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Arizuna
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Hedges
Selfridge
Johnson

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

OCT 25 1954

Mr. A. L. Osborn, President
ORO Mining Syndicate, Inc.
Box 208
Kellogg, Idaho

Re: Docket No. DMEA-3403 (Lead-Zinc)
Oro Mining Syndicate, Inc.
Zollars Property
Lincoln County, Montana

Dear Mr. Osborn:

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

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

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

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

Sincerely yours,

C. O. Mittendorf

Administrator

WRGriswold/er 10/22/54

Copy to: Docket
Admr. R. File
Op. Committee
Base Metals
Mr. C. H. Johnson, USBM
Mr. Kiilsgaard, USGS
Region II (2)
Chron.

R.C.

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

October 22, 1954

Memorandum

To: Administrator

From: W. R. Griswold, Chief, Base Metals Division

Subject: Denial of Application, Docket No. DMEA-3403 (Lead-Zinc), Oro Mining Syndicate, Inc., Zollars Property, Lincoln County, Montana

The property concerned in the cited application contains a narrow vein showing a relatively small amount of lead-zinc mineralization. We have records of forty tons of ore (presumably sorted) which was shipped, with a grade of 13% lead, 10% zinc, and 4 ounces of silver. About the best ore section shown on the assay map, over a length of 60 feet, shows an average ore width of 1.8 feet and a grade of 7.6% lead, 1.8% zinc, and 1.7 oz. silver.

There are already four adits on the vein which have explored it to a considerable degree.

In essence, while the vein definitely does contain lead-zinc mineralization, its general grade is far too low to permit of any real tonnage of direct shipping ore and the vein is too narrow, and the mineralization too sporadic to afford a mill tonnage.

We concur with the Field Team and the Commodity members in a denial.

W. R. Griswold

W. R. Griswold

File Copy
Surname

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

October 22, 1954

Memorandum

To: Administrator

From: W. R. Griswold, Chief, Base Metals Division

Subject: Denial of Application, Docket No. DMEA-3403 (Lead-Zinc), Oro Mining Syndicate, Inc., Zollars Property, Lincoln County, Montana

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We concur with the Field Team and the Commodity members in a denial.

W. R. Griswold

W. R. Griswold

WRG/er 10/22/54

Copy to: Docket
Base Metals
Chron.

R.C.L.

IN REPLY REFER TO:

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

Department of the Interior
Defense Minerals Administration
RECEIVED
OCT 20 1954

October 19, 1954

Re: DMEA-3403
Oro Mining Syndicate, Inc.
(Zollars Property)
Lincoln Co., Mont.
$11,248 - Lead-Zinc

Memorandum

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

From: E. L. Newcomb, U. S. Geological Survey

Subject: Review of field examination report

The Field Team has recommended this application be denied.

Four adits on the property have partly explored the Zollars vein over a strike distance of about 1,350 feet and for a vertical distance of approximately 500 feet. The vein follows a narrow shear or fault zone. The width of the vein varies from 4 to 42 inches, but averages less than 26 inches.

Sampling by the Field Team on the No. 2 and No. 3 levels indicated the width of mineralization ranges between 0.35 and 3.0 feet. However, the average width is less than 1.8 feet. The grade locally is as much as 18.4% combined lead-zinc over a width of 2 feet, but in general the vein is so narrow that the average grade of a 4 foot mining width would not permit profitable mining except as a very small operation.

Sufficient exploration has been done to indicate the marginal character of the ore deposit. The possible ore reserves on the property are not large enough to support a mill on the property. The 40 tons of ore produced and shipped during the summer of 1952 probably are representative of the future summer season production from this property.

I concur with the Field Team's conclusions and recommend the applicant's proposal be denied.

E. L. Newcomb
E. L. Newcomb

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

IN REPLY REFER TO:

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

October 19, 1954

Re: DMEA-3403
Ore Mining Syndicate, Inc.
(Zollars Property)
Lincoln Co., Mont.
$11,248 - Lead-Zinc

Memorandum

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

From: E. L. Newcomb, U. S. Geological Survey

Subject: Review of field examination report

The Field Team has recommended this application be denied.

Four adits on the property have partly explored the Zollars vein over a strike distance of about 1,350 feet and for a vertical distance of approximately 500 feet. The vein follows a narrow shear or fault zone. The width of the vein varies from 4 to 42 inches, but averages less than 26 inches.

Sampling by the Field Team on the No. 2 and No. 3 levels indicated the width of mineralization ranges between 0.35 and 3.0 feet. However, the average width is less than 1.8 feet. The grade locally is as much as 18.4% combined lead-zinc over a width of 2 feet, but in general the vein is so narrow that the average grade of a 4 foot mining width would not permit profitable mining except as a very small operation.

Sufficient exploration has been done to indicate the marginal character of the ore deposit. The possible ore reserves on the property are not large enough to support a mill on the property. The 40 tons of ore produced and shipped during the summer of 1952 probably are representative of the future summer season production from this property.

I concur with the Field Team's conclusions and recommend the applicant's proposal be denied.

ELNewcomb:hlm
G-10/19/54

E. L. Newcomb

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
O. M. Bishop, 3617

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 19 1954

October 18, 1954

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, U. S. Bureau of Mines

Subject: Application for $11,248 lead-zinc exploration project, DMEA-3403, Oro Mining Syndicate, Inc., Lincoln County, Montana

I have reviewed the subject application and the field team report recommending denial on the basis of an examination by J. J.Quinlan (USGS).

