) MATERIALS AND SUPPLIES						
Fuel	$ 1,260.00			$ 735.00	$ 525.00	
Powder, caps, fuses, etc.	1,800.00			1,050.00	750.00	
Steel bits (Kena Metal)	840.00			490.00	350.00	
Timber and planking:						
6200 board ft. @ $200.00 per M.F.	1,240.00			1,240.00		
2000 board ft. @ 180.00 per M.F.	360.00				360.00	
7000 board ft. @ 150.00 per M.F.	1,050.00			1,050.00		
Steel hangers -						
1 in. - 1400 ft. @ 50¢ per ft.	700.00			700.00		
Miscellaneous hardware						
steel washers, nails, etc.	800.00			550.00	250.00	
Miscellaneous small tools	200.00		$ 200.00			
Total Materials & Supplies	$8,250.00		$ 200.00	$5,815.00	$ 2,235.00	
(i) POWER, WATER, UTILITIES & OTHER COSTS						
Industrial Accident Insurance	$ 431.20		$ 41.44	$ 227.36	$ 162.40	
Payroll Taxes	346.50		33.30	182.70	130.50	
Trucking & Freight	1,500.00		300.00	700.00	500.00	
Welding & Misc. Repairs	1,200.00			700.00	500.00	
Assays	150.00					$ 150.00
Scintillometer grid surveys, surface, underground radiation equipment replacements	1,200.00					1,200.00
Core drilling - 1800 ft. at $4.25 ft. (12 core holes, 150 ft. ea. which will cross cut the ore zone at 100 ft. in depth.	7,650.00	$ 7,650.00				
Total	$12,477.70	$ 7,650.00	$ 374.74	$ 1,810.06	$ 1,292.90	$ 1,350.00
SUMMARY						
(a) Labor	$ 6,440.00		$ 560.00	$ 3,430.00	$ 2,450.00	
(b) Supervision	1,260.00		180.00	630.00	450.00	
(d) Installation or construction of additional facilities, etc.	3,400.00		3,400.00			
(e) Equipment	10,210.00		10,210.00			
(h) Materials and Supplies	825.00		200.00	5,815.00	2,235.00	
(i) Power, water, utilities & Other costs	12,477.70	$ 7,650.00	374.74	1,810.06	1,292.90	$ 1,350.00
GRAND TOTAL	$ 42,037.70	$7,650.00	$ 14,924.74	$11,685.06	$ 6,427.90	$ 1,350.00

Item 24, Page 1

	1st Mo.	2nd Mo.	3rd Mo.	4th Mo.	5th Mo.	6th Mo.	7th Mo.	8th Mo.	9th Mo.	Total
The following schedule is based on an average of twenty (20) working days per calendar month										
CORE DRILLING										
90 days at $85.00 per day										
20 days at 85.00	$1,700.00									$ 1,700.00
20 days at 85.00		$1,700.00								1,700.00
20 days at 85.00			$1,700.00							1,700.00
20 days at 85.00				$1,700.00						1,700.00
10 days at 85.00					$ 850.00					850.00
INSTALLING FACILITIES & EQUIPMENT										
Purchase and receipt of Equipment					$10,210.00					10,210.00
Purchase of balance of facilities and equipment and completion of installation 10 days after beginning of 6th Mo.						$4,714.74				4,714.74
SINKING SHAFT										
35 days at $333.88 per day										
10 days at 333.88						3,338.80				3,338.80
20 days at 333.88							$6,677.60			6,677.60
5 days at 333.88								$1,668.66		1,668.66
DRIFTS										
25 days at $257.12 per day										
15 days at 257.12								3,856.80		3,856.80
10 days at 257.12									$2,571.10	2,571.10
OTHER										
Assays, etc.	135.00	270.00	135.00	135.00	135.00	135.00	135.00	135.00	135.00	1,350.00
TOTALS	$1,835.00	$1,970.00	$1,835.00	$1,835.00	$11,195.00	$8,188.54	$6,812.60	$5,660.46	$2,706.10	$42,037.70

URANIUM STAR MINING COMPANY

CERTIFICATE OF ARTICLES
of
LIMITED PARTNERSHIP

The undersigned, for the purpose of forming and entering into a limited partnership in accordance with the provisions of Section 15501 to 15530, inclusive, of the Corporation's Code of the State of California, hereby mutually agree:

I

The name of this limited partnership shall be and is

URANIUM STAR MINING COMPANY

II

The character of the business to be carried on and transacted by this limited partnership shall be mining for, producing and marketing uranium and other minerals; and in the performance of and pursuit of said business said limited partnership shall be and is authorized to do and perform every act and thing which a natural person could, would or might do, subject, however, to the provisions of the laws of the State of California concerning limited partnerships.

III

The location of the principal place of business is 344 Marion Avenue, R. 1, San Bernardino, California.

IV

The partnership shall exist for a term of fifty (50) years, unless previously dissolved in accordance with the laws of the State of California.

V

The name, place and residence of the General Partner is J. I. Listle, 3950 West Eighth Street, Los Angeles 5, California.

The name, place of residence and contribution of each of the limited partners is as follows:

NAME	RESIDENCE	CONTRIBUTION
E. T. Dorsett	3400 La Cresta Drive Bakersfield, Calif.	$ 1,000.00
W. L. Tipton	208 East 6th St. Bakersfield, Calif.	200.00
Walter M. Crawford	49 Prospect Ave. Long Beach, Calif.	500.00
Priscilla L. Zander	4643 Los Feliz Blvd. Los Angeles 27, Calif.	500.00
George A. Davis	3476 West 8th St. Los Angeles 5, Calif.	500.00
Louis J. Witte	17201 Rancho Encino, Calif.	750.00
Leslie E. Webster	1167 N. Rosemead Blvd. San Gabriel, Calif.	750.00
Marquil H. Zuker	238 3/4 S. Rexford Dr. Beverly Hills, Calif.	300.00
Frank Goldman	Box 644 Bakersfield, Calif.	500.00
W. C. Norby	1316 N. Fuller Los Angeles 46, Calif.	500.00
Everett Watt	11 West Huntington Drive Arcadia, Calif.	300.00
V. A. Oertle	1816 Woolley St. Temple City, Calif.	200.00
Nels Beck	Box 205 San Luis Obispo, Calif.	500.00
A. K. Barbour	27 West Huntington Drive Arcadia, Calif.	500.00
Margaret Barbour	27 West Huntington Drive Arcadia, Calif.	500.00
James Courtney	716 Ocean View Ave. Monrovia, Calif.	500.00
Earle E. Brown	126 N. Edgemont Los Angeles, Calif.	500.00
Louis H. Wicks	133 N. Primrose Ave. Monrovia, Calif.	500.00
Eugene Fox	9822 Alcott St. Los Angeles, Calif.	500.00

John D. Moore	812 N. Alta Vista Blvd. Hollywood, Calif.	$ 500.00
Dr. E. W. Kurrle	1108 N. Western Ave. Los Angeles 27, Calif.	500.00
H. G. Hoover	Security Bank Bldg. Pasadena, Calif.	300.00
John M. Barbour	604 Citizens Bank Bldg. Pasadena, Calif.	300.00
Jack Steinberg	6254 Del Valle Drive Los Angeles, Calif.	900.00
Jos. Baumel	2212 Spruce Bakersfield, Calif.	300.00
E. H. Christian	221 Columbus St. Bakersfield, Calif.	500.00
M. J. Stansbury	2710 La Cresta Drive Bakersfield, Calif.	500.00
Harvey Davis	2211 Quincy Drive Bakersfield, Calif.	500.00
Leo Black	3909 Pierce Road Bakersfield, Calif.	500.00
J. M. Hildremyr	1714 Beale Ave. Bakersfield, Calif.	200.00
Lloyd G. Rainey	5249 Ranchito Ave. Van Nuys, Calif.	200.00
Chas. R. Pearman	616 Roses Rd. San Gabriel, Calif.	300.00

VI

The contribution of the General Partner shall consist of his efforts in locating mining claims containing uranium deposits of potential commercial value and the assignment to the partnership of certain leases and options for a cash consideration of $5,000.00, to be paid him by the partnership covering eight claims known as the Mercury Group in Jefferson County, Montana, which claims are known as follows:

1. Boulder Mercury
2. Boulder Mercury No. 2
3. Boulder Mercury No. 3
4. Boulder Mercury No. 4
5. East Mercury No. 1
6. East Mercury No. 2
7. Mercury Connection
8. Boulder Mercury No. 5

an assignment of said mining leases and options to J. I. Listle being recorded in Book 5, Page 596, of Miscellaneous Records in the office of the Recorder of Jefferson County, State of Montana; together with the use of the instrument which he used in the location of said deposits.

VII

In order that the interest of each partner in the partnership assets and the right to receive partnership profits shall be definitely set forth, and for convenience in accounting and in distribution of income, it is agreed that the partnership is divided into three hundred (300) units, of which the limited partners shall have one unit for each One Hundred Dollars ($100.00) contributed as aforesaid, and the general partner shall have units in a number equal to the aggregate number of units held by the limited partners but not exceeding one hundred and fifty (150) units.

VIII

No limited partner shall have any liability for the obligations of the partnership, nor shall he be obligated to make any contribution to the partnership capital in addition to that provided in Paragraph V hereof.

IX

Subject to the provisions of the laws of the State of California, profits shall only be distributed out of net income, and each partner, whether limited or general, shall receive from said net income the proportion thereof which the number of units held by him bears to the total number of units in the partnership. Said profits shall be distributed quarterly. Provided, however, that the General Partner shall retain out of the income of the partnership prior to the distribution of net profits sufficient monies for the payment of all obligations of the partnership and a reserve not exceeding at any time the sum of Fifteen thousand ($15,000.00) Dollars for the purpose of carrying on the business obligations of the partnership.

X

A limited partner, subject to the laws of the State of California concerning limited partnerships, may substitute an assignee in his place, upon condition that both said limited partner and said assignee shall execute such documents concerning said transfer as the General Partner may prescribe.

XI

Additional limited partners may be admitted by agreement of all parties hereto on such terms as may be provided in said agreement.

XII

No limited partners shall have any priority as to contributions or as to compensation by way of income, nor shall any

limited partner be entitled to any other preference.

XIII

Upon the death or insanity of any general partner, the wife of the deceased or insane general partner shall take his place as such.

XIV

No limited partner has the right to demand property other than cash in return for his contribution.

XV

The General Partner shall have full charge of, and have the supervision and management of, the business of the partnership.

XVI

The General Partner shall keep true, accurate and complete records of all of the business affairs of the partnership, including an accurate accounting system, all of which shall be open to the inspection of any partner at all reasonable times during business hours.

Annually, and oftener if the General Partner shall so desire, a written report of the financial condition of the partnership shall be mailed to the last known address of each member thereof.

XVII

The General Partner shall devote so much of his time as may reasonably be required to conduct the business of the partnership and as compensation for the services to be rendered by him as such general partner shall receive his actual travelling expenses, reasonable living expenses, reasonable costs of car upkeep, gasoline, oil, and reasonable office expenses.

XVIII

The General Partner may prescribe such methods and rules for the conduct of the partnership as are legal and proper.

The General Partner shall cause a bank account to be

opened in the name of the partnership, and may designate such person, or persons, including himself, as may endorse checks for their encashment, and sign checks for withdrawal of funds from said partnership account.

XIX

This certificate may be amended, as provided by the Corporations Code of the State of California.

IN WITNESS WHEREOF, the above named General and Limited Partners have hereunto subscribed their names as of the First day of February, 1951.

J. S. Leslie
General Partner

Address: 3950 West 8th St.
Los Angeles 5, Calif.

A

STATE OF CALIFORNIA,

County of Los Angeles } SS.

ON THIS 20th day of FEBRUARY, A.D., 1951, before me, HARRY MILLER a Notary Public in and for said County and State, personally appeared PRISCILLA L. ZANDER, known to me, (or proved to me on the oath of _____), to be the person whose name is subscribed to the within Instrument, and acknowledged to me that she executed the same.

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

Harry Miller

Notary Public in and for said County and State.

My Commission Expires August 12, 1952

ACKNOWLEDGMENT—GENERAL—WOLCOTTS FORM 232

B

STATE OF CALIFORNIA,

County of Los Angeles } ss.

ON THIS 20th day of FEBRUARY, A.D., 1951, before me, HARRY MILLER a Notary Public in and for said County and State, personally appeared GEORGE A. DAVIS, known to me, (or proved to me on the oath of _____), to be the person whose name IS subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Harry Miller

Notary Public in and for said County and State.

My Commission Expires August 12, 1952

ACKNOWLEDGMENT—GENERAL—WOLCOTTS FORM 232

STATE OF CALIFORNIA,

County of Los Angeles } ss.

ON THIS 20th day of February, A.D., 19 51, before me, Thelma Vivian Wood a Notary Public in and for said County and State, personally appeared C. R. Pearman, known to me, to be the person whose name is subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Thelma Vivian Wood

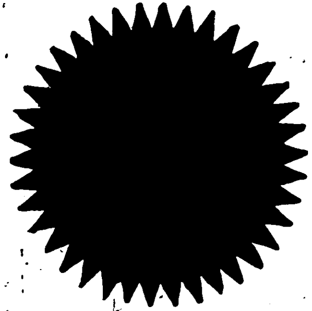
Notary Public in and for said County and State.

~~My Commission Expires April 23, 1951~~

ACKNOWLEDGMENT—GENERAL—WOLCOTTS FORM 232

D

STATE OF CALIFORNIA,
County of Los Angeles } ss.



ON THIS 14th day of February A.D., 19 51, before me, Jessie Merritt Martin, a Notary Public in and for said County and State, personally appeared Walter M. Crawford known to me to be the person whose name is subscribed to the within Instrument, XXXXX XXXXXXXXXXXXXX

and acknowledged to me that he XXXXXXXXXXXXXXX he executed the same

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

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

Jessie Merritt Martin

My Commission expires Apr 22, 1954 Notary Public in and for said County and State.

E

STATE OF CALIFORNIA,
County of Los Angeles } ss.

ON THIS 13 day of February, A.D., 19 71, before me, the undersigned a Notary Public in and for said County and State, personally appeared John M. Bauhaus and O. N. B. Hoover, known to me, (or proved to me on the oath of _____), to be the person whose name is subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Verle F. Stratton
Notary Public in and for said County and State.

ACKNOWLEDGMENT—GENERAL—WOLCOTT'S FORM 232

F

STATE OF California
County of Los Angeles } ss.

ON THIS 12th day of February, A. D., 1951, before me, the undersigned a Notary Public in and for said County and State, personally appeared V. A. Derfler and Everett Watkins Courtney Limited Partners, known to me, to be the persons whose names are subscribed to the within Instrument, and acknowledged to me that they executed the same.

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

Edith J. Franklin
Notary Public in and for said County and State.

ACKNOWLEDGEMENT—GENERAL—WOLCOTT'S FORM 231

My Commission Expires May 19, 1952

STATE OF CALIFORNIA)
(SS
County of Los Angeles)

Each of the undersigned, being first duly sworn, for himself, deposes and says:

That he is the person named in the foregoing Articles of Limited Partnership, as a partner therein, and that his signature is affixed thereto; that he has read said Articles of Limited Partnership and that the statements therein made are true.

General Partner

Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner
Limited Partner	Limited Partner

Subscribed and sworn to before me this _____ day of _____, 1951.

Notary Public in and for said
County and State.

STATE OF CALIFORNIA)
COUNTY OF KERN)

Each of the undersigned, being first duly sworn, for himself deposes and says:

That he is the person named in the foregoing Articles of Limited Partnership, as a partner therein, and that his signature is affixed thereto; that he has read said Articles of Limited Partnership, and that the statements therein made are true.

GENERAL PARTNER

LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER
LIMITED PARTNER	LIMITED PARTNER

SUBSCRIBED AND SWORN TO BEFORE ME

THIS 1st DAY OF February.

1951

Notary Public in and for said County and State.

My Commission Expires April 28, 1953

8A

STATE OF CALIFORNIA,
County of Los Angeles } SS.

ON THIS 19th. day of February, A.D., 19 51, before me, the undersigned a Notary Public in and for said County and State, personally appeared W. C. Norby, Margaret Barbour, A. K. Barbour, Eugene Fox and Jack Steinberg, known to me, (or proved to me on the oath of _____), to be the person s whose name s _____ subscribed to the within Instrument, and acknowledged to me that they executed the same.

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

Notary Public in and for said County and State.

My Commission Expires April 28, 1953

ACKNOWLEDGMENT—GENERAL—WOLCOTTS FORM 232

8B

STATE OF CALIFORNIA,

County of Los Angeles } *ss.*

ON THIS 19th. *day of* February, *A. D.,* 1951, *before me,*

a Notary Public in and for said County and State, personally appeared Dr. E. W. Kurrle

known to me,

to be the person whose name subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Notary Public in and for said County and State.

ACKNOWLEDGMENT — GENERAL — WOLCOTTS FORM 232

My Commission Expires April 28, 1953

. 8C

STATE OF CALIFORNIA,
County of Los Angeles } ss.

ON THIS 18th day of February, A. D., 1951, before me,

a Notary Public in and for said County and State, personally appeared

Louis J. Witte, known to me,

to be the person whose name subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Notary Public in and for said County and State.

My Commission Expires April 29, 1953

90

STATE OF CALIFORNIA,

County of Los Angeles } ss.

ON THIS 19th day of February, A. D., 19 51, before me,

a Notary Public in and for said County and State, personally appeared

John D. Moore

, known to me,

to be the person whose name subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Notary Public in and for said County and State.

ACKNOWLEDGMENT — GENERAL — WOLCOTTS FORM 232

My Commission Expires April 29, 1953

8E

STATE OF CALIFORNIA,
County of Los Angeles } ss.

ON THIS 19th day of February, A. D., 1951, before me,

a Notary Public in and for said County and State, personally appeared

Earle E. Brown

, known to me,

to be the person whose name subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Notary Public in and for said County and State.

ACKNOWLEDGMENT — GENERAL — WOLCOTTS FORM 232

My Commission Expires April 28, 1953

8F

STATE OF CALIFORNIA,
County of Los Angeles } ss.

ON THIS 19th day of February, A. D., 19 51, before me,

a Notary Public in and for said County and State, personally appeared Margnil A. Tucker

, known to me,

to be the person whose name subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Notary Public in and for said County and State.