The Zollars' property of the Oro Mining Syndicate is located in the rugged Cabinet Mountains and is normally accessible only during the summer months. The workings consist of four adits which partially prospect the vein through a vertical range of 500 feet along a strike of about 1/4 mile. The vein, which occurs in the Snowshoe fault zone, was sampled by Quinlan in the No. 2 and 3 adits along some 360 feet of strike length, and found to average about 1.7 feet in width. During the summer of 1952, lessees shipped 40.5 tons of ore from two small stopes on the vein in the No. 2 adit. Ore produced averaged 3.98 ounces of silver, 13.56 percent lead and 10.36 percent zinc and was worth $31.89 per ton at the smelter. Royalty, freight and other costs reduced the net return to the lessee to $14.52 per ton. Inasmuch as the smelter values are more than double the average of the values in the ten channel samples cut by Quinlan in the No. 2 adit, it is apparent that the stoped area was rather carefully selected, and was not typical of the vein in its entirety.

It is also evident that 2-foot widths of such relatively high grade cannot be developed and mined economically at this location and that no good purpose would be served in additional discovery unless the ore widened appreciably so as to increase the output per unit of development opening and per unit of labor. Mr. Quinlan points out that the vein on the Zollars' property is not

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

considered to be the same structure as that mined in the nearby productive Snowshoe mine as it is much narrower and has a transverse strike to that of the Snowshoe structure.

Without evidence of structure favorable to increased ore widths, I can only concur with the field team in recommending denial of the application.

O. M. Bishop

O. M. Bishop

Copy to - Mr. Kiilsgaard, Room 5227
Minerals Division
C. H. Johnson
O. M. Bishop
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

Defense Minerals Administration
RECEIVED
OCT 11 1954

October 4, 1954

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

Re: Docket No. 3404 (lead-zinc)
Oro Mining Syndicate, Inc.
Zollars Property
Lincoln County, Montana

Dear Mr. Selfridge:

Enclosed is a geologic appraisal by J. J. Quinlan of the above cited application.

This property is a difficult one to appraise for although the veins are narrow and the exposed ore lenses are small there is undoubtedly ore of good grade on the property; however, Quinlan concludes that the ore grade is insufficient for direct shipping and that the possibilities of finding enough ore to support even a small mill are small.

The Field Team recognizes that this is a borderline and somewhat debatable case, but after careful consideration of his report, they concur with Quinlan's recommendation for denial.

By Field Team, Region II

A. E. Weissenborn
A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Thomas E Howard
For: Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosure

cc: USBM (2)
USGS (SRO)
Quinlan

Reviewed by
DMEA OPERATING COMMITTEE
10-18-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

OCT 11 1954

September 30, 1954
Reviewed by
DMEA OPERATING COMMITTEE
10-18-54
(date)

Memorandum

To: DMEA Field Team, Region II

From: J. J. Quinlan, Geologist, U. S. Geological Survey

Subject: Docket No. 3403 (lead-zinc), Field examination, Oro Mining Syndicate, Inc., Zollars Property, Lincoln County, Montana

INTRODUCTION

The Zollars property, formerly a part of the St. Paul property, was examined July 10 and 11, 1954, with reference to the subject loan application. Mr. A. L. Osborn, president of the Oro Mining Syndicate, assisted during the examination.

RECOMMENDATION

It is recommended that the Oro Mining Syndicate application for Government assistance to explore the Zollars property be denied.

APPLICANT

The applicant is the Oro Mining Syndicate, Inc., Box 208, Kellogg, Idaho. Officers of this corporation are A. L. Osborn, president, David D. Lohoefer, vice-president, and Earl C. Chilcott, secretary-treasurer.

The Oro Mining Syndicate is a small company. If a loan were granted, the company intends to raise their share of the exploration costs from the sale of stock.

Mr. A. L. Osborn, president of the company, under whose supervision the project would be carried out, is a man of practical mining experience. He has been associated with the mining industry for about 20 years as a miner, supervisor, and stockbroker. At present he is employed by M. A. Cleek, a stockbroker doing business at Spokane, Washington. It is believed that Mr. Osborn is fully qualified to supervise a project such as proposed by the applicant.

LOCATION

The Zollars property is in Lincoln County, Montana, and is about 14 miles south southwest of Libby, Montana. It is in the heart of the rugged Cabinet Mountain on the south side of Snowshoe Creek and is immediately east of the old Snowshoe mine from which there is a recorded production of over a million dollars. The altitude at the portal of the No. 3 adit is about 4,900 feet, and most of the surrounding mountain peaks and ridges are over 6,000 feet in altitude. Snowshoe Peak, 3 miles west of the mine, is over 8,700 feet in altitude.

The summer working season in this mountain area is about 4 months, from the first of June through September. It would be possible, but costly, to work through the winter months, and only a large operation would justify winter work under such conditions.

The property is reached from Libby by following U. S. Highway No. 2 seven miles south of town to the Forest Service road leading up Cherry Creek; thence 8 miles on the Cherry Creek road to Snowshoe Creek; thence 3 miles on a dirt road leading up Snowshoe Creek to the Snowshoe mine and the Zollars property.

PROPERTY

The property consists of 3 unpatented quartz lode mining claims: Fern, Faith, and Topsy. These claims are recorded in the office of the Lincoln County Recorder at Libby, Montana. The application and lease agreement accompanying the application contains a statement regarding book and page number where these claims are recorded; however, there appear to be several discrepancies in the statement. This point would have to be clarified only if the Government considered granting a contract.

The map submitted with the application shows the Zollars claim group with relation to other claims in the area. The claims shown on this map as belonging to the Zollars group are: Defender, St. Paul, and St. Louis. Mr. Osburn states that the claims have been relocated and the names changed. He further reports that the Fern, Faith, and Topsy claims correspond respectively to the original Defender, St. Paul, and St. Louis claims.

The property is owned by Walter C. Zollars and Irene R. Zollars of Libby, Montana. It is leased to the applicant under the terms of a lease agreement dated July 16, 1954. A copy of this lease agreement is a part of the application.

PAST PRODUCTION

During the summer of 1952 lessees shipped 40.5 tons of ore from the No. 2 adit to the Bunker Hill Smelter at Bradley, Idaho. Smelter return statements covering these shipments are a part of the application. Tabulated below are the tonnage and grade of these shipments.

Lot No.	Date of Arrival at Smelter	Tons	Silver oz.	Lead percent	Zinc percent
1	7/30/52	6.4505	5.8	23.55	15.75
2	8/18/52	16.732	3.05	12.15	10.80
3	8/21/52	5.499	2.9	11.00	10.30
4	9/8/52	6.045	4.75	11.65	7.25
5	9/10/52	5.693	4.85	10.90	6.30
Total		40.4195	3.98	13.56	10.36

At the time of these shipments the market price of lead was $0.16 per pound and the price of zinc varied between $0.14 and $0.15 per pound. The price paid for domestic-mined silver at the time was $0.90 per ounce. The average net value per ton applied by the smelter for this ore was $31.89 per ton. After deductions for freight, haulage, representing fee, and 10 percent royalty to the owners, the lessees' net proceeds from the sale of this ore amounted to $14.52 per ton.

There is no other recorded production from the property; if any, it is small. Outside the No. 2 adit level stopes which the lessees worked in 1952 there is only one other stope of any significance. This is near the portal of the No. 4 adit where a narrow stope about 35 feet long extends above the adit level for a distance of 15 feet.

MINE WORKINGS

The principal mine workings consist of four adits on the south side of Snowshoe Creek. These adits prospect the vein on the property at various points along the strike over a distance of approximately 1,350 feet, and a vertical range of approximately 500 feet. The total length of the four adits is about 750 feet, of which about 690 feet consist of drifts along the vein. Three of the four adits, Nos. 2, 3, and 4, are shown on the map accompanying the application. The No. 1 adit, which is not shown on the map, is approximately 250 feet southeast of the portal of the No. 2 adit and approximately 180 feet higher than the No. 2 adit. This adit follows the vein for a distance of about 65 feet.

All adits were apparently driven by hand work. They are relatively narrow, averaging about 4 feet wide.

GEOLOGY

The property is within the Libby quadrangle. The geology and ore deposits of this quadrangle are described in U. S. Geological Survey Bulletin 956 by Russell Gibson 1/. This bulletin contains detailed descriptions of the neighboring Snowshoe mine (pp. 110-112) and the St. Paul property (pp. 117-118), a part of which is now the Zollars property. The author wishes to acknowledge that it has been necessary to borrow freely information contained in Gibson's bulletin on the Libby quadrangle, particularly with reference to the general geologic setting of the deposit.

The Snowshoe fault, one of the major faults of the Libby quadrangle, crosses the Snowshoe mine immediately west of the Zollars property. The fault strikes north or within a few degrees of north and, for the most part, is nearly vertical. In the vicinity of the Snowshoe mine the rocks on the west side of the fault are thick-bedded limestone and calcareous argillites of the Wallace formation of the pre-Cambrian Belt series. The bedding in these rocks generally strikes N. 30° W., and dips at a moderate angle to the southwest. East of the fault, on which side the Zollars property is located, the rocks are quartzites and argillites of the Ravalli formation of the Belt series. The bedding in these rocks generally strikes north to northwest and dips at a moderate angle to the east or northeast.

Several lead-silver-zinc mines and prospects are found along the Snowshoe fault, the most important of which is the Snowshoe mine. At the Snowshoe mine ore occurs within the principal shear of the fault which is reported to attain a maximum width of 12 feet, though through most of the workings it is reported to be less than half that wide. The reader is referred to U. S. Geological Survey Bulletin 956 for a more detailed description of the Snowshoe mine. Although the close proximity of the Snowshoe mine, one of the major past-producing properties of the Libby district, to the Zollars property is of interest, it is not considered of major importance as the vein exposed on the Zollars property is much smaller and its strike is transverse to that of the Snowshoe fault.

The vein exposed on the Zollars property strikes N. 48° to 70° W., and dips 35° to 80° SW, the average dip being about 65° SW. The four adits on the property prospect the vein at various points along the strike over a distance of approximately 1,350 feet and over a vertical range of approximately 500 feet.

The vein exposed in these workings follows a small shear or fault zone. At places in the No. 2 and No. 3 adits two distinct branches of the vein are recognized (see map accompanying application and map accompanying this memorandum). The vein varies in width from 4 to 42 inches but, for the most part, it is less than 26 inches wide.

1/ Gibson, Russell, Geology and ore deposits of the Libby quadrangle, Montana: U. S. Geol. Survey Bull. 956, 1948.

The principal primary vein minerals are quartz, galena, sphalerite, pyrite, and small amounts of chalcopyrite. The vein is oxidized or partially oxidized, in a considerable portion of the workings. Only in the No. 4 adit and the last 60 feet of the No. 2 adit has the vein not been appreciably oxidized. Where oxidized the vein contains quartz, limonite, cerussite and, in places, manganese oxides, gypsum, and small amounts of azurite and malchite.