ACKNOWLEDGMENT — GENERAL — WOLCOTTS FORM 232

My Commission Expires April , 1953

86

STATE OF CALIFORNIA,

County of Los Angeles } *ss.*

ON THIS 19th day of February, A. D., 1951, before me,

a Notary Public in and for said County and State, personally appeared

Louis H. Hicks

known to me,

to be the person whose name subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Notary Public in and for said County and State.

ACKNOWLEDGMENT — GENERAL — WOLCOTTS FORM 232

My Commission Expires April 18, 1953

8H

STATE OF CALIFORNIA,

County of Los Angeles } ss.

ON THIS 19th. day of February, A. D., 1951, before me,

a Notary Public in and for said County and State, personally appeared Leslie E. Webster, known to me,

to be the person whose name subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Notary Public in and for said County and State.

ACKNOWLEDGMENT — GENERAL — WOLCOTTS FORM 232

My Commission Expires April 28, 1953

STATE OF CALIFORNIA

County of KERN } ss.

On this first day of February, A. D. 19 51 before me, GORDEN C. ROESCH a Notary Public in and for the said County and State, residing therein, duly commissioned and sworn, personally appeared E. T. DORSETT, AND E. L. TIPTON AND FRANK GOLDMAN AND E. H. CHRISTIAN AND JOSEPH BAUMEL

known to me to be the persons whose names subscribed to the within instrument, and acknowledged to me that they executed the same.

IN WITNESS WHEREOF: I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

G. C. Roesch

Notary Public in and for said County and State of California

Valley Office & School Equip. Co.
No. 100—General Acknowledgement.

7A

STATE OF CALIFORNIA,
County of Los Angeles } SS.

ON THIS 19th. day of February, A.D., 1951, before me, the undersigned a Notary Public in and for said County and State, personally appeared J. I. Listle, known to me, (or proved to me on the oath of _____), to be the person whose name subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Notary Public in and for said County and State.

My Commission Expires April 28, 1953

ACKNOWLEDGMENT—GENERAL—WOLCOTTS FORM 232

73

STATE OF California
County of Kern } ss.

ON THIS 9th day of February, A. D., 19 51, before me, Marian L. Evans a Notary Public in and for said County and State, personally appeared Leo Black, known to me, to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

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

Marian L. Evans
Notary Public in and for said County and State.

ACKNOWLEDGMENT — GENERAL — WOLCOTTS FORM 231

My Commission Expires February 27, 1951

7c

STATE OF California
County of Kern } ss.

ON THIS 10 day of February, A. D., 1951, before me, Rose Goldstein a Notary Public in and for said County and State, personally appeared Nels Beck, known to me, to be the person whose name is subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

Rose Goldstein
Notary Public in and for said County and State.

My Comm. Expires 6-27-52

ACKNOWLEDGEMENT—GENERAL—WOLCOTTS FORM 231

7D

STATE OF California
County of Tulare } ss.

ON THIS 9th day of February, A. D., 19 51, before me, May Freeman a Notary Public in and for said County and State, personally appeared J. M. Hildreneyr, known to me, to be the person whose name is subscribed to the within Instrument, and acknowledged to me that he executed the same.

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

May Freeman
Notary Public in and for said County and State.

ACKNOWLEDGMENT — GENERAL — WOLCOTTS FORM 231

7E

STATE OF California
County of Kern } ss.

ON THIS 9th day of February, A. D., 19 51, before me, R.E. Mitchell a Notary Public in and for said County and State, personally appeared M.J. Stansbury - Harvey Davis and Lloyd G. Rainey, known to me, to be the persons whose names are subscribed to the within Instrument, and acknowledged to me that they executed the same.

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

R.E. Mitchell
Notary Public in and for said County and State.

My Commission expires 7-12-54

ACKNOWLEDGMENT — GENERAL — WOLCOTTS FORM 231

ASSIGNMENT BY LESSEE AND OPTIONEE

OF

RIGHTS TO DESCRIBED PROPERTY

THIS AGREEMENT, made and entered into this 5th day of December, 1950, by and between ELKHORN MINING COMPANY, a corporation organized and existing under the laws of the State of Montana, with corporate offices at Boulder, Jefferson County, Montana, herein called FIRST PARTY, and J. I. LISTLE, whose address is 3950 West Eighth Street, Los Angeles, California, hereinafter called SECOND PARTY, WITNESSETH:

That First Party is the party of the Second Part and Lessee in and under that certain written Mining Lease and Option, dated the 23rd day of November, 1949, wherein Sanford R. Davis, a single man, of Boulder, Jefferson County, Montana, Edward C. Miles, a single man, of Helena, Lewis and Clark County, Montana, Wade V. Lewis of Boulder, Jefferson County, Montana, and Clyde R. Davis, P. O. Box 69, Boulder, Jefferson County, Montana, are Parties of the First Part and Lessors, a true copy of said Mining Lease and Option being hereto annexed, marked Exhibit A, and by this reference made a part of this Assignment, and said Mining Lease and Option is, at the date hereof in full force and effect, and First Party specifically represents that all of its rights as lessee and optionee under said Mining Lease and Option are valid, operative and effective at this time, and that First Party has the right to make and enter into this Assignment; and

Said Mining Lease and Option embraces two (2) groups of mining claims, the first group consisting of thirteen (13) lode mining claims known as the Free Enterprise Group, and the second group comprises eight (8) lode mining claims known as the Mercury Group, and Second Party is desirous of securing for himself and his assigns all of the right, title and interest of

said lessors in and to the following described eight(8) claims of said Mercury Group, viz.:

Name of Lode Claims	Jefferson County Record		
	Book	Page	Instrument No.
(1) Boulder Mercury	45	353	55067
(2) Boulder Mercury No. 2	45	391	56286
(3) Boulder Mercury No. 3	45	392	56287
(4) Boulder Mercury No. 4	45	393	58034
(5) East Mercury No. 1			
(6) East Mercury No. 2			
(7) Mercury Connection			
(8) Boulder Mercury No. 5			

subject, nevertheless, to full and complete performance by Second Party of all and singular the terms, provisions, conditions and covenants of said Mining Lease and Option, dated November 23rd, 1949, and said lessors under said Mining Lease and Option to-wit, said Sanford R. Davis, Edward C. Miles, Wade V. Lewis and Clyde R. Davis, and said lessee under said Mining Lease and Option, to-wit, Elkhorn Mining Company, are willing that Second Party shall have and secure all of the right, title and interest of Elkhorn Mining Company in and to said eight (8) claims in said Mercury Group, in consideration of the execution of this Assignment for the benefit of said lessors and said lessee under said Mining Lease and Option of November 23rd, 1949, and upon performance by Second Party hereunder of all of the obligations of Elkhorn Mining Company, a corporation, applicable to said eight (8) claims, as in said Mining Lease and Option of November 23rd, 1949 set forth, and as herein set forth.

NOW, THEREFORE, for and in consideration of the sum of One Dollar ($1.00) in hand paid by Second Party to First Party, the receipt of which is hereby acknowledged by First Party, and for and in consideration of the overriding royalty to be paid by Second Party hereunder, in addition to the Six and two-thirds percent (6 2/3%) royalty on the Mercury Group, under the terms of said Mining Lease and Option of November 23rd, 1949, and for and in consideration of Second Party further agreeing

and covenanting as herein set forth, it is hereby understood and agreed by and between First Party and Second Party, as follows:

I.

ON THE PART OF FIRST PARTY

(1) First Party hereby ASSIGNS, SELLS, TRANSFERS and SETS OVER unto Second Party all of its right, title and interest in and to said Mining Lease and Option dated the 23rd day of November, 1949, TOGETHER WITH its rights to purchase thereunder, insofar as the same pertains and is applicable to, the following described lode mining claims, (and no others,) viz.:

Name of Lode Claims	Jefferson County Record		
	Book	Page	Instrument No.
(1) Boulder Mercury	45	353	55067
(2) Boulder Mercury No. 2	45	391	56286
(3) Boulder Mercury No. 3	45	392	56287
(4) Boulder Mercury No. 4	45	393	58034
(5) East Mercury No. 1			
(6) East Mercury No. 2			
(7) Mercury Connection			
(8) Boulder Mercury No. 5			

and, also, TOGETHER WITH all of the rights, privileges and powers of Second Party under said Mining Lease and Option of the 23rd day of November, 1949, as contained therein, subject, nevertheless, to full and complete performance by Second Party of the terms of said Mining Lease and Option as such terms pertain and are applicable to said eight (8) mining claims (out of the Mercury Group) above described, and the faithful performance by Second Party of its promises, agreements and covenants hereunder.

(2) First Party agrees to cause lessors in said Mining Lease and Option to approve of this Assignment, etc., consent thereto, and join therein, concurrently with the execution and delivery hereof.

(3) First Party agrees to do and perform on its part all promises, covenants and undertakings and all other things required to be done under said Mining Lease and Option by Elkhorn Mining Company, a corporation, and to keep the

said Mining Lease and Option valid and in full force and effect, except that First Party shall not be required to perform, execute or carry out the Agreements, covenants and undertakings, with respect to the said eight (8) lode mining claims, unless Second Party shall default or fail in its covenants so to do, as herein stated, in which event First Party shall have the right to perform, execute and carry out said agreements, promises and undertakings for its own account to the end of keeping said Mining Lease and Option in full force and effect, said Mining Lease and Option being dated November 23rd, 1949.

II.

ON THE PART OF SECOND PARTY

(a) To carry out and perform in each annual labor period all annual labor required by the laws of the United States to keep said eight (8) lode mining claims, and each thereof, in full force and effect as valid locations and claims.

(b) To work said lode mining claims as required by the terms of said Mining Lease and Option and to expend on said eight (8) claims not less than Five Thousand Dollars ($5,000.00) in the aggregate in each twelve-month period during the term of said Lease, and within each lease year. Said expenditures to be made for shifts of mining labor, or for surface or underground improvements or installations, diamond drilling, or other expenses related to ore mining, to mining development, or to preparatory work for mining development or mining, on said eight (8) lode mining claims.

(c) To pay, in addition to and over and beyond the Six and Two-thirds per cent (6 2/3%) royalty to be paid on the eight (8) claims of the Mercury Group as required by said Mining Lease and Option, a further, and perpetual overriding royalty of Three and One-third per cent (3 1/3%) on the net returns from all ores or concentrates milled or shipped and sold directly to a smelter or ore buyer, or buying agent, from said eight (8) claims, and in an amount to equal, and not to be less than, Three and One-third per cent (3 1/3%) of the said net smelter or other treatment plant returns, as the terms "net returns" are defined in said Mining Lease and Option.

(d) Faithfully and punctually to carry out and perform, as respects said eight (8) lode mining claims, all the agreements, promises, undertakings, terms and conditions in said Mining Lease and Option applicable to said eight (8) lode mining claims, as stated in said Mining Lease and Option of November 23rd, 1949, and herein.

(e) To enter into and commence active development work hereunder not later than May 15th, 1951.

IT IS FURTHER MUTUALLY UNDERSTOOD AND AGREED BY AND BETWEEN FIRST PARTY AND SECOND PARTY:

(1) That upon voluntary surrender by Second Party of his rights hereunder, and in accordance with the terms of said Mining Lease and Option, or, in the event of forfeiture under the terms of said Mining Lease and Option, or, in the event of failure or default by Second Party as respects its obligations, or any of them, under this Assignment, etc., Second Party will quietly and peaceably yield up possession of all of said described property, to First Party, and make, execute and deliver written release to First Party of all of Second Party's rights hereunder, for public record for the benefit and advantage of First Party in order that it may preserve and protect its rights and interests under said Mining Lease and Option dated November 23rd, 1949.

(2) That Second Party shall, in the event that he determines to exercise the options to purchase, transferred to him hereby, as respects said eight (8) mining claims (and no other claims described in said Mining Lease and Option dated November 23rd, 1949), pay therefor the sum of Two Hundred Thousand and No/100 Dollars ($200,000.00), in the amounts and at the times scheduled in said Mining Lease and Option, notwithstanding that this Assignment does not relate to or affect, or invest Second Party with any rights to work or to purchase the Carolyn Lode Mining Claim, Certificate of Location of which is recorded in Book 45 of Lode Locations at Page 430, Instrument Number 58034, Records of Jefferson County, Montana, and there shall be no abatement or

decrease in said option price of Two Hundred Thousand Dollars ($200,000.00), herein made applicable to said eight (8) claims, for and on account of the exclusion of said Carolyn Lode from this Assignment and the option rights thereunder.

(3) That this instrument, and all rights of Second Party hereunder, shall be assignable, without restriction, save that any assignee shall take subject to the terms and provisions of said Mining Lease and Option of November 23rd, 1949, and the covenants, agreements, promises and undertakings on the part of Second Party hereunder.

(4) That lessors, in said Mining Lease and Option of November 23rd, 1949, shall endorse their approval of, and consent to, this Assignment, etc., and acknowledge their said approval and consent, at the foot hereof, and that, thereby, they shall be obligated and bound to Second Party as fully and perfectly as if said Mining Lease and Option dated November 23rd, 1949, had named J. I. Listle and assigns as Second Party therein, in the place and stead of Elkhorn Mining Company, a corporation, subject always, to the faithful and punctual performance by the said J. I. Listle and his assigns of said Mining Lease and Option of November 23rd, 1949, and this Assignment, and without waiving any rights of said lessors as respects Elkhorn Mining Company, a corporation, under said Mining Lease and Option.

IN WITNESS WHEREOF, First Party has caused its corporate name to be hereunto affixed, and attested by its duly authorized officers, and Second Party has subscribed his name hereto, this Assignment, etc., being executed in four (4) multiple counter parts, each of which contains (24) pages, including acknowledgments, Approval and Consent and Exhibit "A" hereto attached, of which this is counterpart No. Two (2). Each counterpart hereof shall have full and identical force and effect. The undersigned each acknowledge receipt of one of said counterparts, all on the day first above written.

ATTEST:

ELKHORN MINING COMPANY, a Corporation

J. Dennis
Secretary, Elkhorn Mining Company

By Wade H. Lewis
Its President

(CORPORATE SEAL)

FIRST PARTY

J. I. Listle
SECOND PARTY

STATE OF MONTANA)
) ss.
County of Lewis and Clark)

On this 5th day of December, 1950, before me, the undersigned, a Notary Public in and for the State of Montana, personally appeared Wade V. Lewis and J. T. Lewis, known to me to be the President and Secretary, respectively, of Elkhorn Mining Company, the corporation that subscribed the within "Assignment By Lessee and Optionee of Rights To Described Property", and acknowledged to me that said corporation executed the same.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my Noyarial Seal the day and year in this certificate first above written.

E. J. Toomey

Notary Public for the State of Montana
Residing in Helena, Montana
My Commission expires May 1, 1953.

STATE OF MONTANA)
) ss.
County of Lewis and Clark)

On this 5th day of December, 1950, before me, the undersigned, a Notary Public, personally appeared J. I. Listle, personally known to me to be the person who subscribed the foregoing "Assignment By Lessee and Optionee of Rights to Described Property", and acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my Notarial Seal the day and year in this certificate first above written.

E. J. Toomey

Notary Public for the State of Montana
Residing at Helena, Montana
My Commission expires May 1, 1953.

APPROVAL AND CONSENT OF ASSIGNMENT BY LESSEE AND OPTIONEE OF RIGHTS TO DESCRIBED PROPERTY

We, Sanford R. Davis, Edward C. Miles, Wade V. Lewis and Clyde R. Davis, being the same persons referred to by said names in the foregoing instrument, and being the Parties of the First Part, called Lessors, under the Mining Lease and Option of the 23rd day of November, 1949, have read the foregoing "Assignment By Lessee and Optionee of Rights to Described Property" and fully understand the same, and for and in consideration of the sum of One ($1.00) Dollar to us and each one of us in hand paid by J. I. Listle, Second Party, and Elkhorn Mining Company, a corporation, the receipt of which is hereby acknowledged, and for and in consideration of the said Elkhorn Mining Company, a corporation, and the said J. I. Listle making, executing and delivering and putting in full force and effect, as between them, and the undersigned, said "Assignment By Lessee and Option of Rights to Described Property" hereby approve the same, and consent to the same, in each and every respect, and agree to be bound thereby, as in said "Assignment By Lessee and Option of Rights to Described Property" set forth.

IN WITNESS WHEREOF, we have hereunto subscribed our names this 5th day of December, 1950.

Sanford R. Davis

Edward C Miles

Wade V. Lewis

Clyde R. Davis
by Sanford R. Davis
his attorney in fact,

STATE OF MONTANA)
) ss.
County of Lewis and Clark)

On this 5th day of December, 1950, before me, the undersigned Notary Public, personally appeared Sanford R. Davis, Edward C. Miles, Wade V. Lewis ~~and Clyde R. Davis~~, personally known to me to be the persons who subscribed the foregoing Approval and Consent of Assignment by Lessee and Optionee of Rights to Described Property, etc., and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my Notarial Seal the day and year in this certificate first above written.

E. S. Toomey
Notary Public for the State of Montana
Residing at Helena, Montana
My Commission expires May 1, 1953.

STATE OF MONTANA)
) ss.
County of Lewis and Clark)

On this 5th day of December, 1950, before me, the undersigned Notary Public for the State of Montana, personally appeared Sanford R. Davis, known to me to be the person whose name is subscribed to the within instrument, as attorney-in-fact of Clyde R. Davis, and acknowledged to me that he subscribed the name of the said Clyde R. Davis thereto as principal, and his own name as attorney-in-fact.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my Notarial Seal the day and year in this Certificate first above written.

(SEAL OF SAID NOTARY)

E. S. Toomey
Notary Public for the State of Montana,
Residing at Helena, Montana.
My Commission expires May 1, 1953.

MINING LEASE AND OPTION

THIS AGREEMENT, made and entered into this 23rd day of November, 1949, (which date is referred to herein as "the date of this lease," being the date when this lease was delivered by Lessors to Lessee and when the term of this lease begins) by and between,

SANFORD R. DAVIS, a single man, of Boulder, Jefferson County, Montana,

EDWARD C. MILES, a single man, of Helena, Lewis and Clark County, Montana,

WADE V. LEWIS, of Boulder, Jefferson County, Montana, and

CLYDE R. DAVIS, Box 69, Boulder, Jefferson County, Montana,

PARTIES OF THE FIRST PART, hereinafter called the L E S S O R S;

and

ELKHORN MINING COMPANY, a corporation organized and existing under the laws of the State of Montana, with corporate offices at Boulder, Jefferson County, Montana,

PARTY OF THE SECOND PART, hereinafter called the L E S S E E,

WITNESSETH:

ARTICLE 1. Description of the Property.