On Cherry Creek, approximately a mile distant from the Zollars property, Gibson 2/ reports that an adit follows for 600 feet a fault which is presumed to be the same fault structure which the vein follows on the Zollars property. This adit was inaccessible at the time of the examination. Gibson reports, however, that the fault exposed in the adit on Cherry Creek strikes N. 62° to 72° W. and dips 65° SW. He further reports:

> "The fault zone contains 3 feet of breccia and 2 to 3 inches of gouge, both stained by limonite but containing little sulfide." 3/

RESULTS OF SAMPLING

During the examination the vein exposed in the No. 2 and No. 3 adits was sampled at approximately 20-foot intervals. The results of this sampling is shown on the map accompanying this memorandum. Samples taken across the vein in the sulfide zone on the No. 2 adit level averaged 1.1 feet in width, a trace gold, 2.6 ounces silver, 11.4 percent lead, and 5.9 percent zinc. Samples taken within the oxide zone in the No. 2 adit averaged 2.3 feet in width, a trace gold, 0.9 ounce silver, 5.1 percent lead, 1.3 percent zinc. In calculating this average, samples Nos. 132 and 133 across both splits of the vein have been considered as one sample; also, it should be noted that sample No. 135 does not include the entire vein, as a part of it is in the wall of the drift. With the exception of that section of the vein exposed in the No. 3 adit from the face to a point 60 feet back from the face, the samples taken in this adit are very low grade. The samples taken within 60 feet of the face averaged 1.8 feet in width, a trace gold, 1.7 ounces silver, 7.6 percent lead, and 1.8 percent zinc.

It is of interest to note the improvement in the grade of the vein near the face of the No. 3 adit, as this area is directly down dip from a part of the vein exposed in the No. 2 adit where the over-all samples are much better than in the No. 3 adit.

2/ Idem, Gibson, Russell, p. 118
3/ Idem, Gibson, Russell, p. 118

It is evident from the samples that where the vein is almost completely oxidized most of the zinc has been removed, which is to be expected. In the case of lead it is assumed that the assay results within the oxidized portion of the vein give a fair estimate as to the original lead content of the vein before oxidation. Therefore in evaluating the sample from the oxidized zone one should consider that ore in the sulfide zone will also contain some zinc. On the basis of the few samples in the sulfide zone and the small production from the two stopes in this zone, it is difficult to estimate the amount of zinc that can be expected in the sulfide zone. However, on the basis of present information it appears that the amount of zinc in the sulfide zone will be slightly lower than the lead.

FACTORS TO BE CONSIDERED IN EVALUATING CHANCES OF COMMERCIAL PRODUCTION FROM THE PROPERTY

It is evident that the property has some merit as a prospect. It is very doubtful, however, whether or not it can, in the foreseeable future, be of any economic interest. The vein is relatively narrow, but sampling indicated that parts of it may contain lead, zinc, and silver of some interest in the sulfide zone.

The ore shipped in 1952 came primarily from two small stopes within the sulfide zone in the No. 2 adit. The ore mined from these two stopes represents two small high-grade lenses within the vein. In back of the larger of these two stopes, and the one from which most of the production came (see map accompanying this memorandum), the vein consists of two strands; the total width of these two strands is only 0.9 foot. Also, the principal ore mineral in the back of this stope is sphalerite, with lesser amounts of galena; whereas, the smelter settlements indicate that the ore stoped contained more galena than sphalerite. The lessees were little interested in the zinc because of the poor smelter settlements for this metal. It is, therefore, concluded that mining stopped for two reasons; one, the vein probably narrowed and two, zinc increased. It is evident from the smelter returns that at best the ore mined and shipped from this narrow vein must be considered marginal.

No appreciable amount of ore could be produced by attempting to mine small high-grade pockets of ore along the vein and shipping it directly to the smelter, as was done by the lessees in 1952. The cost of exploration and development would make such an operation unfeasible.

In order for the property to be attractive at all, some provision would have to be made to provide for milling facilities so as to mine a greater percentage of the vein than was done by the lessees in 1952. However, the vein is small and work along it to date indicates that it would not be possible to develop enough ore to justify even a small mill for the property.

There are no custom milling facilities in the Libby district, or near enough to be of any value to the property. Also, there is little likelihood that such facilities will be available in the foreseeable future.

EVALUATION OF APPLICANT'S PROPOSAL AND CONCLUSION

The applicant proposes to extend the No. 3 adit 200 feet, in order to explore the vein under that area on the No. 2 adit level from which the lessees shipped 40.5 tons of ore in 1952. In order to facilitate work on the project, the applicant also proposed to improve about one-half of the access road on the property to the No. 3 adit and, also, to enlarge 200 feet of the existing No. 3 adit.

The proposed extension of the No. 3 adit would, for the most part, probably explore the vein in the sulfide zone under the best showing on the property. Although the applicant's proposal is modest, it is believed that it would not result in a significant discovery, as there is little likelihood of any appreciable commercial production from the property in the foreseeable future. For this reason, it is recommended that the application be denied.

Enclosure

Distribution:
- DMEA (Orig. & 3)
- USBM (2)
- USGS (SRO)
- Docket
- Quinlan

XXXXXXXXXXXXXXXXX
No. 157 Howard Street
Spokane 4, Washington

RECEIVED
OCT 11 1954

October 4, 1954

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

Re: Docket No. 3 (lead-zinc)
Ore Mining Syndicate, Inc.
Zellers Property
Lincoln County, Montana

Dear Mr. Selfridge:

Enclosed is a geologic appraisal by J. J. Quinlan of the above cited application.