That the Lessors, being all of the owners of all the property hereinafter described, for and in consideration of the sum of ONE DOLLAR ($1.00) to them in hand paid by the Lessee, the receipt of which is hereby acknowledged and for and in consideration of the royalties hereinafter reserved and to be paid by the Lessee, and of the covenants and agreements of the Lessee hereinafter contained and by the Lessee to be kept and performed, DO HEREBY LET AND DEMISE AND GIVE AND GRANT unto the said Lessee, its successors and assigns all of the following described unpatented quartz lode mining claims, lying and being in the Boulder Mining District (unorganized) in the County of Jefferson, State

of Montana, to-wit:

	NAME	Book	Page	Instrument No.
(a)	Silver Bell			65383
(b)	New Era			65386
(c)	Free Enterprise			65385
(d)	Free Enterprise: No. 1			65498
(e)	Free Enterprise: No. 2			65499
(f)	Free Enterprise: No. 3			65500
(g)	Free Enterprise: No. 4			65456
(h)	Free Enterprise: No. 5			65455
(i)	Free Enterprise: No. 6			65457
(j)	Free Enterprise: No. 7			65458

The above named claims being owned jointly by Sanford R. Davis, Edward C. Miles and Wade V. Lewis.

(k)	Powderhouse	45	609	65624
(l)	Big-J	45	611	65629
(m)	Depot	45	610	65625

The above theee mentioned claims are owned jointly by Wade V. Lewis and Sandord R. Davis. All of above claims hereinafter called Free Enterprise Group.

(n)	Carolyn	45	430	58034
(o)	Boulder Mercury	45	353	55067
(p)	Boulder Mercury No. 2	45	391	56286
(q)	Boulder Mercury No. 3	45	392	56287
(r)	Boulder Mercury No. 4	45	393	58034
(s)	East Mercury No. 1			
(t)	East Mercury No. 2			
(u)	Mercury Connection			
(v)	Boulder Mercury No. 5			

The last above mentioned group of claims hereinafter called the Mercury Group being owned by Sanford R. Davis and Clyde R. Davis or Sanford Davis alone, all being one contiguous group of adjoining quartz lode mining claims and situated in Sections 19 and 20 of Township 6 North, Range 4 West, M.P.M., Jefferson County, Montana.

ARTICLE 2. Terms of Lease.

TO HAVE AND TO HOLD all of said property unto the said Lessee, its successors and assigns for the full term of thirty(30) years from the date hereof first above written, expiring at noon on the 23rd day of November 1979, unless sooner forfeited or determined through the violation of any of the covenants herein contained and against the Lessee reserved, or unless sooner cancelled, terminated or surrendered.

ARTICLE 3. Ownership and Right to Lease.

The Lessors hereby covenant that they are the true and lawful owners of all of the said leased property however described or referred to, and that the leased property and thw whole thereof is free and clear from any and all encumbrances, liens and debts whatsoever, and that the Lessors have good and absolute right to lease and dispose of the said property, and all thereof, in the manner and form as herein set forth, exception and reference being made to whatever interest the U. S. Government may claim in such unpatented mining claims, and in addition such interestes as may exist upon lands covered by United States patents only, with mineral rights reserved for location under the U. S. Mining Laws.

ARTICLE 4. Possession and Control of Property.

The Lessee shall have and it is hereby given and granted the right to enter into and take over immediately the sole and exclusive possession and control of said property and the whole and

every part thereof, and during the term of this lease and option, to remain in the sole and exclusive possession and control thereof, and to investigate, measure, sample, examine, test, develop, work, mine, operate, manage and control the same and the water and water rights appurtenant thereto, and to mine, extract and remove from said property the ores and minerals therein and appurtenant and belonging thereto, and to treat, mill, ship, sell or otherwise dispose of the same and receive the full proceeds therefrom, subject to the royalties hereinafter reserved.

ARTICLE 5. Entry, Manner of Work and Conformity.

In consideration of such Lease, the Lessee covenants and agrees to enter upon and take possession of all said leased property at the date of this lease, and to cause all work, development and mining to be done in a careful and minerlike manner, and to conform in all respects to and with the mining laws and regulations of the State of Montana.

ARTICLE 6. Work Requirements.

Lessee agrees to work said leased property as aforesaid and to expend thereon not less than Five Thousand Dollars ($5,000.00) in each twelve-month period during the term of this lease, and within each lease year. Said expenditures to be made for shifts of mining labor, or for surface or underground improvements or installations, diamond drilling, or other expenses related to ore mining, to mining development, or to preparatory work for mining development or mining.

ARTICLE 7. Royalties.

Raoyalties on all ores or concentrates milled or shipped and sold directly to a smelter or ore buyer, or buying agent, shall be an amount equal to Ten Per Cent (10%) of the net smelter or other treatment plant returns. "Net returns" shall be all sums

paid to the Lessee for the values of the ores, or products thereof, by a smelter, licensed buying agent, or government agency, after deducting all charges for truck and railroad transportation, smelter charges, reduction chages, milling charges, and all charges for control and umpire assaying, on the Free Enterprise Group, and 6 2/3% royalty on the Mercury Group determined in the same manner as above provided for the Free Enterprise Group royalties.

ARTICLE 8. Division and Remittance of Royalties.

The royalty payments to be made by the Lessee under the terms of this agreement shall be payable by the remitting smelter or other agency to the Union Bank and Trust Company of Helena, Montana, and by said bank distributed as the interests of the respective owners may then appear, and pursuant to directions by such owners, provided, however that said royalties shall be remitted monthly and for each and every calendar month on or before the 25th day of the succeeding calendar month.

ARTICLE 9. Protection from Liens and DAmages.

The Lessee shall keep said property and the whole and every part thereof free and clear of liens for labor done or performed upon said property or materials furnished to it, on or for said property, or for the development or operation thereof under this lease and while the same is in force and effect, and will save and keep harmless the Lessors from all costs, loss or damage which may arise by reason of injury to any persons, livestock or other property as the result of any work or operations of the Lessee or its possession and occupancy of the property.

ARTICLE 10. Notices of Non-Liability.

Lessee agrees to post or cause to be posted in three (3) of the most public places upon the said leased property a notice to the effect that the said property is being worked and operated by Elkhorn Mining Company, a corporation, its successors or assigns,

under an agreement of lease with the Owners and that the Lessee is in actual control and management of the said operations, and that neither the Lessors nor their said property shall be in any way liable for labor, supplies, or any other debts contracted by the Lessee, its officers or agents or its successors and assigns, in connection with said operations.

ARTICLE 11. Inspection by Lessors or Representatives of Lessors.

Lessee agrees to allow said Lessors, or any of them, and their duly authorized agents and representatives, at their own cost, expense, and their own risk, to enter upon the said leased property, or any part thereof, at any and all reasonable times for the purpose of examining the condition of same, and to sample and assay the ore, mill heads, tails, and concentrates; and the Lessors shall have the right to keep one or more representative at all times upon said property, but always at the sole cost, risk and expense of said Lessors.

ARTICLE 12. Payment of Taxes, Respective Liability of Lessors, and Lessee.

Lessors shall pay when due and before delinquent, all taxes upon all the real property and upon the improvements owned by Lessors upon all the real property, during the full term of this lease, and Lessors ahll pay all taxes of whatever nature or description on their receipt of royalties, and Lessee shall not be in any respect liable for taxes on any royalties paid to Lessors.

The Lessee shall pay when due and before delinquent, all taxes upon any and all personal property, machinery and equipment placed upon said property by the Lessee during the term of this Lease. The Lessee shall also pay all sales taxes, net proceeds, occupation, output, severance or production taxes, and license taxes of every kind, character and description levied upon or measured by ores or minerals extracted by Lessee from said premises during the term of this Lease, and all taxes levied against the

Lessee as an employer of labor, all such taxes to be promptly paid when due and before delinquent. Each, the Lessors and the Lessee, upon the payment of taxes, shall promptly furnish the other with satisfactory evidence of such payment.

ARTICLE 13. Workmen's Compensation Act.

The Lessee shall carry at all times during the term of this lease, effective coverage for all its operations and all employees in said operations under this lease, under one of the authorized Plans of the Workmen's Compensation Act of Montana, and such liabilitiy and other insurance required by the laws and mining regulations of the State of Montana.

ARTICLE 14. Books of Account.

The Lessee shall keep accurate and informative books of account relating to the milling, sale and disposal of ores, minerals, concentrates or other products from said property, and the marketed metal content of the same, which books of account shall be open to inspection by the Lessors or their duly authorized agent at all reasonable times.

ARTICLE 15. Lessee's Equipment to Remain Personal Property Removable by Lesee: Exception as to Timbering.

I it mutually understood and specifically agreed by and between Lessors and Lessee that any and all machinery, equipment, implements, devices, rails, pipes, piping and tools of whatever nature that have been or may hereafter be place in and upon said leased property, or any part thereof for any purpose by the Lessee, or the successors and assigns of the Lessee, shall be and remain the property of the Lessee and shall not, however affixed to the land or improvements, become a part of the realty or real estate, or a fixture or fixtures, and that all thereof shall be personal property, removable by Lessee, and may be removed from the realty by Lessee or its successors or assigns at any time prior to

the expiration of the termination of this lease or at any time within six (6) months after either of such events (see Article 20); PROVIDED, HOWEVER, that all timbering in place in any shafts, drifts, tunnels, or other underground workings shall remain in and upon the premises and become a part thereof, and Lessee shall not remove any of said timbering.

ARTICLE 16. Forfeiture Clause.

The failure of the Lessee to make or cause to be made any payment herein provided for, or to keep or perform any agreement on its part to be kept and performed according to the terms and provisions hereof shall, at the election of such of the Lessors as represent a majority interest in the leased property, work a forfeiture hereof, and any and all moneys which shall have been paid by Lessee to the Lessors as royalties, or otherwise, shall be deemed forfeited to the Lessors; PROVIDED, HOWEVER, that in the event of a default on the part of the Lessee, and the election of a majority of the Lessors, as aforesaid, to terminate this lease on account thereof, a majority of the Lessors as aforesaid, shall give to the Lessee a written notice of their intention to declare a forefeiture of this lease and to terminate the same on account of said default, specifying the particular default or defaults relied upon by them, and the Lessee shall have thirty (30) days after the receipt of such written notice from a majority of said Lessors in which to make good such default or defaults, in which event there shall be no forfeiture therefor. A waiver by the Lessors, or any of them, of a particular breach of any covenant or agreement shall not be deemed or held to be a waiver of, or affect any other breach or impair their rights resulting therefrom.

ARTICLE 17. Unavoidable Delays.

If the Lessee shall be delayed at any time in keeping or performing any agreement on its part to be kept or performed accord-

ing to the terms and provisions hereof, by any act or neglect of the Lessors, or by strikes or lockouts either in the mine or reduction works, fire, unusual delay in transportation, orders of the Government, or any duly constituted instrumentality thereof, unavoidable casualties, or any causes beyond the control of the Lessee, such delay shall not be deemed a breach of this lease or a default on the part of the Lessee constituting a cause for forfeiture of this lease and option, and during any time said Lessee is so delayed, it shall be excused from the performance of the work requirements specified in Article 6 hereof until the cause of the delay is removed.

ARTICLE 18 Additional Work Requirements.

The Lessee agrees on or before June 1st, 1950 to start on the Mercury Group, development work consisting of either cross cut, tunnel or shaft, that will attain a depth of at least 100 feet below the outcrop on the surface of this group of claims, all of such work to be done at the place or places selected by the Lessee, its successors and assigns. All of such development work shall be based on geological study or prospecting or other exploration work whichever in the judgment of the Lessee, its successors and assigns is the most likely point. If work ceases for a period of 90 days on said groups of claims as required herein then said claims will be released to the Lessors and this lease will end. If there are any conflicting provisions herein with this article, then these provisions shall prevail over such conflicting provisions if any.

ARTICLE 19. Cancellation by Lessee.

A. Notice.

The Lessee expressly reserves the right to cancel, terminate and surrender this lease and to relinquish and surrender said property to the Lessors at any time during the term hereof by giving the Lessors written

Notice of its intention to do so thirty (30) days prior to the termination date.

B. Written Relinquishment.

On or before the termination date specified in the notice of intention to cancel, the Lessee shall deliver to the Lessors a written relinquishment of this lease.

C. Release for Record.

Upon termination of this lease by expiration of its thirty (30) year term, or termination prior thereto without liability on the part of the Lessors to Lessee, Lessee will make, execute and acknowledge a good and sufficient release of this lease for recording in the office of the County Clerk of Jefferson, Montana

ARTICLE 20. Surrender of Property.

In the event of a valid forfeiture, surrender or other termination of this lease, the Lessee will surrender peaceable possession of said property and the whole and every part thereof to the Lessors, and Lessors may take immediate possession thereof.

ARTICLE 21. Removal of Machinery and Equipment, etc. by Lessee.

The Lessee shall have, and it is hereby given and granted six (6) months after a valid forfeiture, surrender or other termination of this lease to remove from said property, all warehouse stocks, merchandise, materials, tools, hoists, compressors, engines, motors, pumps, transformers, electrical accessories, metal or wooden tanks, pipes and connections, mine cars and any and all other machinery, equipment, implements, devices and tools, railways and rails erected or place in or upon said property by it, together with all ore broken in the stopes or workins, except mine timbers in place and permanent dwellings or structures for housing personnel or machinery, and which dwellings or structures are permanently affixed to the realty.

ARTICLE 22. Notices.

All notices herein provided for may be given by mail at the following addresses until otherwise changed by written request

of the parties:

TO THE LESSOR:

At their respective addresses as the same appear on Page 1 hereof.

TO THE LESSEE:

Elkhorn Mining Company, Boulder, Montana

ARTICLE 23. Voluntary Surrender of the Lease.

The Lessee or its assigns may at any time surrender this lease upon the tender to the Lessors of a Quit Claim or release of the above and within described property and the payment of One Dollar ($1.00) to each of said Lessors, and thereafter the Lessee, its successors and assigns will be released from the performance of any further obligation under this lease thereafter accruing, but shall not be released of any existing obligations theretofore not completely performed and the Lessee shall have the right to remove its property within the terms and provisions of this lease elsewhere provided.

ARTICLE 24 Lessee Has First Right to Purchase Leased Property on Terms Not less Favorable Than Offered to any Buyer.

Lessors agree and covenant with Lessee that in the event all of the Lessors desire and elect to sell the leased property at any time within the thirty (30) year term of this lease, or at the expiration of the thirty (30) year term of this lease, or at the termination thereof, Lessee shall have the first right and privilege, and the continuing preferential right and privilege, over all others to purchase all of the leased property upon the same terms as may be offered by Lessors to any buyer, or upon terms not less favorable than may be offered to, or by, any buyer. Each Lessor herein individually agrees for himself or herself, and for the undivided interest in and to all the leased property individually owned at any time within the thirty (30) year term of this lease, or at the expiration of the thirty (30) year term

of this lease, or at the termination thereof, Lessee shall have the first right and privilege, and the continuing preferential right and privilege over all others to purchase such undivided interest upon the terms as may be offered by Lessors to any buyer, or upon terms not less favorable than may be offered to or by any buyer.

And in consideration of the acceptance of the foregoing lease and the expenditures to be made thereunder and the well and faithful keeping of the covenants thereof, the said Lessee, its successors or assigns shall have the right to p urchase the said demised premises by the payment of the sum of $150,000.00 to Sanford R. Davis, and a like sum of $150,000.00 to Edward C. Miles as the purchase price for the Free Enterprise Group, and the further sum of $200,000.00 to Sanford Davis and Clyde R. Davis as the purchase price for the Mercury Group, during the term of this lease, all royalties theretofore paid to any of the owners of these leased premises shall be deducted from such purchase price and the purchase price to all said owners shall be payable annually in fifteen (15) equal installments after allowing credit for any royalty theretofore paid. Said annual payments to be payable on the anniversary of the date of the notice to exercise said option given to the owners by the Lessee or its assigns and upon the giving of notice that the Lessee exercise this option within thirty (30) days thereafter the Lessors will make, execute, acknowledge and deliver at their own costs and charges, good and sufficient deed or deeds of warranty as against everybody but the United States of America to be delivered into escrow in the Union Bank and Trust Company of Helena, Montana, to be held until the final payment is made on the purchase price of the above described lands and premises, Such conveyance shall convey the said premises clear of encumbrances except such as might be placed thereon by the Lessee or its successors and assigns.

The forfeiture, surrender or termination of the above lease for any cause shall render this option void and the above mentioned payments may not thereafter be tendered, and the failure to make such payments shall at the option of the Lessors render said option forfeited and void.

If the Lessee its successors and assigns so desires it may exercise the above option to purchase either the Free Enterprise Group of claims or the Mercury Group of claims without exercising the option as to the other group, and if the Lessee, its successors or assigns exercise this option as to one of these groups only then this lease and option to purchase shall continue according to its terms as to the other group.

ARTICLE 25. Litigation.

In case any litigation arises, whether actual, pending or threatened, in relation to the herein leased mining property and premises, Lessee agrees immediately after receiving notice of the same, to notify each of said Lessors concerning same, with view to giving all Lessors the privilege of aiding and supporting Lessee in such action, and of defending themselves and their interests against any such litigation.

ARTICLE 26. Law of Lease.

All of the property which is the subject of this lease being situate and lying in Jefferson County, Montana, and this lease being delivered in the State of Montana, Lessors and Lessee agree and stipulate that this lease shall be construed under the laws of the State of Montana, and said laws are hereby designated as the laws applicable to this lease.

ARTICLE 27. Bonus or Awards.

Any Bonus or reward for the discovery of any ores on any of the claims among the Free Enterprise Group shall be paid to or divided equally between Sanford R. Davis, Edward C. Miles and Wade

V. Lewis and like bonuses or rewards for discovery of ores on Mercury Group shall be paid to Sanford R. Davis alone.

ARTICLE 28, Inurement.

The tems, provisions, covenants, and agreements herein contained shall extend to, be binding upon and inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the Lessors have each subscribed their respective names hereto, and the Lessee has caused its corporate name to be hereunto affixed and attested by its duly authorized officers (executing this lease in four (8) multiple originals, containing 17 pages each, including acknowledgements, of which this is Original No. 4, as of the day and year first above written.

/s/ Sanford R. Davis
Principal

By _____
Attorney in fact for said Sanford R. Davis

/s/ Edward C. Miles
Principal

By _____
Attorney in fact for said Edward C. Miles

/s/ Clyde R. Davis
Principal

By Sanford R. Davis
Attorney in fact for said Clyde R. Davis

/s/ Wade V. Lewis
Principal

By _____
Attorney in fact for said Wade V. Lewis

L E S S O R S

ELKHORN MINING COMPANY, a corporation

By /s/ Wade V. Lewis
Its President
Hereto specifically authorized and empowered.