This property is a difficult one to appraise for although the veins are narrow and the exposed ore lenses are small there is undoubtedly ore of good grade on the property; however, Quinlan concludes that the ore grade is insufficient for direct shipping and that the possibilities of finding enough ore to support even a small mill are small.

The Field Team recognizes that this is a borderline and somewhat debatable case, but after careful consideration of his report, they concur with Quinlan's recommendation for denial.

By Field Team, Region II

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosure

cc: USGS (2)
USGS (SRO)
Quinlan

Reviewed by -
DMEA OPERATING COMMITTEE
10-18-54
(date)

[illegible]
[illegible]. 157 Howard Street
Spokane 4, Washington

September 30, 1954

Memorandum

To: DMEA Field Team, Region II

From: T. J. Quinlan, Geologist, U. S. Geological Survey

Subject: Docket No. 3403 (lead-zinc), Field examination, Oro Mining Syndicate, Inc., Dollars Property, Lincoln County, Montana

INTRODUCTION

The Dollars property, formerly a part of the St. Paul property, was examined July 10 and 11, 1954, with reference to the subject loan application. Mr. A. L. Osborn, president of the Oro Mining Syndicate, assisted during the examination.

RECOMMENDATION

It is recommended that the Oro Mining Syndicate application for Government assistance to explore the Dollars property be denied.

APPLICANT

The applicant is the Oro Mining Syndicate, Inc., Box 208, Kellogg, Idaho. Officers of this corporation are A. L. Osborn, president, David D. Schoefer, vice-president, and Earl C. Chilcott, secretary-treasurer.

The Oro Mining Syndicate is a small company. If a loan were granted, the company intends to raise their share of the exploration costs from the sale of stock.

Mr. A. L. Osborn, president of the company, under whose supervision the project would be carried out, is a man of practical mining experience. He has been associated with the mining industry for about 20 years as a miner, supervisor, and stockbroker. At present he is employed by M. A. Cleek, a stockbroker doing business at Spokane, Washington. It is believed that Mr. Osborn is fully qualified to supervise a project such as proposed by the applicant.

Reviewed by
DMEA Property Committee
10-18-54
(date)

LOCATION

The Vollars property is in Lincoln County, Montana, and is about 14 miles south southwest of Libby, Montana. It is in the heart of the rugged Cabinet Mountain on the south side of Snowshoe Creek and is immediately east of the old Snowshoe mine from which there is a recorded production of over a million dollars. The altitude at the portal of the No. 3 adit is about 4,900 feet, and most of the surrounding mountain peaks and ridges are over 6,000 feet in altitude. Snowshoe Peak, 3 miles west of the mine, is over 8,700 feet in altitude.

The summer working season in this mountain area is about 4 months, from the first of June through September. It would be possible, but costly, to work through the winter months, and only a large operation would justify winter work under such conditions.

The property is reached from Libby by following U. S. Highway No. 2 seven miles south of town to the Forest Service road leading up Cherry Creek; thence 8 miles on the Cherry Creek road to Snowshoe Creek; thence 3 miles on a dirt road leading up Snowshoe Creek to the Snowshoe mine and the Vollars property.

PROPERTY

The property consists of 3 unpatented quartz lode mining claims: Fern, Faith, and Topsy. These claims are recorded in the office of the Lincoln County Recorder at Libby, Montana. The application and lease agreement accompanying the application contains a statement regarding book and page number where these claims are recorded; however, there appear to be several discrepancies in the statement. This point would have to be clarified only if the Government considered granting a contract.

The map submitted with the application shows the Vollars claim group with relation to other claims in the area. The claims shown on this map as belonging to the Vollars group are: Defender, St. Paul, and St. Louis. Mr. Osburn states that the claims have been relocated and the names changed. He further reports that the Fern, Faith, and Topsy claims correspond respectively to the original Defender, St. Paul, and St. Louis claims.

The property is owned by Walter C. Vollars and Irene R. Vollars of Libby, Montana. It is leased to the applicant under the terms of a lease agreement dated July 16, 1954. A copy of this lease agreement is a part of the application.

PAST PRODUCTION

During the summer of 1952 lessees shipped 40.5 tons of ore from the No. 2 adit to the Bunker Hill Smelter at Kellogg, Idaho. Smelter return statements covering these shipments are a part of the application. Tabulated below are the tonnage and grade of these shipments.

Lot No.	Date of Arrival at Smelter	Tons	Silver oz.	Lead Percent	Zinc Percent
1	7/30/52	6.4505	5.8	25.25	15.75
2	8/18/52	16.738	3.05	12.15	10.80
3	8/21/52	5.499	2.9	11.00	10.30
4	9/8/52	6.045	4.75	11.65	7.85
5	9/10/52	5.695	4.05	10.90	6.30
Total		40.4195	3.98	13.56	10.36

At the time of these shipments the market price of lead was $0.16 per pound and the price of zinc varied between $0.14 and $0.15 per pound. The price paid for domestic-mined silver at the time was $0.90 per ounce. The average net value per ton applied by the smelter for this ore was $31.89 per ton. After deductions for freight, haulage, representing fee, and 10 percent royalty to the owners, the lessees' net proceeds from the sale of this ore amounted to $14.58 per ton.

There is no other recorded production from the property; if any, it is small. Outside the No. 2 adit level stopes which the lessees worked in 1952 there is only one other stope of any significance. This is near the portal of the No. 4 adit where a narrow stope about 35 feet long extends above the adit level for a distance of 15 feet.