ATTEST:

J. T. Lewis /s/
Secretary

L E S S E E

STATE OF MONTANA)
: ss
County of Lewis and Clark)

On this 23rd day of November, 1949, before me, the undersigned Notary Public in and for the State of Montana, personally appeared WADE V. LEWIS, to me personally known, who, being by me duly sworn, did say:

That he is the President of Elkhorn Mining Company, a corporation, party to and described in the foregoing instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by him, the said President, as such President by authority of said corporation, and said Wade V. Lewis acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal upon the day and year in this Cerificate first above written.

/s/ Ralph J. Anderson
Notary Public for the State of Montana
Residing at Helena, Montana
My Commission expires Jan 29, 1950

(SEAL)

STATE OF MONTANA)
: ss
County of Lewis and Clark)

On this 23rd day of November, 1949, before me, the undersigned Notary Public in and for the State of Montana, personally appeared SANFORD R. DAVIS for himself, and SANFORD R. DAVIS, known to me to be the same person whose name is subscribed to the within instrument as Attorney in Fact for Clyde R. Davis of Boulder, Jefferson County, Montana, and the said Sanford R. Davis acknowledged to me that he subscribed his name to said instrument for himself, and the said Sanford R. Davis acknowledged to me that he subscribed the name of Clyde R. Davis, as principal, and his own name as Attorney in Fact for said Principal; and also before me, the undersigned Notary Public in and for the State of Montana, personally appeared WADE V. LEWIS, known to me to be the same person whose name is subscribed to the within instrument, as principal.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal upon the day and year in this Certificate, first above written.

/s/ Ralph J. Anderson
Notary Public for the State of Montana
Residing at Helena, Montana
My Commission expires Jan. 29, 1950

(SEAL)

67140

RECORDED

INDEXED

PACKAGED

RECORDER'S OFFICE
STATE OF MONTANA }
COUNTY OF JEFFERSON } SS

I hereby certify that the within instrument was filed for record this 7 day of December A. D. 1966 at 3:30 o'clock P.M. and is duly recorded in book 5 of Misc. on page 596.

/s/ [illegible] M. Pawson
County Recorder

Fee $10.50

ASSIGNMENT BY LESSEE AND OPTIONEE

OF

RIGHTS TO DESCRIBED PROPERTY

THIS AGREEMENT, made and entered into this 5th day of December, 1950, by and between ELKHORN MINING COMPANY, a corporation organized and existing under the laws of the State of Montana, with corporate offices at Boulder, Jefferson County, Montana, herein called FIRST PARTY, and J. I. LISTLE, whose address is 3950 West Eighth Street, Los Angeles, California, hereinafter called SECOND PARTY, WITNESSETH:

That First Party is the party of the Second Part and Lessee in and under that certain written Mining Lease and Option, dated the 23rd. day of November, 1949, wherein Sanford R. Davis, a single man, of Boulder, Jefferson County, Montana, Edward C. Miles, a single man, of Helena, Lewis and Clark County, Montana, Wade V. Lewis of Boulder, Jefferson County, Montana, and Clyde R. Davis, P. O. Box 69, Boulder, Jefferson County, Montana, are Parties of the First Part and Lessors, a true copy of said Mining Lease and Option being hereto annexed, marked Exhibit A, and by this reference made a part of this Assignment, and said Mining Lease and Option is, at the date hereof in full force and effect, and First Party specifically represents that all of its rights as lessee and optionee under said Mining Lease and Option are valid, operative and effective at this time, and that First Party has the right to make and enter into this Assignment; and

Said Mining Lease and Option embraces two (2) groups of mining claims, the first group consisting of thirteen (13) Lode mining claims known as the Free Enterprise Group, and the second group comprises eight (8) lode mining claims known as the Mercury Group, and Second Party is desirous of securing for himself and his assigns all of the right, title and interest of

said lessors in and to the following described eight (8) claims of said Mercury Group, viz.:

Name of Lode Claims	Jefferson County Record		
	Book	Page	Instrument No.
(1) Boulder Mercury	45	353	55067
(2) Boulder Mercury No. 2	45	391	56286
(3) Boulder Mercury No. 3	45	392	56287
(4) Boulder Mercury No. 4	45	393	58034
(5) East Mercury No. 1			
(6) East Mercury No. 2			
(7) Mercury Connection			
(8) Boulder Mercury No. 5			

subject, nevertheless, to full and complete performance by Second Party of all and singular the terms, provisions, conditions and covenants of said Mining Lease and Option, dated November 23rd, 1949, and said lessors under said Mining Lease and Option to-wit, said Sanford H. Davis, Edward C, Miles, Wade V. Lewis and Clyde H. Davis, and said lessee under said Mining Lease and Option, to-wit, Elkhorn Mining Company, are willing that Second Party shall have and secure all of the right, title and interest of Elkhorn Mining Company in and to said eight (8) claims in said Mercury Group, in consideration of the execution of this Assignment for the benefit of said lessors and said lessee under said Mining Lease and Option of November 23rd, 1949, and upon performance by Second Party hereunder of all of the obligations of Elkhorn Mining Company, a corporation, applicable to said eight (8) claims, as in said Mining Lease and Option of November 23rd, 1949 set forth, and as herein set forth.

NOW, THEREFORE, for and in consideration of the sum of One Dollar ($1.00) in hand paid by Second Party to First Party, the receipt of which is hereby acknowledged by First Party, and for and in consideration of the overriding royalty to be paid by Second Party hereunder, in addition to the Six and two-thirds percent (6 2/3%) royalty on the Mercury Group, under the terms of said Mining Lease and Option of November 23rd, 1949, and for and in consideration of Second Party further agreeing

and covenanting as herein set forth, it is hereby understood and agreed by and between First Party and Second Party, as follows:

I.

ON THE PART OF FIRST PARTY

(1) First Party hereby ASSIGNS, SELLS, TRANSFERS and SETS OVER unto Second Party all of its right, title and interest in and to said Mining Lease and Option dated the 23rd. day of November, 1949, TOGETHER WITH its rights to purchase thereunder, insofar as the same pertains and is applicable to, the following described Lode mining claims, (and no others,) viz.:

Name of Lode Claims	Jefferson County Record		
	Book	Page	Instrument No.
(1) Boulder Mercury	45	353	55067
(2) Boulder Mercury No. 2	45	391	56286
(3) Boulder Mercury No. 3	45	392	56287
(4) Boulder Mercury No. 4	45	393	58034
(5) East Mercury No. 1			
(6) East Mercury No. 2			
(7) Mercury Connection			
(8) Boulder Mercury No. 5			

(

and, also, TOGETHER WITH all of the rights, privileges and powers of Second Party under said Mining Lease and Option of the 23rd. day of November, 1949, as contained therein, subject nevertheless, to full and complete performance by Second Party of the terms of said Mining Lease and Option as such terms pertain and are applicable to said eight (3) mining claims (out of the Mercury Group) above described, and the faithful performance by Second Party of its promises, agreements and covenants hereunder.

(2) First Party agrees to cause lessors in said Mining Lease and Option to approve of this Assignment, etc., consent thereto, and join therein, concurrently with the execution and delivery hereof.

(3) First Party agrees to do and perform on its part all promises, covenants and undertakings and all other things required to be done under said Mining Lease and Option by Elkhorn Mining Company, a corporation, and to keep the

said Mining Lease and Option valid and in full force and effect, except that First Party shall not be required to perform, execute or carry out the Agreements, covenants and undertakings, with respect to the said eight (8) lode mining claims, unless Second Party shall default or fail in its covenants so to do, as herein stated, in which event First Party shall have the right to perform, execute and carry out said agreements, promises and undertakings for its own account to the end of keeping said Mining Lease and Option in full force and effect, said Mining Lease and Option being dated November 23rd, 1949.

II.

ON THE PART OF SECOND PARTY

(a) To carry out and perform in each annual labor period all annual labor required by the laws of the United States to keep said eight (8) lode mining claims, and each thereof, in full force and effect as valid locations and claims.

(b) To work said lode mining claims as required by the terms of said Mining Lease and Option and to expend on said eight (8) claims not less than Five Thousand Dollars ($5,000.00) in the aggregate in each twelve-month period during the term of said Lease, and within each lease year. Said expenditures to be made for shifts of mining labor, or for surface or underground improvements or installations, diamond drilling, or other expenses related to ore mining, to mining development, or to preparatory work for mining development or mining, on said eight (8) lode mining claims.

(c) To pay, in addition to and over and beyond the Six and Two-thirds per cent (6 2/3%) royalty to be paid on the eight (8) claims of the Mercury Group as required by said Mining Lease and Option, a further and perpetual overriding royalty of Three and One-third per cent (3 1/3%) on the net returns from all ores or concentrates milled or shipped and sold directly to a smelter or ore buyer, or buying agent, from said eight (8) claims, and in an amount to equal, and not to be less than, Three and One-third per cent (3 1/3%) of the said net smelter or other treatment plant returns, as the terms "net returns" are defined in said Mining Lease and Option.

(d) Faithfully and punctually to carry out and perform, as respects said eight (8) lode mining claims, all the agreements, promises, undertakings, terms and conditions in aid Mining Lease and Option applicable to said eight (8) lode mining claims, as stated in said Mining Lease and Option of November 23rd, 1949, and herein.

(e) To enter into and commence active development work hereunder not later than May 15th., 1951.

IT IS FURTHER MUTUALLY UNDERSTOOD AND AGREED BY AND BETWEEN FIRST PARTY AND SECOND PARTY:

(1) That upon voluntary surrender by Second Party of his rights hereunder, and in accordance with the terms of said Mining Lease and Option, or, in the event of forfeiture under the terms of said Mining Lease and Option, or, in the event of failure or default by Second Party as respects its obligations, or any of them, under this Assignment, etc., Second Party will quietly and peaceably yield up possession of all of said described property, to First Party, and made, execute and deliver written release to First Party of all of Second Party's rights hereunder, for public record for the benefit and advantage of First Party in order that it may preserve and protect its rights and interests under said Mining Lease and Option dated November 23rd, 1949.

(2) T hat Second Party shall, in the event that he determines to exercise the options to purchase, transferred to him hereby, as respects said eight (8) mining claims (and no other claims described in said Mining Lease and Option dated November 23rd, 1949), pay therefor the sum of Two Hundred Thousand and No/100 Dollars ($200,000.00), in the amounts and at the times scheduled in said Mining Lease and Option, not withstanding that this Assignment does not relate to or affect, or invest Second Party with any rights to work or to purchase the Carolyn Lode Mining Claim, Certificate of Location of which is recorded in Book 45 of Lode Locations at Page 430, Instrument Number 58034, Records of Jefferson County, Montana, and there shall be no abatement or

herein made applicable to said eight (8) claims, for an on account of the exclusion of said Carolyn Lode from this Assignment and the option rights thereunder.

(3) That this instrument, and all rights of Second Party hereunder, shall be assignable, without restriction, save that any assignee shall take subject to the terms and provisions of said Mining Lease and Option of November 23rd, 1949, and the covenants, agreements, promises and undertakings on the part of Second Party hereunder.

(4) That Lessors, in said Mining Lease and Option of November 23rd, 1949, shall endorse their approval of, and consent to, this Assignment, etc., and acknowledge their said approval and consent, at the foot hereof, and that, thereby, they shall be obligated and bound to Second Party as fully and perfectly as if said Mining Lease and Option dated November 23rd, 1949, had named J. I. Listle and assigns as Second Party therein, in the place and stead of Elkhorn Mining Company, a corporation, subject always, to the faithful and punctual performance by the said J. I. Listle and his assigns of said Mining Lease and Option of November 23rd, 1949, and this Assignment, and without waiving any rights of said lessors as respects Elkhorn Mining Company, a corporation, under said Mining Lease and Option.

IN WITNESS WHEREOF, First Party has caused its corporate name to be hereunto affixed, and attested by its duly authorized officers, and Second Party has subscribed his name hereto, this Assignment, etc., being executed in four (4) multiple counter parts, each of which contains 24) pages, including acknowledgments, Approval and Consent and Exhibit "A" hereto attached, of which this is counterpart No. one (1). Each counterpart hereof shall have full and identical force and effect. The undersigned each acknowledge receipt of one of said counterparts, all on the day first above written.

ATTEST:

/s/ J. T. Lewis
Secretary, Elkhorn Mining Company

(CORPORATE SEAL)

ELKHORN MINING COMPANY, a Corporation

By /s/ Wade V. Lewis
Its President

FIRST PARTY

/s/ J. I. Listle
SECOND PARTY

STATE OF MONTANA)
: ss.
County of Lewis and Clark)

On this 5th. day of December, 1950, before me, the undersigned, a Notary Public in and for the State of Montana, personally appeared Wade V. Lewis and J. T. Lewis, known to me to be the President and Secretary, respectively, of Elkhorn Mining Company, the corporation that subscribed the within "Assignment by Lessee and Optionee of Rights to Described Property", and acknowledged to me that said corporation executed the same.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my Notarial Seal the day and year in this certificate first above written.

/s/ E. G. Toomey
Notary Public for the State of Montana
Residing in Helena, Montana
My Commission expires May 1, 1953

(SEAL)

STATE OF MONTANA)
) ss.
County of Lewis and Clark)

On this 5th. day of December, 1950, before me, the undersigned, a Notary Public, personally appeared J. I. Listle, personally known to me to be the person who subscribed the foregoing "Assignment by Lessee and Optionee of Rights to Described Property", and acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my Notarial Seal the day and year in this certificate first above written.

/s/ E. G. Toomey
Notary Public for the State of Montana
Residing at Helena, Montana
My Commission expires May 1, 1953

(SEAL)

APPROVAL AND CONSENT OF ASSIGNMENT BY LESSEE AND OPTIONEE OF RIGHTS TO DESCRIBED PROPERTY

We, Sanford R. Davis, Edward C. Miles, Wade V. Lewis and Clyde R. Davis, being the same persons referred to by said names in the foregoing instrument, and being the Parties of the First Part, called Lessors, under the Mining Lease and Option of the 23rd. day of November, 1949, have read the foregoing "Assignment by Lessee and Optionee of Rights to Described Property" and fully understand the same, and for and in consideration of the sum of One ($1.00) Dollar to us and each one of us in hand paid by J. I. Listle, Second Party, and Elkhorn Mining Company, a corporation, the receipt of which is hereby acknowledged, and for and in consideration of the said Elkhorn Mining Company, a corporation, and the said J. I. Listle making, executing and delivering and putting in full force and effect, as between them, and the undersigned, said "Assignment by Lessee and Option of Rights to Described Property" hereby approve the same, and consent to the same, in each and every respect, and agree to be bound thereby, as in said "Assignment by Lessee and Option of Rights to Described Property" set forth.

IN WITNESS WHEREOF, we have hereunto subscribed our names this 5th day of December, 1950.

/s/ Sanford R. Davis

/s/ Edward C. Miles

/s/ Wade V. Lewis

/s/ Clyde R. Davis
~~by Sanford R. Davis~~
His Attorney in fact.

STATE OF MONTANA)

County of Lewis and Clark) ss

On this 5th day of December, 1950, before me, the undersigned Notary Public, personally appeared Sanford R. Davis, Edward C. Miles, Wade V. Lewis, personally known to me to be the persons who subscribed the foregoing Approval and Consent of Assignment by Lessee and Optionee of Rights to Described Property, etc., and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my Notarial Seal the day and year in this certificate first above written.

(SEAL)

/s/ E. G. Toomey
Notary Public for the State of Montana
Resideing at Helena, Montana
My Commission expires May 1, 1953

STATE OF MONTANA)
) ss.
County of Lewis and Clark)

On this 5th day of December, 1950, before me, the undersigned Notary Public for the State of Montana, personally appeared Sanford R. Davis, known to me to be the person whose name is subscribed to the within instrument, as attorney-in-fact of Clyde R. Davis, and acknowledged to me that he subscribed the name of the said Clyde R. Davis thereto as principal, and his own name as attorney-in-fact.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my Notarial Seal the day and year in this Certificate first above written.

/s/ E. G. Toomey
Notary Public for the State of Montana
Residing at Helena, Montana.
My Commission expires May 1, 1953

(SEAL OF)
(SAID)
(NOTARY)

MINING LEASE AND OPTION

THIS AGREEMENT, made and entered into this 23rd. day of November, 1949, (which date is referred to herein as "the date of this lease," being the date when this lease was delivered by Lessors to Lessee and when the term of this lease begins) by and between,

SANFORD R. DAVIS, a single man, of Boulder, Jefferson County, Montana,

EDWARD C. MILES, a single man, of Helena, Lewis and Clark County, Montana,

WADE V. LEWIS, of Boulder, Jefferson County, Montana, and

CLYDE R. DAVIS, Box 69, Boulder, Jefferson County, Montana,

PARTIES OF THE FIRST PART, hereinafter called the L E S S O R S;

and

ELKHORN MINING COMPANY, a corporation organized and existing under the laws of the State of Montana, with corporate offices at Boulder, Jefferson County, Montana,

PARTY OF THE SECOND PART, hereinafter called the L E S S E E;

WITNESSETH:

ARTICLE 1. Description of the Property.

That the Lessors, being all of the owners of all the property hereinafter described, for and in consideration of the sum of ONE DOLLAR($1.00) to them in hand paid by the Lessee, the receipt of which is hereby acknowledged and for and in consideration of the royalties hereinafter reserved and to be paid by the Lessee, and of the covenants and agreements of the Lessee hereinafter contained and by the Lessee to be kept and performed, DO HEREBY LET AND DEMISE AND GIVE AND GRANT unto the said Lessee, its successors and assigns all of the following described unpatented quartz lode mining claims, lying and being in the Boulder Mining District (unorganized) in the County of Jefferson, State

of Montana, to-wit:

	NAME	Book	Page	Instrument No.
(a)	Silver Bell			65383
(b)	New Era			65386
(c)	Free Enterprise			65385
(d)	Free Enterprise: No. 1			65498
(e)	Free Enterprise: No. 2			65499
(f)	Free Enterprise: No. 3			65500
(g)	Free Enterprise: No. 4			65456
(h)	Free Enterprise: No. 5			65455
(i)	Free Enterprise: No. 6			65457
(j)	Free Enterprise: No. 7			65458

The above named claims being owned jointly by Sanford R. Davis, Edward C. Miled and Wade V. Lewis.

(k)	Powderhouse	45	609	65624
(l)	Big-J	45	611	65629
(m)	Depot	45	610	65625

The above three mentioned claims are owned jointly by Wade V. Lewis and Sanford R. Davis. All of above claims hereinafter called Free Enterprise Group.

(n)	Carolyn	45	430	58034
(o)	Boulder Mercury	45	353	55067
(p)	Boulder Mercury No. 2	45	391	56286
(q)	Boulder Mercury No. 3	45	392	56287
(r)	Boulder Mercury No. 4	45	393	53034
(s)	East Mercury No. 1			
(t)	East Mercury No. 2			
(u)	Mercury Connection			
(v)	Boulder Mercury No. 5			

The last above mentioned group of claims hereinafter called the Mercury Group being owned by Sanford R. Davis and Clyde R. Davis or Sanford Davis, alone, all being one contiguous group of adjoining quartz lode mining claims and situated in Sections 19 and 20 of Township 6 North, Range 4 West, MP.M., Jefferson County, Montana.

ARTICLE 2. Terms of Lease.

TO HAVE AND TO HOLD all of said property unto the said Lessee, its successors and assigns for the full term of thirty (30) years from the date hereof first above written, expiring at noon on the 23rd, day of November 1979, unless sooner forfeited or determined through the violation of any of the covenants herein contained and against the Lessee reserved, or unless sooner cancelled, terminated or surrendered.

ARTICLE 3. Ownership and Right to Lease.

The Lessors hereby covenant that they are the true and lawful owners of all of the said leased property however described or referred to, and that the leased property and the whole thereof is free and clear from any and all encumbrances, liens and debts whatsoever, and that the Lessors have good and absolute right to lease and dispose of the said property, and all thereof, in the manner and form as herein set forth, exception and reference being made to whatever interest the U. S. Government may claim in such unpatented mining claims, and in addition such interests as may exist upon lands covered by United States patents only, with mineral rights reserved for location under the U. S. Mining Laws.

ARTICLE 4. Possession and Control of Property.

The Lessee shall have and it is hereby given and granted the right to enter into and take over immediately the sole and exclusive possession and control of said property and the whole and

every part thereof, and during the term of this lease and option, to remain in the sole and exclusive possession and control thereof, and to investigate, measure, sample, examine, test, develop, work mine, operate, manage and control the same and the water and water rights appurtenant thereto, and to mine, extract and remove from said property the ores and minerals therein and appurtenant and belonging thereto, and to treat, mill, ship, sell or otherwise dispose of the same and receive the full proceeds therefrom, subject to the royalties hereinafter reserved.

ARTICLE 5. Entry, Manner of Work and Conformity.

In consideration of such Lease, the Lessee covenants and agrees to enter upon and take possession of all said leased property at the date of this lease, and to cause all work, development and mining to be done in a careful and minerlike manner, and to conform in all respects to and with the mining laws and regulations of the State of Montana.

ARTICLE 6. Work Requirements.

Lessee agrees to work said leased property as aforesaid and to expend thereon not less than Five Thousand Dollars ($5,000.00) in each twelve-month period during the term of this lease, and within each lease year. Said expenditures to be made for shifts of mining labor, or for surface or underground improvements or installations, diamond drilling, or other expenses related to ore mining, to mining development, or to preparatory work for mining development or mining.

ARTICLE 7. Royalties.

Royalties on all ores or concentrates milled or shipped and sold directly to a smelter ore buyer, or buying agent, shall be an amount equal to Ten Per Cent (10%) of the net smelter or other treatment plant returns. "Net returns" shall be all sums

paid to the Lessee for the values of the ores, or products thereof, by a smelter, licensed buying agent, or government agency, after deducting all charges for truck and railroad transportation, smelter charges, reduction charges, milling charges, and all charges for control and umpire assaying, on the Free Enterprise Group, and 6 2/3% royalty on the Mercury Group determined in the same manner as above provided for the Free Enterprise Group royalties.

ARTICLE 8. Division and Remittance of Royalties.

The royalty payments to be made by the Lessee under the terms of this agreement shall be payable by the remitting smelter or other agency to the Union Bank and Trust Company of Helena, Montana, and by said bank distributed as the interests of the respective owners may then appear, and pursuant to directions by such owners, provided, however that said royalties shall be remitted monthly and for each and every calendar month on or before the 25th. day of the succeeding calendar month.

ARTICLE 9. Protection from Liens and Damages.

The Lessee shall keep said property and the whole and every part thereof free and clear of liens for labor done or performed upon said property or materials furnished to it, on or for said property, or for the development or operation thereof under this lease and while the same is in force and effect, and will save and keep harmless the Lessors from all costs, loss or damage which may arise by reason of injury to any persons, livestock or other property as the result of any work or operations of the Lessee or its possession and occupancy of the property.

ARTICLE 10. Notices of Non-Liability.

Lessee agrees to post or cause to be posted in three (3) of the most public places upon the said leased property a notice to the effect that the said property is being worked and operated by Elkhorn Mining Company, a corporation, its successors or assigns,

under an agreement of lease with the Owners and that the Lessee is in actual control and management of the said operations, and that neither the Lessors nor their said property shall be in any way liable for labor, supplies, or any other debts contracted by the Lessee, its officers or agents or its successors and assigns, in connection with said operations.

ARTICLE 11. Inspection by Lessors or Representatives of Lessors.

Lessee agrees to allow said Lessors, or any of them, and their duly authorized agents and representatives, at their own cost, expense, and their own risk, to enter upon the said leased property, or any part thereof, at any and all reasonable times for the purpose of examing the condition of same, and to sample and assay the ore, mill heads, tails, and concentrates; and the Lessors shall have the right to keep on or more representative at all times upon said property, but always at the sole cost, risk and expense of said Lessors.

ARTICLE 12. Payment of Taxes, Respective Liability of Lessors, and Lessee.

Lessors shall pay when due and before delinquent, all taxes upon all the real property and upon the improvements owned by Lessors upon all the real property, during the full term of this lease, and Lessors shall pay all taxes of whatever nature or description on their receipt of royalties, and Lessee shall not be in any respect liable for taxes on any royalties paid to Lessors.

The Lessee shall pay when due and before delinquent, all taxes upon any and all personal property, machinery and equipment placed upon said property by the Lessee during the term of this Lease. The Lessee shall also pay all sales taxes, net proceeds, occupation, output, severance or production taxes, and license taxes of every kind, character and description levied upon or measured by ores or minerals extracted by Lessee from said premises during the term of this Lease, and all taxes levied against the

Lessee as an employer of Labor, all such taxes to be promptly paid when due and before delinquent. Each, the Lessors and the Lessee, upon the payment of taxes, shall promptly furnish the other with satisfactory evidence of such payment.

ARTICLE 13. Workmen's Compensation Act.

The Lessee shall carry at all times during the term of this lease, effective coverage for all its operations and all employees in said operations under this lease, under one of the authorized Plans of the Workmen's Compensation Act of Montana, and such liability and other insurance required by the laws and mining regulations of the State of Montana.

ARTICLE 14. Books of Account.

The Lessee shall keep accurate and informative books of account relating to the milling, sale and disposal of ores, minerals, concentrates or other products from said property, and the marketed metal content of the same, which books of account shall be open to inspection by the Lessors or their duly authorized agent at all reasonable times.

ARTICLE 15. Lessee's Equipment to Remain Personal Property Removable by Lessee: Exception as to Timbering.

It is mutually understood and specifically agreed by and between Lessors and Lessee that any and all machinery, equipment, implements, devices, rails, pipes, piping and tools of whatever nature that have been or may hereafter be placed in and upon said leased property, or any part thereof for any purpose by the Lessee, or the successors and assigns of the Lessee, shall be and remain the property of the Lessee and shall not, however affixed to the land or improvements, become a part of the realty or real estate, or a fixture or fixtures, and that all thereof shall be personal property, removable by Lessee, and may be removed from the realty by Lessee or its successors or assigns at any time prior to

the expiration of the termination of this lease or at any time within six (6) months after either of such events (see Article 20); PROVIDED, HOWEVER, that all timbering in plae in any shafts, drifts, tunnels, or other underground workings shall remain in and upon the premises and become a part thereof, and Lessee shall not remove any of said timbering.

ARTICLE 16. Forfeiture Clause.

The failure of the Lessee to make or cause to be made any payment herein provided for, or to keep or perform any agreement on its part to be kept and performed according to the terms and provisions hereof shall, at the election of such of the Lessors as represent a majority interest in the leased property, work a forfeiture hereof, and any and all moneys which shall have been paid by Lessee to the Lessors as royalties, or otherwise, shall be deemed forfeited to the Lessors; PROVIDED, HOWEVER, that in the event of a default on the part of the Lessee, and the election of a majority of the Lessors, as aforesaid, to terminate this least on account thereof, a majority of the Lessors as aforesaid, shall give to the Lessee a written notice of their intention to declare a forefeiture of this lease and to terminate the same on account of said default, specifying the particular default or defaults relied upon by them, and the Lessee shall have thirty (30) days after the receipt of such written notice from a majority of said Lessors in which to make good such default or defaults, in which event there shall be no forfeiture therefor. A waiver by the Lessors, or any of them, of a particular breach of any covenant or agreement shall not be deemed or held to be a waiver of, or affect any other breach or impair their rights resulting therefrom.

ARTICLE 17. Unavoidable Delays.

If the Lessee shall be delayed at any time in keeping or performing any agreement on its part to be kept or performed accord-

ing to the terms and promisions hereof, by any act or neglect of the Lessors, or by strikes or lockouts either in the mine or reduction works, fire, unusual delay in transportation, orders of the Government, or any duly constituted instrumentality thereof, unavoidable casualties, or any causes beyond the control of the Lessee, such delay shall not be deemed a breach of this lease or a default on the part of the Lessee constituting a cause for forfeiture of this lease and option, and during any time said Lessee is so delayed, it shall be excused from the performance of the work requirements specified in Article 6 hereof until the cause of the delay is removed.

ARTICLE 18. Additional Work Requirements.

The Lessee agrees on or before June 1st. 1950 to start on the Mercury Group, development work consisting of either cross cut, tunnel or shaft, that will attain a depth of at least 100 feet below the outcrop on the surface of this group of claims, all of such work to be done at the place or places selected by the Lessee, its successors and assigns. All of such development work shall be based on geological study or prospecting or other exploration work whichever in the judgment of the Lessee, its successors and assigns is the most likely point. If work ceases for a period of 90 days on said groups of claims as required herein then said claims will be released to the Lessors and this lease will end. If there are any conflicting provisions herein with this article, then these provisions shall prevail over such conflicting provisions if any.

ARTICLE 19. Cancellation by Lessee.

A. Notice.

The Lessee expressly reserves the right to cancel, terminate and surrender this lease and to relinquish and surrender said property to the Lessors at any time during the term hereof by giving the Lessors written

Notice of its intention to do so thirty (30) days prior to the termination date.

B. Written Relinquishment.

On or before the termination date specified in the notice of intention to cancel, the Lessee shall deliver to the Lessors a written relinquishment of this lease.

C. Release for Record.

Upon termination of this lease by expiration of its thirty (30) year term, or termination prior thereto without liability on the part of the Lessors to Lessee, Lessee will make, execute and acknowledge a good and sufficient rerelease of this lease for recording in the office of the County Clerk of Jefferson, Montan.

ARTICLE 20. Surrender of Property.

In the event of a valid forfeiture, surrender or other termination of this lease, the Lessee will surrender peaceable possession of said property and the whole and every part thereof to the Lessors, and Lessors may take immediate possession thereof.

ARTICLE 21. Removal of Machinery and Equipment, etc. by Lessee.

The Lessee shall have, and it is hereby given and granted six (6) months after a valid forfeiture, surrender or other termination of this lease to remove from said property, all warehouse stocks, merchandise, materials, tools, hoists, compressors, engines, motors, pumps, transformers, electrical accessories, metal or wooden tanks, pipes and connections, mine cars and any and all other machinery, equipment, implements, devices and tools, railways and rails erected or place in or upon said property by it, together with all ore broken in the stopes or workings, except mine timbers in place and permanent dwellings or structures for housing personnel or machinery, and which dwellings or structures are permanently affixed to the realty.

ARTICLE 22. Notices.

All notices herein provided for may be given by mail at the following addresses until otherwise changed by written request,

of the parties:

TO THE LESSOR:

At their respective addresses as the same appear on Page 1 hereof.

TO THE LESSEE:

Elkhorn Mining Company, Boulder, Montana

ARTICLE 23. Voluntary Surrender of the Lease.

The Lessee or its assigns may at any time surrender this lease upon the tender to the Lessors of a Quit Claim or release of the above and within described property and the payment of One Dollar ($1.00) to each of said Lessors, and thereafter the Lessee, its successors and assigns will be released from the performance of any further obligation under this lease thereafter accruing, but shall not be released of any existing obligations theretofore not completely performed and the Lessee shall have the right to remove its property within the terms and provisions of this lease elsewhere provided.

ARTICLE 24. Lessee has First Right to Purchase Leased Property on Terms Not less Favorable Than Offered to any Buyer.

Lessors agree and covenant with Lessee that in the event all of the Lessors desire and elect to sell the leased property at any time within the thirty (30) year term of this lease, or at the termination thereof, Lessee shall have the first right and privilege, and the continuing preferential right and privilege, over all others to purchase all of the leased property upon the same terms as may be offered by Lessors to any buyer, or upon terms not less favorable than may be offered to, or by, any buyer. Each Lessor herein individually agrees for himself or herself, and for the undivided interest in and to all the leased property individually owned at any time within the thirty (30) year term of this lease, or at the expiration of the thirty (30) year term

of this lease, or at the termination thereof, Lessee shall have the first right and privilege, and the continuing preferential right and privilege over all others to purchase such undivided interest upon the terms as may be offered by Lessors to any buyer, or upon terms not less favorable than may be offered to or by any buyer.

And in consideration of the acceptance of the foregoing lease and the expenditures to be made thereunder and the well and faithful keeping of the covenants thereof, the said Lessee, its successors or assigns shall have the right to purchase the said demised premises by the payment of the sum of $150,000.00 to Sanford R. Davis, and a like sum of $150,000.00 to Edward C. Miles as the purchase price for the Free Enterprise Group, and the further sum of $200,000.00 to Sanford Davis and Clyde R. Davis as the purchase price for the Mercury Group, during the term of this lease, all royalties theretofore paid to any of the owners of these leased premises shall be deducted from such purchase price and the purchase price to all said owners shall be payable annually in fifteen (15) equal installments after allowing credit for any royalty theretofore paid. Said annual payments to be payable on the anniversary of the date of the notice to exercise said option given to the owners by the Lessee or its assigns and upon the giving of notice that the Lessee exercise this option within thirty (30) days thereafter the Lessors will make, execute, acknowledge and deliver at their own costs and charges, good and sufficient deed or deeds of warranty as against everybody but the United States of America to be delivered into escrow in the Union Bank and Trust Company of Helena, Montana, to be held until the final payment is made on the purchase price of the above described lands and premises, such conveyance shall convey the said premises clear of encumbrances except such as might be placed thereon by the Lessee or its successors and assigns.

The forfeiture, surrender or termination of the above lease for any cause shall render this option void and the above mentioned payments may not thereafter be tendered, and the failure to make such payments shall at the option of the Lessors render said option forfeited and void.

If the Lessee its successors and assigns so desires it may exercise the above option to purchase either the Free Enterprise Group of claims or the Mercury Group of claims without exercising the option as to the other group, and if the Lessee, its successors or assigns exercise this option as to one of these groups only then this lease and option to purchase shall continue according to its terms as to the other group.

ARTICLE 25. Litigation.

In case any litigation arises, whether actual, pending or threatened, in relation to the herein leased mining property and premises, Lessee agrees immediately after receiving notice of the same, to notify each of said Lessors concerning same, with view to giving all Lessors the privilege of aiding and supporting Lessee in such action, and of defending themselves and their interests against any such litigation.

ARTICLE 26. Law of Lease.

All of the property which is the subject of this lease being situate and lying in Jefferson County, Montana, and this lease being delivered in the State of Montana, Lessors and Lessee agree and stipulate that this lease shall be construed under the laws of the State of Montana, and said laws are hereby designated as the laws applicable to this lease.

ARTICLE 27. Bonus or Awards.

Any Bonus or reward for the discovery of any ores on any of the claims among the Free Enterprise Group shall be paid to or divided equally between Sanford R. Davis, Edward C. Miles and Wade

V. Lewis and like bonuses or rewards for discovery of ores on Mercury Group shall be paid to Sanford R. Davis alone.

ARTICLE 28. Inurement.

The terms, provisions, covenants, and agreements herein contained shall extend to, be binding upon and inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the Lessors have each subscribed their respective names hereto, and the Lessee has caused its corporate name to be hereunto affixed and attested by its duly authorized officers (executing this lease in four (8) multiple originals, containing 17 pages each, including acknoledgements, of which this is Original No. 4, as of the day and year first above written.

/s/ Sanford R. Davis
Principal

By _____ _____
Attorney in fact for said Sanford R. Davis

/s/ Edward C. Miles
Principal

By _____
Attorney in fact for said Edward C. Miles

/s/ Clyde R. Davis
Principal

By Sanford R. Davis
Attorney in fact for said Clyde R. Davis

/s/ Wade V. Lewis
Principal

By _____ _____
Attorney in fact for said Wade V. Lewis

L E S S O R S

ELKHORN MINING COMPANY, a corporation

by /s/ Wade V. Lewis
Its President
Hereto specifically authorized and empowered.

L E S S E E

ATTEST:

J. T. Lewis /s/
Secretary

STATE OF MONTANA)
: ss
County of Lewis and Clark)

On this 23rd. day of November, 1949, before me, the undersigned Notary Public in and for the State of Montana, personally appeared WADE V. LEWIS, to me personally known, who, being by me duly sworn, did say:

That he is the President of Elkhorn Mining Company, a corporation, party to and described in the foregoing instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by him, the said President, as such President by authority of said corporation, and said Wade V. Lewis acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal upon the day and year in this Certificate first above written.