MINE WORKINGS

The principal mine workings consist of four adits on the south side of Snowshoe Creek. These adits prospect the vein on the property at various points along the strike over a distance of approximately 1,350 feet, and a vertical range of approximately 300 feet. The total length of the four adits is about 750 feet, of which about 690 feet consist of drifts along the vein. Three of the four adits, Nos. 2, 3, and 4, are shown on the map accompanying the application. The No. 1 adit, which is not shown on the map, is approximately 850 feet southeast of the portal of the No. 2 adit and approximately 180 feet higher than the No. 2 adit. This adit follows the vein for a distance of about 65 feet.

All adits were apparently driven by hand work. They are relatively narrow, averaging about 4 feet wide.

GEOLOGY

The property is within the Libby quadrangle. The geology and ore deposits of this quadrangle are described in U. S. Geological Survey Bulletin 956 by Russell Gibson 1/. This bulletin contains detailed descriptions of the neighboring Snowshoe mine (pp. 110-112) and the St. Paul property (pp. 117-118), a part of which is now the Collars property. The author wishes to acknowledge that it has been necessary to borrow freely information contained in Gibson's bulletin on the Libby quadrangle, particularly with reference to the general geologic setting of the deposit.

The Snowshoe fault, one of the major faults of the Libby quadrangle, crosses the Snowshoe mine immediately west of the Collars property. The fault strikes north or within a few degrees of north and, for the most part, is nearly vertical. In the vicinity of the Snowshoe mine the rocks on the west side of the fault are thick-bedded limestone and calcareous argillites of the Wallace formation of the pre-Cambrian Belt series. The bedding in these rocks generally strikes N. 30° W., and dips at a moderate angle to the southwest. East of the fault, on which side the Collars property is located, the rocks are quartzites and argillites of the Ravelli formation of the Belt series. The bedding in these rocks generally strikes north to northwest and dips at a moderate angle to the east or northeast.

Several lead-silver-zinc mines and prospects are found along the Snowshoe fault, the most important of which is the Snowshoe mine. At the Snowshoe mine ore occurs within the principal shear of the fault which is reported to attain a maximum width of 12 feet, though through most of the workings it is reported to be less than half that wide. The reader is referred to U. S. Geological Survey Bulletin 956 for a more detailed description of the Snowshoe mine. Although the close proximity of the Snowshoe mine, one of the major past-producing properties of the Libby district, to the Collars property is of interest, it is not considered of major importance as the vein exposed on the Collars property is much smaller and its strike is transverse to that of the Snowshoe fault.

The vein exposed on the Collars property strikes N. 46° to 70° W., and dips 35° to 80° SW, the average dip being about 65° SW. The four adits on the property prospect the vein at various points along the strike over a distance of approximately 1,350 feet and over a vertical range of approximately 500 feet.

The vein exposed in these workings follows a small shear or fault zone. At places in the No. 2 and No. 3 adits two distinct branches of the vein are recognized (see map accompanying application and map accompanying this memorandum). The vein varies in width from 4 to 42 inches but, for the most part, it is less than 20 inches wide.

1/ Gibson, Russell, Geology and ore deposits of the Libby quadrangle, Montana: U. S. Geol. Survey Bull. 956, 1948.

The principal primary vein minerals are quartz, galena, sphalerite, pyrite, and small amounts of chalcopyrite. The vein is oxidized or partially oxidized, in a considerable portion of the workings. Only in the No. 4 adit and the last 60 feet of the No. 2 adit has the vein not been appreciably oxidized. Where oxidized the vein contains quartz, limonite, cerussite and, in places, manganese oxides, gypsum, and small amounts of azurite and malchite.

On Cherry Creek, approximately a mile distant from the Zollars property, Gibson 2/ reports that an adit follows for 600 feet a fault which is presumed to be the same fault structure which the vein follows on the Zollars property. This adit was inaccessible at the time of the examination. Gibson reports, however, that the fault exposed in the adit on Cherry Creek strikes N. 62° to 72° W. and dips 65° SW. He further reports:

> "The fault zone contains 3 feet of breccia and 2 to 3 inches of gouge, both stained by limonite but containing little sulfide." 3/

RESULTS OF SAMPLING

During the examination the vein exposed in the No. 2 and No. 3 adits was sampled at approximately 20-foot intervals. The results of this sampling is shown on the map accompanying this memorandum. Samples taken across the vein in the sulfide zone on the No. 2 adit level averaged 1.1 feet in width, a trace gold, 2.6 ounces silver, 11.4 percent lead, and 5.9 percent zinc. Samples taken within the oxide zone in the No. 2 adit averaged 2.3 feet in width, a trace gold, 0.9 ounce silver, 5.1 percent lead, 1.3 percent zinc. In calculating this average, samples Nos. 132 and 133 across both splits of the vein have been considered as one sample; also, it should be noted that sample No. 135 does not include the entire vein, as a part of it is in the wall of the drift. With the exception of that section of the vein exposed in the No. 3 adit from the face to a point 60 feet back from the face, the samples taken in this adit are very low grade. The samples taken within 60 feet of the face averaged 1.8 feet in width, a trace gold, 1.7 ounces silver, 7.6 percent lead, and 1.8 percent zinc.

It is of interest to note the improvement in the grade of the vein near the face of the No. 3 adit, as this area is directly down dip from a part of the vein exposed in the No. 2 adit where the over-all samples are much better than in the No. 3 adit.