/s/ Ralph J. Anderson
Notary Public for the State of Montana
Residing at Helena, Montana
My Commission expires Jan. 29, 1950

(SEAL)

STATE OF MONTANA)
ss
County of Lewis and Clark)

On this 23rd. day of November, 1949, before me, the undersigned Notary Public in and for the State of Montana, personally appeared SANFORD R. DAVIS for himself, and SANFORD R. DAVIS, known to me to be the same person whose name is subscribed to the within instrument as Attorney in Fact for Clyde R. Davis of Boulder, Jefferson County, Montana, and the said Sanford R. Davis acknowledged to me that he subscribed his name to said instrument for himself, and the said Sanford R. Davis acknowledged to me that he subscribed the name of Clyde R. Davis, as principal, and his own name as Attorney in Fact for aid Principal; and also before me, the undersigned Notary Public in and for the State of Montana, personally appeared WADE V. LEWIS, known to me to be the same person whose name is subscribed to the within instrument, as principal.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal upon the day and year in this Certificate, first above written.

/s/ Ralph J. Anderson
Notary Public for the State of Montana
Residing at Helena, Montana
My Commission expires Jan. 29, 1950

(SEAL)

67140

RECORDED

INDEXED

COMPARED

RECORDERS OFFICE
STATE OF MONTANA) ss.
COUNTY OF JEFFERSON)

I hereby certify that the within instrument was filed for record this & 7 day of December A. D. 1950 at 3:36 o'clock P. M. and is duly recorded in book 5 of Misc. on page 596

Alta M. Dawson
County Recorder

Fee $10.50

MODIFICATION OF MINING LEASE AND OPTION
RELATING TO MERCURY GROUP ONLY

THIS AGREEMENT, made and entered into this 5th day of December, 1950, by and between Sanford R. Davis, a single man, of Boulder, Jefferson County, Montana, Edward C. Miles, a single man, of Helena, Lewis and Clark County, Montana, Clyde R. Davis, Box 69, Boulder, Jefferson County, Montana, Wade V. Lewis, of Boulder, Jefferson County, Montana, parties of the first part, hereinafter called the Lessors: and Elkhorn Mining Company, a corporation organized and existing under the laws of the State of Montana, with corporate offices at Boulder, Jefferson County, Montana, party of the second part, hereinafter called the Lessee, WITNESSETH:

WHEREAS, foregoing named Lessors and Lessee did on the 23rd day of November, 1949, enter into a certain agreement, known as "MINING LEASE AND OPTION", relating to groups of mining claims known as the "Free Enterprise" group and the "Mercury" group, situated in Township 6 North, Range 4 West, M.P.M., Jefferson County, Montana, as shown by recorded instrument at the office of the County Clerk and Recorder, at Boulder, Jefferson County, Montana, and

WHEREAS, it is now the object and desire of the parties hereto to modify such "MINING LEASE AND OPTION" to the extent hereinafter stated,

NOW THEREFORE, the parties hereto, for and in consideration of the sum of ONE DOLLAR ($1.00), paid in hand by the Lessee to Lessors, the receipt of which is hereby acknowledged, and for further considerations of mutually accruing advantages acquired herein, herein agree hereinafter as follows, to-wit:

That "Article 18 Additional Work Requirements", hereinabove described, and contained in original "MINING LEASE AND OPTION" dated and acknowledged the 23rd day of November, 1949, is hereby voided and is now and henceforth of no further force and effect, as respects the Mercury Group only, comprised of the following Lode Mining Claims, viz. (1) Boulder Mercury, Book 45, Page 353; (2) Boulder Mercury No. 2, Book 45, Page 391; (3) Boulder Mercury No. 3, Page 45, 392; (4) Boulder Mercury No. 4, Book 45, Page 393; (5) East Mercury No. 1; (6) East Mercury No. 2; (7) Mercury Connection; (8) Boulder Mercury No. 5, all references being to records of Jefferson County, Montana. But said work requirements shall continue as to the Free Enterprise Group.

The terms, provisions, covenants, and agreements herein contained shall extend to, be binding upon and inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the lessors have each subscribed their respective names hereto, and the Lessee has caused its corporate name to be hereunto affixed and attested by its duly authorized officers (executing this instrument in six (6) multiple originals, containing 4 pages each, including acknowledgments, of which this is Original No. 2, as of the day and year first above written.

Sanford R. Davis
Principal

Edward C. Miles
Principal

Clyde R. Davis
Principal

By Sanford R. Davis
Attorney in Fact for Clyde R. Davis

Wade H. Lewis
Principal

Lessors

ELKHORN MINING COMPANY, a Corporation

By Wade H. Lewis
Its President
Hereto specifically authorized and empowered.

Lessee

ATTEST:

J. D. Lewis
Secretary.

STATE OF MONTANA
County of Lewis and Clark) ss

On this 5th day of December, 1950, before me the undersigned Notary Public in and for the State of Montana, personally appeared Sanford R. Davis, for himself, and Sanford R. Davis, known to me to be the same person whose name is subscribed to the within instrument as Attorney in Fact for Clyde R. Davis of Boulder, Jefferson County, Montana, and said Sanford R. Davis acknowledged to me that he subscribed his name to said instrument for himself, and the said Sanford R. Davis acknowledged to me that he subscribed the name of Clyde R. Davis, as principal, and his own name as Attorney in Fact for said Principal; and also before me, the undersigned Notary Public in and for the State of Montana, personally appeared both Edward C. Miles and Wade V. Lewis, both known to me to be the same persons whose names are subscribed to the within instrument, as principals, and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal upon the day and year in this Certificate first above written.

E. S. Toomey

Notary Public for the State of Montana
Residing at Helena, Montana.

(Seal)

My Commission expires May 1, 1953.

STATE OF MONTANA)

County of Lewis and Clark)ss

On this 5th day of December, 1950, before me, the undersigned Notary Public in and for the State of Montana, personally appeared Wade V. Lewis, to me personally known, who , being by me duly sworn, did say:

That he is the President of Elkhorn Mining Company, a corporation, party to and described in the foregoing instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by him, the said President, as such President by authority of said corporation, and said Wade V. Lewis acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal upon the day and year in this Certificate first above written.

E. V. Tooley

Notary Public for the State of Montana
Residing at Helena, Montana.

(SEAL)

My Commission expires May 1, 1953.

RECORDED 67139

INDEXED

COMPARED

RECORDERS OFFICE
STATE OF MONTANA)
County of Jefferson) ss

I hereby certify that the within instrument was filed for record this * 7 day of December A. D. 1950 at 3:35 o'clock P.M.

and is duly recorded in book 5

of Misc. on page 595

/s/ Alta M. Dawson
County Recorder

MODIFICATION OF MINING LEASE AND OPTION
RELATING TO MERCURY GROUP ONLY

THIS AGREEMENT, made and entered into this 5th. day of December, 1950, by and between Sanford R. Davis, a single man, of Boulder, Jefferson County, Montana, Edward C. Miles, a single man, of Helena, Lewis and Clark County, Montana, Clyde R. Davis, B ox 69, Boulder, Jefferson County, Montana, Wade V. Lewis, of Boulder, Jefferson County, Montana, parties of the first part, hereinafter called the Lessors: and Elkhorn Mining Company, a orporation organized and existing under the laws of the State of Montana, with corporate offices at Boulder, Jefferson County, Montana, party of the second part, hereinafter called the Lessee, WITNESSETH:

WHEREAS, foregoing named Lessors and Lessee did on the 23rd. day of November, 1949, enter into a certain agreement, known as "MINING LEASE AND OPTION", relating to groups of mining claims known as the "Free Enterprise" group and the "Mercury" group, situated in Township 6 North Range 4 West, M.P.M., Jefferson County, Montana, as shown by recorded instrument at the office of the County Clerk and Recorder, at Boulder, Jefferson County, Montana, and

WHEREAS, it is now the object and desire of the parties hereto to modify such "MINING LEASE AND OPTION" to the extent hereinafter stated,

NOW THEREFORE, the parties hereto, for and in consideration of the sum of ONE DOLLAR ($1.00), paid in hand by the Lessee to Lessors, the receipt of which is hereby acknowledged, and for further considerations of mutually accruing advantages acquired herein, herein agree hereinafter as follows, to-wit:

That "Article 18 Additional Work Requirements", hereinabove described, and contained in original "MINING LEASE AND OPTION" dated and acknowledged the 23rd. day of November, 1949, is hereby voided and is now and henceforth of no further force and effect, as respects the Mercury Group only, comprised of the following Lode Mining Claims, viz. (1) Boulder Mercury, Book 45, Page 353; (2) Boulder Mercury No. 2, Book 45, Page 391; (3) Boulder Mercury No. 3, Page 45, 392; (4) Boulder Mercury No. 4, Book 45, Page 393; (5) East Mercury No. 1; (6) East Mercury No. 2; (7) Mercury Connection; (8) Boulder Mercury No. 5, all references being to records of Jefferson County, Montana. B ut said work requirements shall continue as to the Free Enterprise Group.

The terms, provisions, covenants, and agreements herein contained shall extend to, be binding upon and inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the lessors have each subscribed their respective names hereto, and the Lessee has caused its corporate name to be hereunto affixed and attested by its duly authorized officers (executing this instrument in six (6) multiple originals, containing 4 pages each, including acknowledgments, of which this is Original No. 1, as of the day and year first above written.

/s/ Sanford R. Davis
Principal

/s/ Edward C. Miler
Principal

/s/ Clyde R. Davis
Principal

/s/ By Sanford R. Davis
Attorney in Fact for Clyde R. Davis

/s/ Wade V. Lewis
Principal

Lessors

ELKHORN MINING COMPANY, a Corporation

By /s/ Wade V. Lewis
Its President
Hereto specifically authorized and empowered.

Lessee

ATTEST:

/s/ J. T. Lewis
Secretary

(SEAL)

STATE OF MONTANA
County of Lewis and Clark) ss

On this 5th. day of December, 1950, before me the undersigned Notary Public in and for the State of Montana, personally appeared Sanford R. Davis, for himself, and Sanford R. Davis, known to me to be the same person whose name is subscribed to the within instrument as Attorney in Fact for Clyde R. Davis of Boulder, Jefferson County, Montana, and said Sanford R. Davis acknowledged to me that he subscribed his name to said instrument for himself, and the said Sanford R. Davis, acknowledged to me that he subscribed the name of Clyde R. Davis, as principal, and his own name as Attorney in Fact for said Principal; and also before me, the undersigned Notary Public in and for the State of Montana, personally appeared both Edward C. Miles and Wade V. Lewis, both known to me to be the same persons whose names are subscribed to the within instrument, as principals, and acknowledged to me that they executed the same.

IN WITNESS WHEREOF. I have hereunto set my hand and affixed my Notarial Seal upon the day and year in this Certificate first above written.

/s/ E. G. Toomey
Notary Public for the State of Montana
Residing at Helena, Montana

My Commission expires May 1, 1953

(SEAL)

STATE OF MONTANA)
ss.
County of Lewis and Clark)

On this 5th. day of December, 1950, before me, the undersigned Notary Public in and for the State of Montana, personally appeared Wade V. Lewis, to me personally known, who, being by me duly sworn, did say:

That he is the President of Elkhorn Mining Company, a corporation, party to and described in the foregoing instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by him, the said President, as such President by authority of said corporation, and said Wade V. Lewis acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal upon the day and year in this Certificate first above written.

/s/ E. G. Toomey

Notary Public for the State of Montana
Residing at Helena, Montana.

My Commission expires May 1, 1953

(SEAL)

67139

RECORDED

INDEXED

COMPARED

RECORDERS OFFICE
STATE OF MONTANA)
County of Jefferson) ss

I hereby certify that the within instrument was filed for record this 7 day of December A. D. 1950 at 3:35 o'clock P. M.

and is duly recorded in book 5

of Misc. on page 595

/s/
Alta M. Dawson
County Recorder,

///
By _____

2.10

ELKHORN MINING COMPANY • Elkhorn Mining District - - Elkhorn, Montana . . . . .

PHONE 2121 . . . OFFICES: Boulder Bank Building BOULDER, MONTANA

April 13th, 1951.

Hon. Oscar Chapman,
Secretary of the Interior,
Washington, D. C.

Dear Secretary Chapman:

This will certify that that certain Lease and agreement executed and acknowledged the 5th day of December, 1950, by and between Elkhorn Mining Company, a Montana Corporation, with offices at Boulder Bank Building, Boulder, Jefferson County, Montana, Lessor, and one J. I. Listle, of Los Angeles, California, Lessee, has been since initiation and is now in good standing and in full force and effect, pertaining to that group of quartz lode mining claims known as the "Boulder Mercury" group, consisting of eight lodeclaims and duly recorded in the office of the County Clerk and Recorder of Jefferson County, at Boulder, Montana.

Respectfully,

ELKHORN MINING COMPANY,

Wade V. Lewis

Wade V. Lewis, President.

Attest:

John T. Lewis

John T. Lewis, Asst.Sec.

Dma - 1176 X

REPORT ON THE

BOULDER MERCURY MINING CLAIM

GROUP

*****

BOULDER, JEFFERSON COUNTY,

MONTANA

-*-

INDEX TO CONTENTS

	Page
I. Summary	1
II. Location	1
III. Property	2
IV. Status	2
V. History of Uranium Mining in Montana	3-5
VI. Geology	5-7
VII. Mineralization	7
VIII. Market	7-8
IX. Scintillometer Survey	9- 11
X. Conclusion	12
XI. Recommendations	12-13

Report by Wade V. Lewis, Geologist,
Boulder Bank Building,
Boulder, Montana.

Scintillometer surveys
by
W. V. Lewis and J. T. Lewis,
December 1950-January 1951

-*-

REPORT ON THE BOULDER MERCURY GROUP

of Lode Mining Claims

In Jefferson County, Boulder, Montana

SUMMARY

The Boulder Mercury Group of Lode mining claims is contained within a Montana area recently discovered to contain commercial uranium ores, both secondary and primary in occurrence and representing the first known occurrence of pitchblende and uraninite to be found in fissure type veins within the monzonite of the Boulder batholith. It immediately adjoins the Free Enterprise uranium group being operated by the Elkhorn Mining Company and includes ground favorable for uranium ore exploration.

LOCATION

The Boulder Mercury mining claim group consists of eight unpatented claims situated in Township 6 North, Range 4 West of the Montana Principle Meridian, in Jefferson County, near Boulder, Montana, a county seat. It represents one contiguous claim group as depicted on map, Exhibit 1 herewith attached, and lies within one mile in a westerly direction from the Great Northern Railway depot and ore loading ramps at Boulder. It is situated in a recognized productive mining area midway between Butte and Helena, Montana, and borders U, S. Highway No. 91.

PROPERTY

The Boulder Mercury group consists of the following named claims:

Boulder Mercury
Mercury Connection
Boulder Mercury No.2
Boulder Mercury No.3
Boulder Mercury No.4
Boulder Mercury No.5
East Mercury No. 1
East Mercury No.2,

all contained within T. 6 N., R. 4 W., M.P.M., Jefferson County, Montana.

STATUS

All claims contained in the Boulder Mercury Group were acquired by location through Sanford R. Davis, et al, of Boulder, Montana, were included under lease and option to the Elkhorn Mining Company, a Montana Corporation, with offices at Boulder Bank Building, Boulder, Montana, on the 23rd day of November, 1949, such group having been transferred under an "Assignment by Lessee and Optionee for Described Property" on the 5th day of December, 1950 to J. I. Listle of Los Angeles, California. Lands covered by these claims represented originally stock raising lands with mineral rights therein subject to location under the mining laws of the United States. Records show there have been no transfers by deed or other conveyance of any titles from Sanford R. Davis, et al, to any other proncipals. Exhibit No.1 further shows proximity of the property to the Great Northern Railway right-of-way, which crosses the claim group. Attention is invited to apparent

conflict between the Boulder Mercury No.4 claim and the New Era and Free Enterprise No.6 claims of the adjoining group. The Boulder Mercury No. 4 is the senior claim as to date of location so that the area shown as covered by the three locations is validly contained within the Boulder Mercury No.4 only. As regarding a small unimportant segment covered by the Mercury Connection, Aspen, and Free Enterprise No.6 claims, such segment is valid as to the two latter named claims.

HISTORY OF URANIUM MINING IN MONTANA

As discovery of uranium in Montana is of recent occurrence some background history of radioactivity in Montana may be mentioned.

Radioactivity in Montana has been known since the turn of the century, first occurrences having been noted in pegmatite dikes, of which there are estimated several hundreds in western Montana. A part of these show radioactivity due to included fergusonite, euxenite, or other uranium-bearing minerals, these ordinarily not present in commercial quantities.

Much of the first planned prospecting for commercial uranium in Montana has been carried on through the Elkhorn Mining Company, of Boulder, Montana, which company began its prospecting two years ago. First investigation included checking with a Geiger Counter thousands of assay pulps found in smelter and assay offices, these pulps representing material mined from many counties in Montana. Hundreds of museum and private mineral cabinet specimens

were likewise checked during this preliminary investigation period. Radioactivity found at these sources yielded a definite pattern for search, limiting areas for first examination. Many silver-lead ores shipped to the smelters over a period of years showed radioactivity, not necessarily indicating commercial uranium values, but indicating possibilities of finding uranium ores in or near certain silver-lead districts. Incidentally, Elkhorn Mining Company has been able to trace masked silver-lead orebodies on the surface due to contained radioactivity, likewise, to indicate the positions of such orebodies in underground workings. Initial work was performed with an El-Tronics Geiger Counter, more accurate and detailed work now being performed by the company with the latest Canadian Halross Scintillometer, this instrument being one hundred times more sensitive and effective than the ordinary Geiger Counter.

The first uranium discovery by Elkhorn Mining Company was made in gold placer sands in its Silver Bow County operations. Radioactivity was due to the presence of euxenite, monazite and other minerals, those resistant to weathering processes and contained in black sand concentrates.

Over a period of several months, investigations for radioactivity were conducted in Jefferon, Silver Bow, Beaverhead, and Lewis and Clark counties in Montana, extending north from Boulder to Helena, and south to the Montana-Idaho line. Radioactivity was found in pegmatites, sedimentary and metamorphic rock masses, rare earth deposits, radon gas emanations, and , finally, on vein type deposits in grano-aplitic phases of the Boulder granite bath-

olith. After searching over one hundred fifty miles of territory in several counties, one of the most promising uranium prospects was found near the office of Elkhorn Mining Company, specifically, thirty-six hundred feet west of the Great Northern Depot at Boulder, Montana. This find is now included in the property known as the Free Enterprise group, developed to date by a 150-foot shaft with about three hundred fifty feet of auxiliary work, including crosscuts, drifts and raises. For the amount of work performed to date, ore production has been very satisfactory, low-grade uranium ores being stockpiled and high-grade ores being sacked. Very satisfactory cooperation through the United States Atomic Energy Commission is providing for acceptance of these ores through the Commission or agent buyers appointed by the Commission. Government ore buying and stockpiling of Montana uranium ores, as in other areas, is a normal step preceding an ultimate uranium reduction plant for Montana.