2/ Idem, Gibson, Russell, p. 118
3/ Idem, Gibson, Russell, p. 118

It is evident from the samples that where the vein is almost completely oxidized most of the zinc has been removed, which is to be expected. In the case of lead it is assumed that the assay results within the oxidized portion of the vein give a fair estimate as to the original lead content of the vein before oxidation. Therefore in evaluating the sample from the oxidized zone one should consider that ore in the sulfide zone will also contain some zinc. On the basis of the few samples in the sulfide zone and the small production from the two stopes in this zone, it is difficult to estimate the amount of zinc that can be expected in the sulfide zone. However, on the basis of present information it appears that the amount of zinc in the sulfide zone will be slightly lower than the lead.

FACTORS TO BE CONSIDERED IN EVALUATING CHANCES OF COMMERCIAL PRODUCTION FROM THE PROPERTY

It is evident that the property has some merit as a prospect. It is very doubtful, however, whether or not it can, in the foreseeable future, be of any economic interest. The vein is relatively narrow, but sampling indicated that parts of it may contain lead, zinc, and silver of some interest in the sulfide zone.

The ore shipped in 1958 came primarily from two small stopes within the sulfide zone in the No. 2 adit. The ore mined from these two stopes represents two small high-grade lenses within the vein. In back of the larger of these two stopes, and the one from which most of the production came (see map accompanying this memorandum), the vein consists of two strands; the total width of these two strands is only 0.9 foot. Also, the principal ore mineral in the back of this stope is sphalerite, with lesser amounts of galena; whereas, the smelter settlements indicate that the ore stoped contained more galena than sphalerite. The lessees were little interested in the zinc because of the poor smelter settlements for this metal. It is, therefore, concluded that mining stopped for two reasons; one, the vein probably narrowed and two, zinc increased. It is evident from the smelter returns that at best the ore mined and shipped from this narrow vein must be considered marginal.

No appreciable amount of ore could be produced by attempting to mine small high-grade pockets of ore along the vein and shipping it directly to the smelter, as was done by the lessees in 1958. The cost of exploration and development would make such an operation unfeasible.

In order for the property to be attractive at all, some provision would have to be made to provide for milling facilities so as to mine a greater percentage of the vein than was done by the lessees in 1958. However, the vein is small and work along it to date indicates that it would not be possible to develop enough ore to justify even a small mill for the property.

There are no custom milling facilities in the Libby district, or near enough to be of any value to the property. Also, there is little likelihood that such facilities will be available in the foreseeable future.

EVALUATION OF APPLICANT'S PROPOSAL AND CONCLUSION

The applicant proposes to extend the No. 3 adit 200 feet, in order to explore the vein under that area on the No. 2 adit level from which the lessees shipped 40.5 tons of ore in 1952. In order to facilitate work on the project, the applicant also proposed to improve about one-half of the access road on the property to the No. 3 adit and, also, to enlarge 200 feet of the existing No. 3 adit.

The proposed extension of the No. 3 adit would, for the most part, probably explore the vein in the sulfide zone under the best showing on the property. Although the applicant's proposal is modest, it is believed that it would not result in a significant discovery, as there is little likelihood of any appreciable commercial production from the property in the foreseeable future. For this reason, it is recommended that the application be denied.

Enclosure

Distribution:
DMEA (Orig. & 3)
WHEM (2)
WRGS (RMO)
Dunham
Quinlan

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

June 29, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region II

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

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

DMEA - 3403 ORO Mining Syndicate, Inc.

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

Oro Mining Syndicate
Box 208
Kellogg, Idaho

June 29, 1954
Subject: DMEA-3403
Re: Exploration Assistance
Zollars Group

Gentlemen:

The receipt of your application dated June 21, 1954 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3403 and referred to the Base Metals Division.

Kindly refer to in any future correspondence relating to your application.

Sincerely yours,

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

June 23, 1954

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

Re: DMEA application (lead-zinc)
Oro Mining Syndicate, Inc.
Lincoln County, Montana

Dear Mr. Selfridge:

Enclosed are the original and two copies of an application submitted by the Oro Mining Syndicate, Inc. Attached to the application is one copy of the applicant's lease agreement on the subject property, and six signed copies of the Owner's Consent to Lien agreement. One copy of the application has been retained for the files of this office.

The applicant proposes to explore the property by improving one-half mile of access road to the No. 3 tunnel site, rehabilitate 200 feet of the No. 3 tunnel, and to extend this tunnel for a distance of 200 feet.

On the basis of information in the application, the applicant's proposal is sound and appears to have considerable merit. We are therefore scheduling the property for an immediate examination and will report the results of this examination to you as soon as possible.

Sincerely yours,

Thor H. Kiilsgaard
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures
cc: USBM (2)
Geologist

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D.C.
No. 157 Howard Street
Spokane 4, Washington

June 23, 1954

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

Re: DMEA application (loan-exc)
Oro Mining Syndicate, Inc.
Lincoln County, Montana

Dear Mr. Selfridge:

Enclosed are the original and two copies of an application submitted by the Oro Mining Syndicate, Inc. Attached to the application is one copy of the applicant's lease agreement on the subject property, and six signed copies of the Owner's Consent to Lease agreement. One copy of the application has been retained for the files of this office.

The applicant proposes to explore the property by improving one-half mile of access road to the No. 3 tunnel site, rehabilitate 200 feet of the No. 3 tunnel, and to extend this tunnel for a distance of 200 feet.

On the basis of information in the application, the applicant's proposal is sound and appears to have considerable merit. We are therefore scheduling the property for an immediate examination and will report the results of this examination to you as soon as possible.

Sincerely yours,

Thor H. Kiilsgaard
for L. H. Eisenbarth
Executive Officer, DMEA
Field Team, Region II

Enclosures
cc: USBM (2)
Geologist

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

RECEIVED
JUN 23 1954
U. S. G. S.
SPOKANE, WASH.