It should be noted that in recent months much detailed geologic field work has been performed through the United States Geological Survey and U. S. Bureau of Mines, working in conjunction with objectives of the U. S. Atomic Energy Commission. Results of this work can not be quoted at this time but mapping of the Boulder locality through these agencies of the government will beavailable to mine operators interested.

GEOLOGY

The uranium-bearing vein currently under development at the Free Enterprise property is part of a lode system as yet unexplored and lying within the Boulder batholith. It is one of eight or ten vertical fissure veins striking northeast-southwest, all nearly parallel. Nearly all the uranium ore found in the quartz-

monzonite appears to be associated with intrusive aplitic sills or dikes. Evidence indicates that uranium mineralization may be derived from the original aplitic segregation or the differentiated product formed when the granite magma cooled. The Free Enterprise vein system obviously is later than the aplite, the latter apparently being a favorable host rock controlling ore deposition, serving also from a confining, impervious structural standpoint, trapping original mineral solutions and acting as a barrier for retention of secondary minerals. In passing through the aplite, the veins narrow, while the ore shoots widen where monzonite is encountered. Paradoxically the first problem during early development at the Free Enterprise was finding quartz-monzonite, or granite of the Boulder batholith during development work by drifting from the main shaft, which by coincidence, extended into recurrent flat dipping aplitic dikes within the granite, the gradation of one rock into the other often being of a hybrid character commonly called grano-aplite.

The Boulder Mercury group is likewise contained within the Boulder Granite batholith and is traversed by a vein system similar to that found at the adjoining Free Enterprise group, in fact some of the veins of the Mercury group represent extensions of part of the lode system to be found on the Free Enterprise group. All of the rocks found within the Boulder Mercury group and its immediate vicinity are of igneous character, consisting mainly of monzonite in which is found geologic conditions simliar to those at the Free Enterprise, together with attending sills or dikes of aplite, a later segregation differentiated from the granite magma. Discussion of the two mining

claim groups above named is necessary to show inter-relationship from a structural standpoint.

MINERALIZATION

Uranium minerals in the Jefferson County district and particularly in the Free Enterprise ore have been identified as autunite, zeunerite, the meta-torbernites, more recently phosphuranylite, a hydrated uranyl phosphate, pitchblende and uraninite. Other associated ore minerals are argentite, pyrargyrite and native silver, besides sparse occurrences of pyrite and galena. A recent assay yielded 17.1 per cent U_3O_8 and 1,760 ounces of silver per ton. Hand specimens exceed 20% U_3O_8. Average values of ore mined is, of course , less. Metallurgical work performed to date indicates no difficult problems. In day to day mining operations the characteristic brilliant emerald-green color of autunite, as disclosed by the ultra-violet ray lamp, is used as a guide underground as to the presence and distribution of uranium ores. Auxiliary instruments used daily are the El-Tronics Geiger Counter with portable amplifier and the Halross Scintillometer. An alpha-ray counter is likewise employed occasionally in checking certain types of ores.

MARKET

Two sources are available for marketing Montana uranium ores. Recent agreement through the U. S. Atomic Energy Commission has provided for acceptance of Boulder uranium-silver ores, the American Smelting and Refining Company smelter at East Helena, Montana, 35 miles distant, being agent buyer for the AEC. Payment is to be made for uranium on the basis of $2.00 per pound for first four pounds

of U_3O_8 contained per ton, $2.25 per pound for next 6 pounds of U_3O_8 contained, $2.50 per pound for U_3O_8 contained in excess of 10 pounds per ton. A development allowance of $0.50 per pound of contained U_3O_8 will also be paid, together with a haulage allowance of $0.06 per ton mile for transportation of ore paid for up to a maximum of 100 miles. Silver is paid for at the market price. This item is important as silver values often run high together with uranium values in the Boulder area.

A second market for uranium-silver ores is being provided through the Kalunite plant in Salt Lake City, Utah, recently purchased by the Vitro Chemical Company, a subsidiary of Vitro Manufacturing Company, of Pittsburg, Pennsylvania. It is understood that payment rates for crude uranium ores may be as favorable or more favorable than those quoted for acceptance at the East Helena, Montana smelter. At East Helena ores will be stockpiled, at Salt Lake the uranium will be chemically recovered. Ore acceptance in either instance calls for payment for ores assaying as little as 0.2% U_3O_8.

SCINTILLOMETER SURVEY

In connection with examination and report on the Boulder Mercury group, Scintillometer surveys were made as shown on exhibits attached, Instrument used was a Canadian made Halross Scintillometer, model used having recently been released for sale within the United States. Field investigations were rapidly accelerated by use of this instrument, one hundred times as sensitive and effective as a Geiger Counter.

In principle the Scintillometer intercepts gamma rays impinging on a dense crystal, causing elecrical disturbances in the crystal structure. These disturbances produce light or scintillations, their brightness being proportional to the energy of the gamma ray. The crystal scintillations are detected and amplified by a photoelectric tube which feeds corresponding electrical pulses to an electronic measuring circuit. Although the crystal is sensitive to cosmic radiation, it offers a much larger increase in ratio of gamma rays to cosmic rays than is found in the ordinary Geiger Counter, so that cosmic radiation becomes a negligible factor.

Initial Scintillometer survey was started on the Boulder Mercury No.3 claim at a point "A" from which the southwest corner of this claim bears South 29° East 294 feet. Readings in counts per second were made at 3 foot intervals on lines directed due north and south in crossing vein well exposed on this portion of the claim. With a background count of readings as low as 38 counts per second, anomalies as high as 70, 100, 175, 225, 260, and 525 were recorded at points encountered in crossing the vein, here designated as a "ledge" for reason that the vein at many points jutted above the ordinary ground surface, due to differential erosion processes, the silicified vein gangue being more resistant to erosion than the surrounding monzonite.

East of the area shown on Exhibit No.2, scintillometer readings were taken on north-south, east-west lines along the same vein. Lode line readings hereagain show a definite increase from readings taken at north-south 25 foot intervals from vein and at 15 foot intervals along lines taken parallel to the vein and directed due east-west. Low background count is 28, with vein reading anomalies up to 92 counts per second, Interpretation of these readings will be hereinafter discussed. This grid survey is depicted on chart, Exhibit 3.

Third Scintillometer survey results are shown on chart attached, Exhibit No.4. This survey extended from the east portion of the Boulder Mercury No.3 claim into the west portion of the Boulder Mercury No.1 claim. Interval readings for the most part were taken every 50 feet along lode line over a total distance of 2,200 feet, and at 25 foot intervals north-south, on either side of the vein. A consistent increased count was obtained wherever vein was encountered.

It should here be noted that the count increases were consistent, in this instance, rather than high, also that at one point on the East Mercury No.1 when highest anomaly 80 was encountered, that this point represented the only point where the surface had been disturbed by an open cut dug years ago during early prospecting days. Any excavation in a radioactive area or upon a radioactive outcrop often shows increased count.

Field investigations over several Montana regions have shown radioactivity to be due to many causes:uranium , thorium, low grade rock masses such as aplite, even granite, radon gas emanations (a decomposition product of radium, in turn a decay product of uranium). Field work has shown that Geiger Counter or Scintillometer grid survey readings showing increased anomalies are important, but that the interpretations of such readings are of as great or greater importance.

In the Boulder, Montana locality it has been found that even a small increased count in crossing a vein structure may be of considerable importance. To illustrate this point reference is made to at attached Exhibit 5 showing scintillometer survey made a short distance from the Free Enterprise shaft, site of commercial uranium production from a group of claims adjoining the Boulder Mercury group. Initial northwest-southeast line was run from compressor house to shaft collar and across ore dump. A maximum reading of 820 counts per second was secured on medium grade commercial uranium ores. Further readings on northwest-southeast lines were taken at 5 foot intervals in an area approximately 150 feet northeast of the shaft

location. These readings crossed the lode line of the Free Enterprise vein, known to contain uranium. The vein at the site of these readings is masked by some overburden, eroded vein material can account for irregularity in readings, but known mineralization is contained along the vein. The general lode line strike shows some increase in counts per second as compared to more distant points, but the highest reading, even in close proximity to known high grade uranium ore shoots, is only 60 compared to a low of 39.

In view of the foregoing, two points are important in giving consideration to scintillometer grid surveys in the Free Enterprise-Boulder Mercury area. First, the fact that radioactivity in the area is due to uranium only rather than thorium, or other causes. Second, that even a few counts per second increase in crossing a vein structure may be significant. This can not be said of all other Montana localities heretofore examined.

The latter may be best illustrated by reference to a surface cut located South 57° West, 125 feet, from the Free Enterprise shaft collar. This cut, about 8 feet deep, shows the Free Enterprise vein with a count of 120 counts per second, no uranium content visible or determinable by commercial assay methods. However, in the Development of the Free Enterprise vein, drift was run at the 85 foot level to a point directly beneath the cut mentioned, where high grade uranium ore, containing pitchblende, uraninite, and accompanying secondary uranium minerals, was found. In other words, mild radioactivity at the surface, recognized in relation to geologic structure, resulted in high grade uranium ore less than 100 feet below the surface, on the same vein.

CONCLUSION

1. The Boulder Mercury mining claim groupis included in an area producing the first commercial uranium ores found in Montana and the Pacific Northwest and immediately adjoins the main district producer.

2, It is contained in the Boulder granite batholith, is traversed by fissure vein ore structures, together with attending aplitic dikes and sills, as yet unexplored but favorable for uranium occurrence.

3. The vein system contained within the Boulder Mercury group shows definite radioactivity and increased count through Scintillometer grid surveys of vein structures. Anomalies at several points appear quite significant.

RECOMMENDATIONS

In view of the foregoing, the following recommendations are submitted with reference to the Boulder Mercury group:

1. That further geologic examination be conducted for structural detail.

2. That Scintillometer surveys be extended to other veins contained within the Boulder Mercury group.

3. That a program of diamond drilling be entertained, with initial holes located at points showing most favorable structures, combined with increased count as shown by Scintillometer grid surveys over radioative areas.

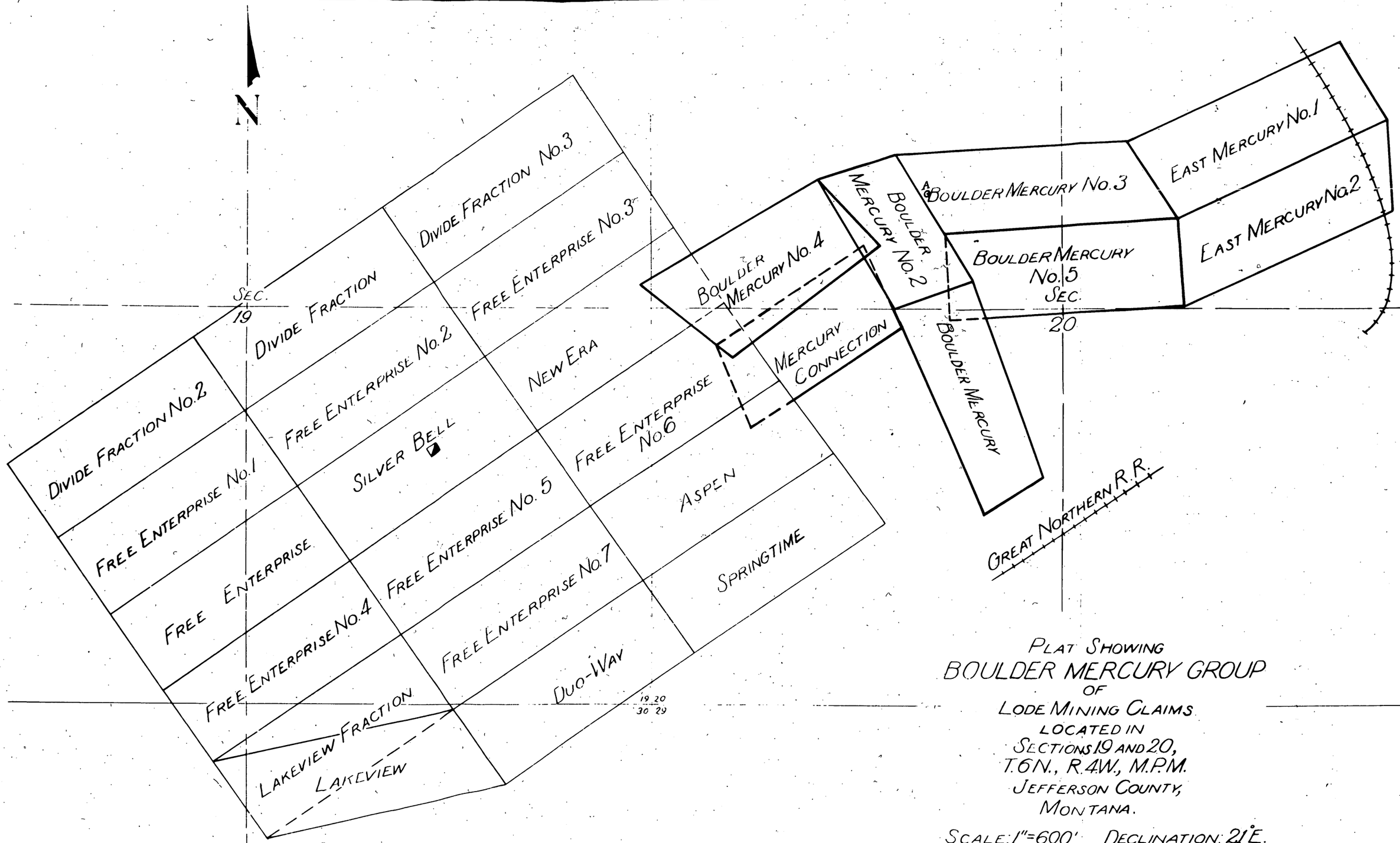
4. That the vein system exposed on the Boulder Mercury 1 and Boulder Mercury 3 claims be penetrated by an adit to obtain a depth of 100 to 200 feet below the surface, deeper mining to be planned, based on results obtained.

The Boulder uranium area is developing very favorably for the amount of district development work performed to date. It is contained in one of the best mineralized mining regions of the United States, is in a deep-seated ore district, at a point approximately 24 miles northeast of the Butte area being mined to a depth of 5,000 feet, and is approximately 8 miles southwest of the Elkhorn District where mining has been extended to the 2,300 foot level, measured on slope of orebody.

The Boulder area in which the Boulder Mercury group is contained is only beginning exploration, but merits development with view to finding deep-seated commercial uranium uranium-silver ore deposits.

With government uranium ore acceptance and a long-term minimum market price guarantee, together with war time employment for the atomic bomb in national defense, and thousands of industrial, medical, and peacetime uses developing from day to day, the future of uranium mining is assured for years to come.

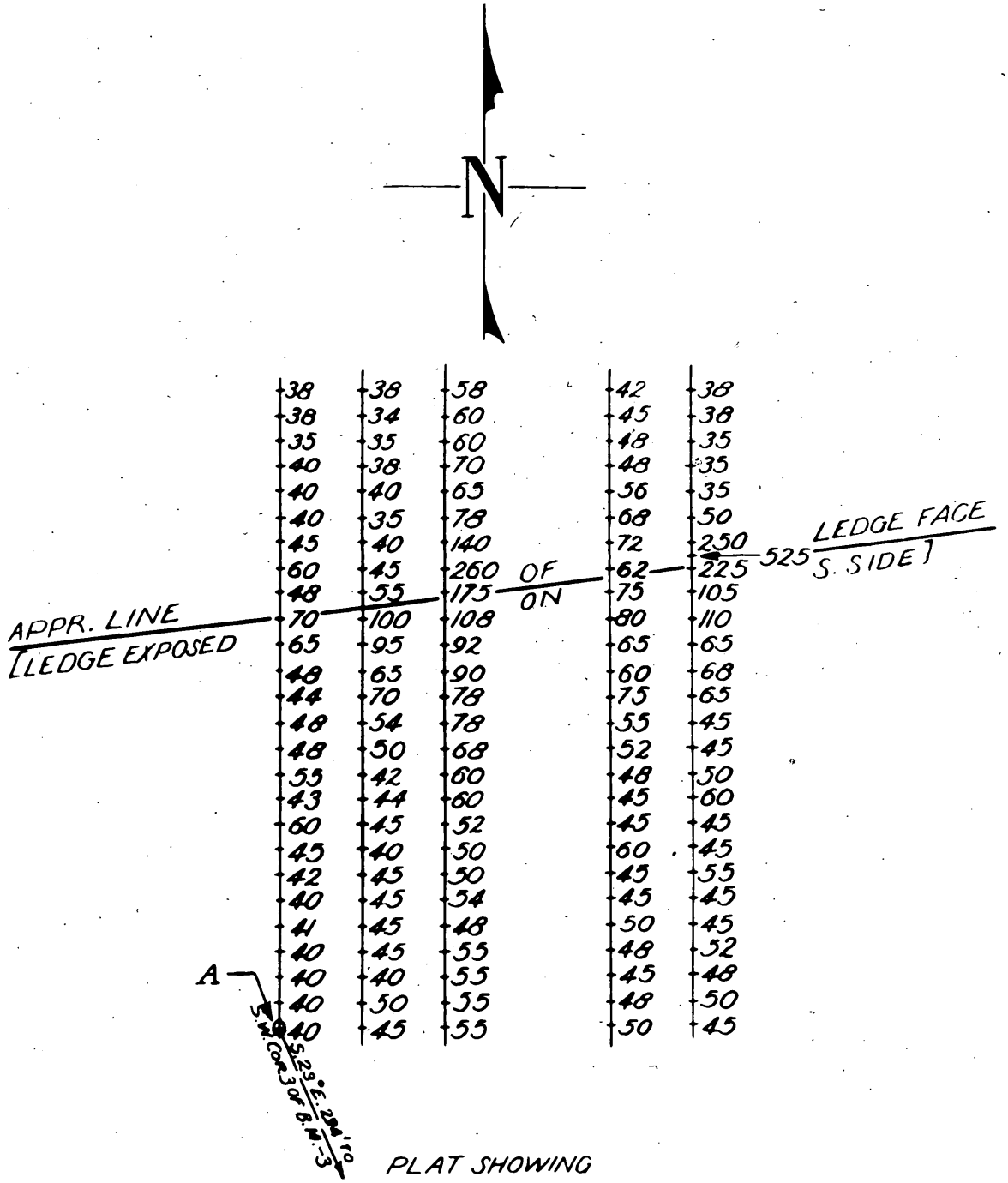
Wade V. Lewis



PLAT SHOWING
BOULDER MERCURY GROUP
OF
LODE MINING CLAIMS
LOCATED IN
SECTIONS 19 AND 20,
T.6N., R.4W., M.P.M.
JEFFERSON COUNTY,
MONTANA.

SCALE: 1"=600' DECLINATION: 21° E.

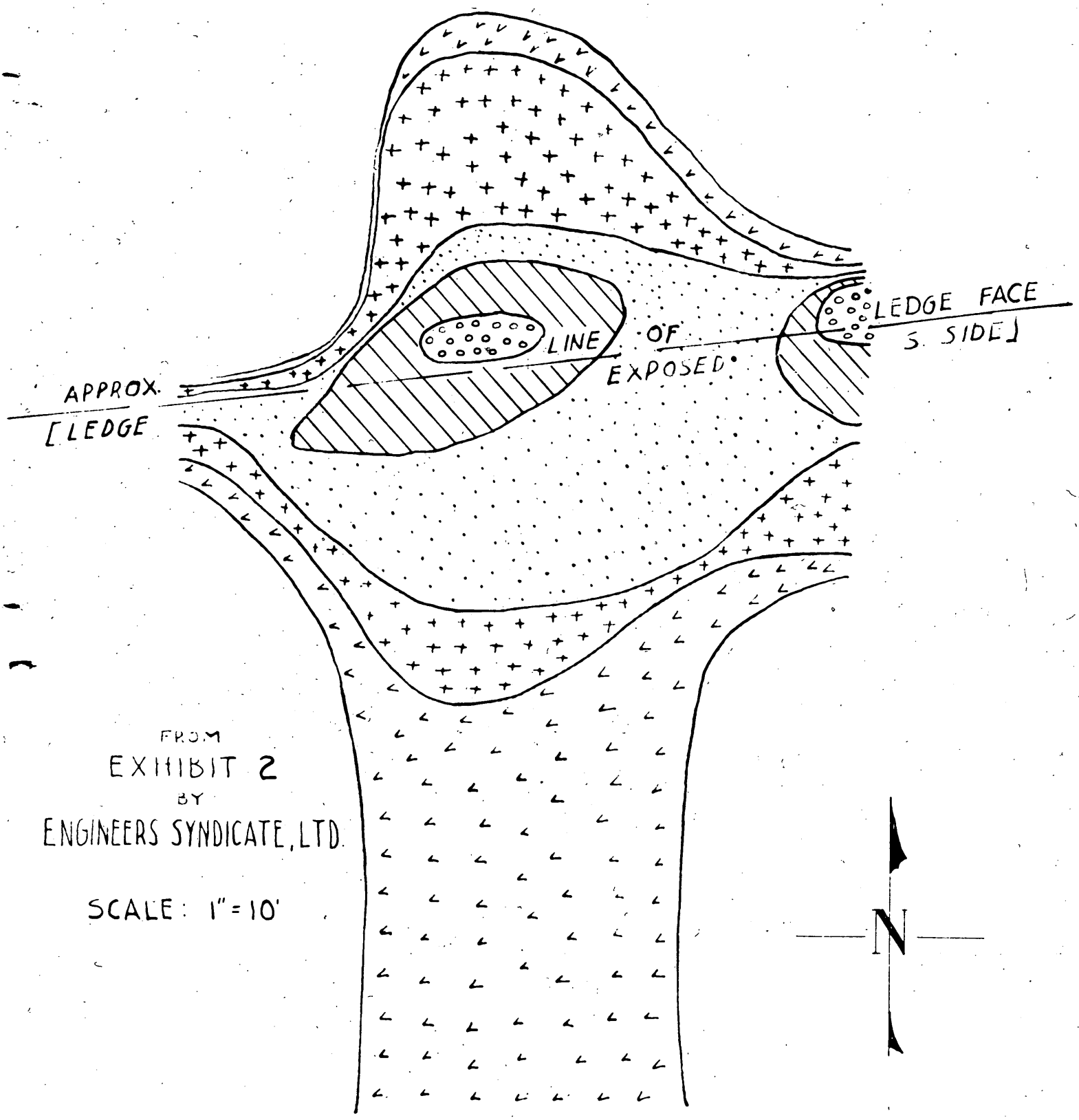
EXHIBIT 1



PLAT SHOWING
SCINTILLOMETER READINGS
ON
WEST PORTION OF LEDGE
ON
BOULDER MERCURY Nº 3 CLAIM

READING INTERVALS:
3' N-S ——— 10' E-W
READINGS IN COUNTS/SECOND
WITH HALROSS SCINTILLOMETER.
SCALE: 1" = 20' ——— DECLINATION: 21° E.

EXHIBIT 2



UNDER 50

50-60

61-70

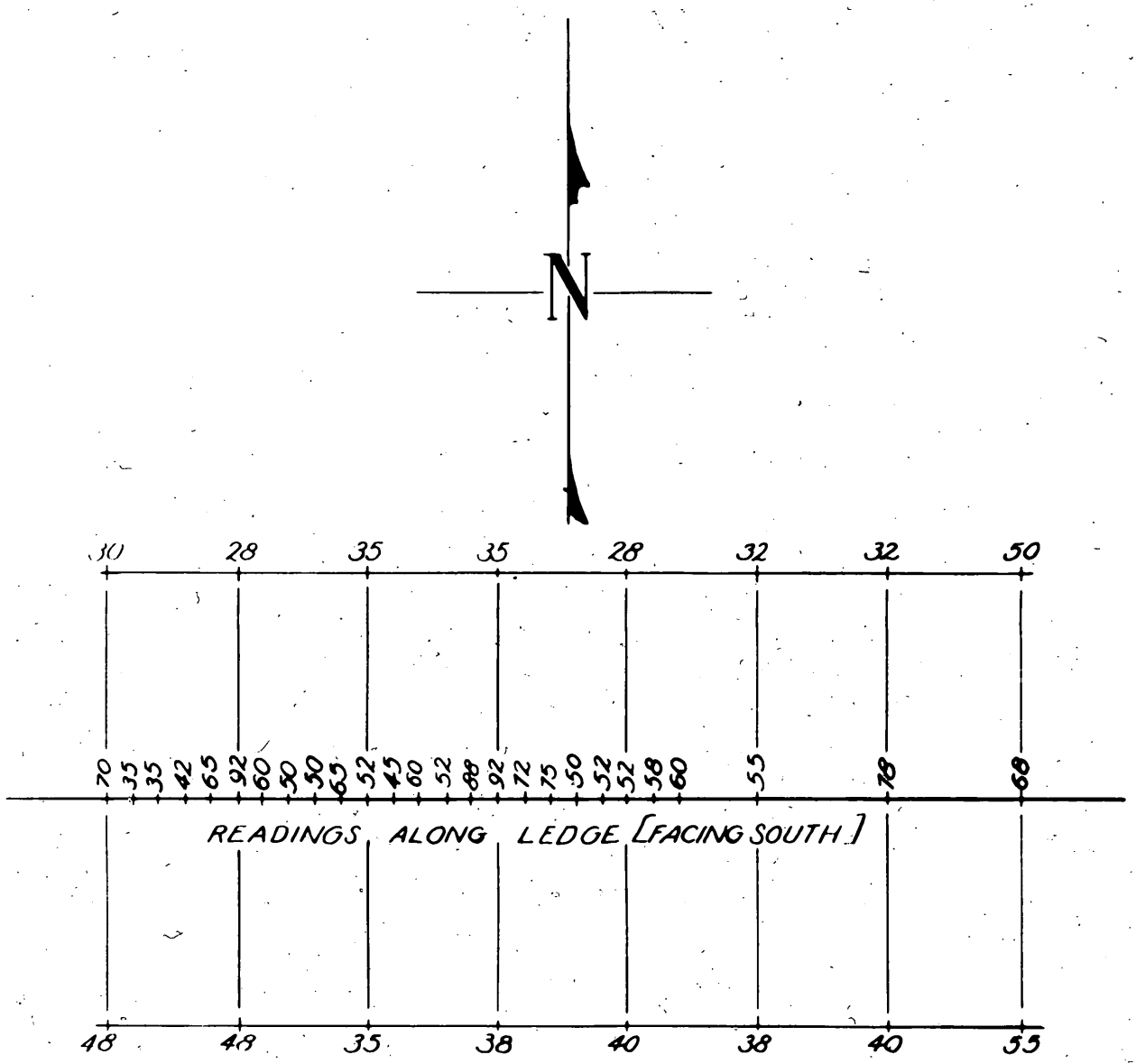
71-90

91-200

OVER 200

ISORAD CHART

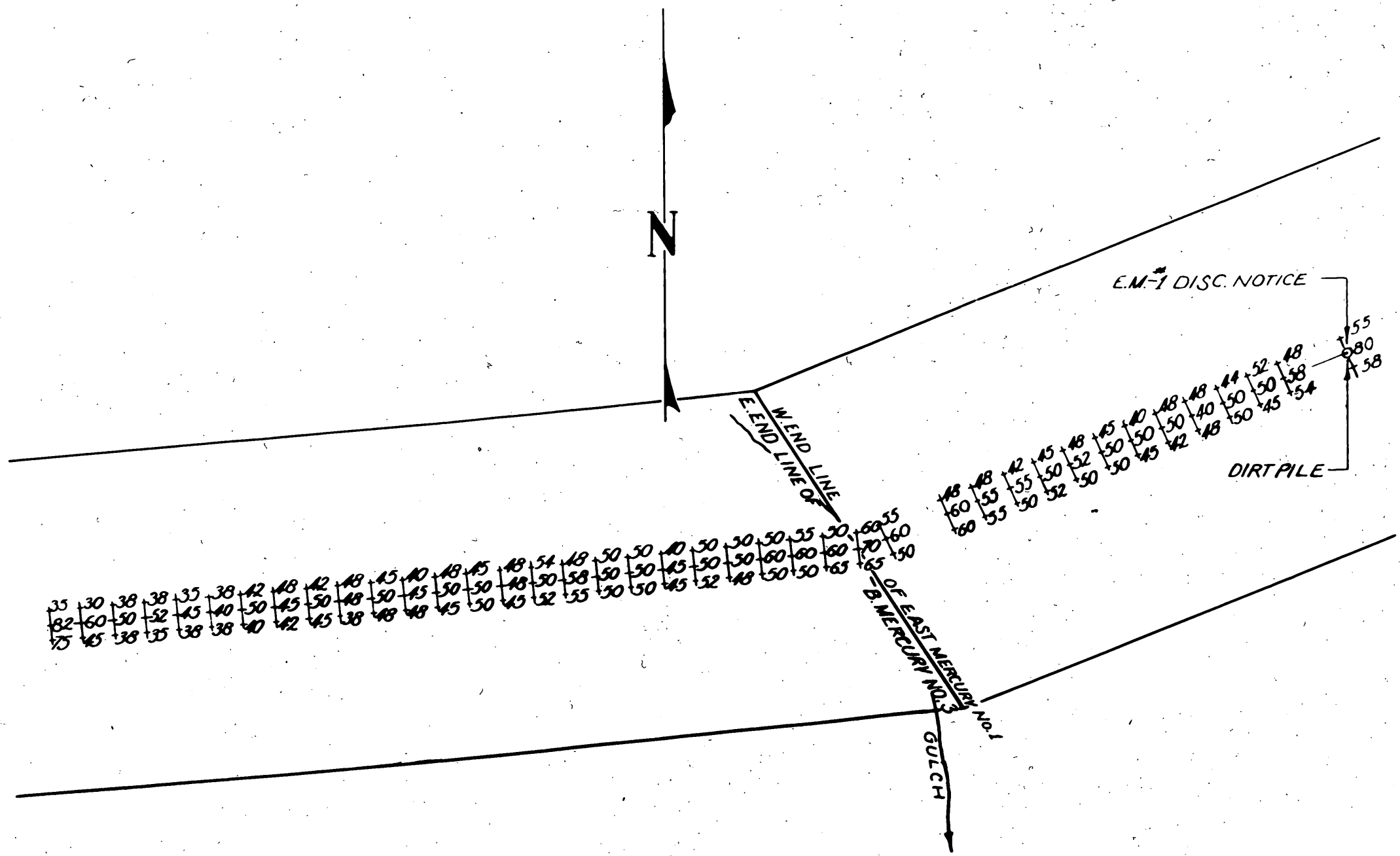
BOULDER MERCURY, No 3 CLAIM



PLAT SHOWING
SCINTILLOMETER READINGS
ON
EAST PORTION OF LEDGE
ON
BOULDER MERCURY Nº3 CLAIM

READING INTERVALS:
3' AND 15', E-W — 25', N-S
READINGS IN COUNTS/SECOND
WITH HALROSS SCINTILLOMETER
SCALE: 1" = 20' — DECLINATION: 21° E.

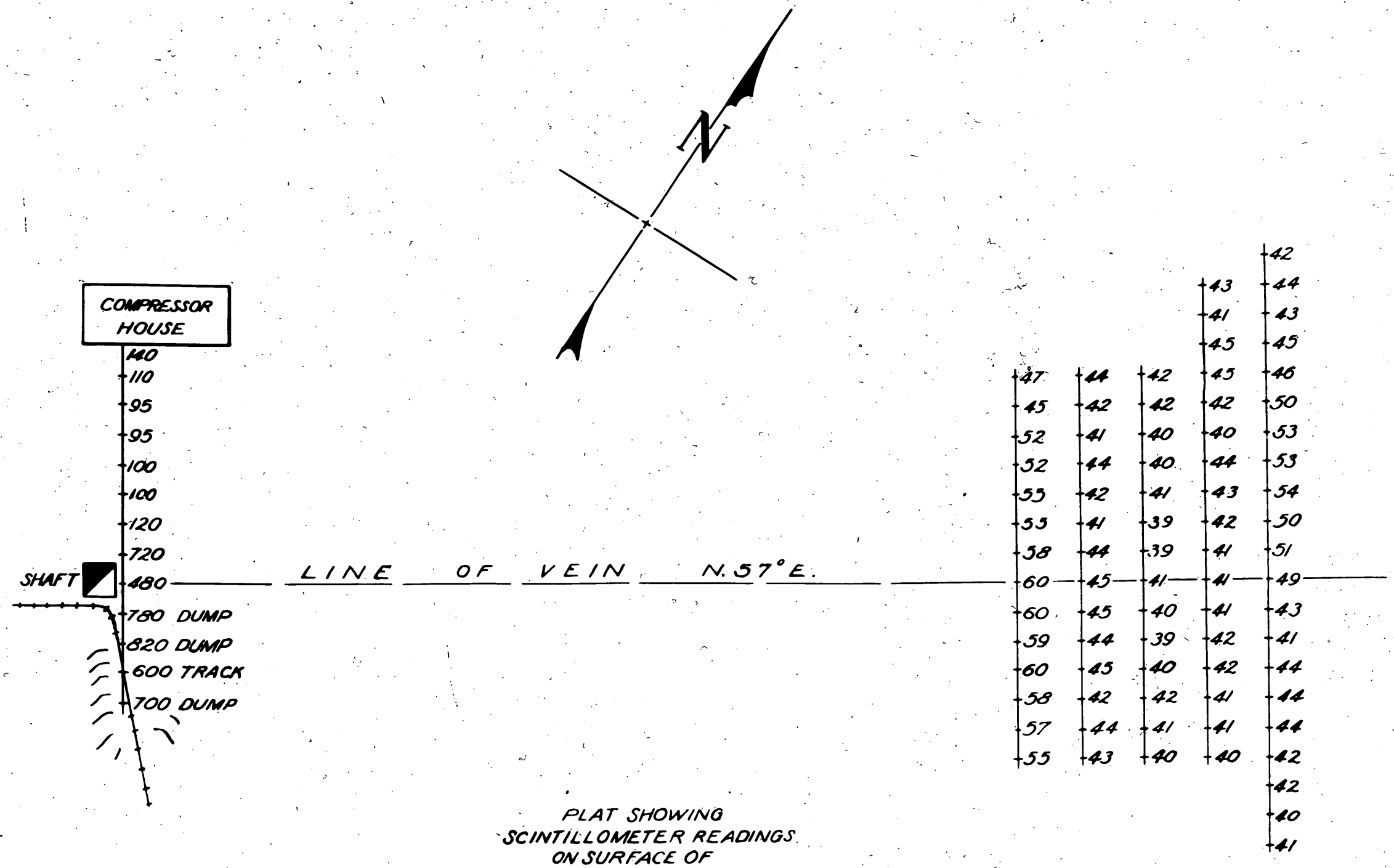
EXHIBIT 3



PLAT SHOWING
SCINTILLOMETER READINGS
ON
LODE LINES
OF
BOULDER MERCURY Nº 3
AND
EAST MERCURY Nº 1

READING INTERVALS:
25', NW-SE——50', NE-SW
READINGS IN COUNTS/SECOND
WITH HALROSS SCINTILLOMETER
SCALE: 1" = 200'——DECLINATION: 21 E.

EXHIBIT 4



PLAT SHOWING
SCINTILLOMETER READINGS
ON SURFACE OF
FREE ENTERPRISE MINE
[SILVER BELL CLAIM]

READING INTERVALS:
5'NW-SE ——— 10'NE-SW.
READINGS IN COUNTS/SECOND
WITH HALROSS SCINTILLOMETER
SCALE: 1"=20' ——— DECLINATION: 21°E.

EXHIBIT 5

VIEW SHOWING VEIN OUTCROP
ON
BOULDER MERCURY NO. 3 CLAIM

VIEW LOOKING WESTERLY
ALONG LODE LINE
ON
BOULDER MERCURY NO. 3-BOULDER MERCURY NO. 2

VIEW OF
BOULDER, MONTANA
AS SEEN FROM
BOULDER MERCURY GROUP

VIEW SHOWING
GREAT NORTHERN DEPOT
WITH REFERENCE TO
BOULDER MERCURY GROUP
(FAR BACKGROUND, AT LEFT)

VIEW SHOWING
FREE ENTERPRISE URANIUM MINE
AT
BOULDER, MONTANA

VIEW SHOWING
GENERAL TERRAIN
OF
BOULDER MERCURY GROUP
AS SEEN FROM
FREE ENTERPRISE NO. 6

VIEW LOOKING EASTERLY
ALONG LODE LINE
ON
BOULDER MERCURY NO. 3-EAST MERCURY NO. 1
(BUTTE-HELENA HIGHWAY, U. S. NO. 91, IN BACKGROUND)

VIEW SHOWING
PORTAL OF ADIT
BEING DRIVEN BY
NEWMONT MINING CORPORATION