Not to be filled in by applicant

Docket No. 3403
Metal or Mineral Lead-Zinc
Date Received
Estimated Cost $11,248
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: ORO Mining Syndicate, Inc. Incorporated in state of Idaho.
A. L. Osborn, President, Box 208 Kellogg, Idaho
David D. Lohoefer, Vice President, Kellogg, Idaho
Earl C. Chilcott, Secretary-Treasurer, Kellogg, Idaho

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Fern Quartz Mining Claim, #29904-BK66, Record Book 568-569; FAITH Quartz Mining Claim, No.29903-BK66; Record Book page 567-568; TOPSY Quartz Mining Claim, No.26482; Record Book No.70, page 142, recorded in the office of the County Recorder, Libby, Montana, County seat of Lincoln County, State of Montana.

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

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Lease and Option. Royalties apply on purchase.

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

(*e*) If you own the land, describe any liens or encumbrances on it None

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

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

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

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

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

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

16—66551-1

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[X] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated June 21, 1954

O.K. Mining Syndicate, Inc.
(Applicant)

By R. L. Osborn, President

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

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

Oro Mining Syndicate, Inc.

Box 208
KELLOGG, IDAHO

June 21, 1954

D.M.E.A.
157 South Howard
Spokane, Washington

ATTN: Mr. Willard Puffit

Dear Sir;

Regarding our enclosed application for a D.M.E.A. Exploration Loan, I would like to point out that we are handicapped by a short season. It is not my intention to ask any special favor, but rather to effect a lower cost project by being able to start and finish same during this summer season.

Without expensive equipment it is rather risky to figure on working much later than October 1st. Because this situation does exist, we would appreciate our application being processed as speedily as possible.

Respectfully yours,

A. L. Osborn

A.L. OSBORN, President
ORO Mining Syndicate, Inc.

ZOLLARS GROUP
(Formerly identified as the St.Paul Group)

Location:

4-A The property is located approximately seventeen (17) miles South of Libby, Montana and may be reached by U.S. Highway No.2 Southeast From Libby, Montana to a forest service road seven (7) miles out. Thence ten (10) miles Southwest on the Snowshoe road. This road is well marked by U.S. Forest Service signs, indicating Big Cherry Creek and Snowshoe Mine road. Field Examiner may contact W.C. Zollars, #12 Mill Row; Libby, Montana for exact directions to property. Zollars telephone number is 259-J.

4-D & 4-E The property is accessable only during the summer months, and any examination or exploration must be done at the earliest possible date. The Snowshoe Mine formerly operated on a year round basis, but was a large operation and hauled their ore by sled in the winter time to the rail head at Libby, Montana. There are no problems of supplies for an exploration project of this nature and sufficient housing is available at the property for a small crew. Sufficient water and timber are available on, or near, the property. Power will be deisel compressor unit. (The Snowshoe Mine developed it's own electrical generating plant from the water power available.)

DESCRIPTION OF GEOLOGY AND WORKINGS

4-0 The Northwest end of the property is on the South side of Snowshoe Creek; East of the Snowshoe Mine and it's Southeast end is on the slope North of Cherry Creek. The claims on Snowshoe Creek are connected by a road with the Snowshoe Mine. On the South side of Snowshoe Creek East of the Snowshoe Mine three (3) adits have been driven on the vein structure; which strikes 57°N; 60°W and dips 70°SW. The two principle adits make a total of four hundred (400) feet of workings, containing a fault zone of eighteen (18) to forty-two (42) inches wide.

The ore minerals, consist of fine-grained pyrite, galena, and sphalerite with less chalcopyrite, are enclosed in quartz, where they form both veinlets and disseminated patches. Where the ore has been oxidized, abundant limonite and a little azurite, malchite, cerussite, gypsum, and manganese oxide have been formed. A good deal of sericite and a very little calcite are present both in the ore and in the wall rock.

(From Geology and Ore Deposits of the Libby Quadrangle, Montana: By Russell Gibson Bulletin 956 U.S.G.S.)

Footnote: See Plate No.1, U.S.G.S. Bulletin 956

SNOWSHOE FAULT AREA

SNOWSHOE

The Snowshoe Mine lies in close proximity to the Zollars Group, and indications are that the ore is contained in an offset shear zone, emminating from the Snowshoe fault. The Snowshoe ore body was developed and mined, showing a total vertical depth of approximately 1500 feet by 800 feet in length and an average width of six feet.

The following is from U.S.G.S. Bulletin 956, and describes the ore zones and geology.

The Snowshoe mine is on the south side of Snowshoe Creek, about 3 miles above its confluence with Big Cherry Creek. The mine has been idle for many years, and its workings are largely inaccessible. Most of the following historical and statistical information was kindly supplied by C.H. Foot of Kalispell, Mont., one of the present owners of the property.

The Snowshoe group comprises four patented claims, the Chinook, Snowshoe, Rustler, and Porcupine. The first prospecting was done in 1892, and the first important development began about 1900, when the group was taken over by an English syndicate, the Pacific Northwest Mining Corporation, Ltd. The total output to date has been about 130,000 tons ore, containing lead, silver, and gold, the net smelter returns for which have amounted to $1,086,000. There is 11,000 feet of development work in the mine, and in 1934 it was said that 110,000 tons of ore had been proved or partly blocked out. According to MacDonald,[93] who visited the mine in 1905 when it was active, development work had then opened the lode to a depth of 300 feet or more, showing it to have an average width of about 7 feet.

Mr. Foot believes that at times as much as 40 percent of the concentrates was lost by inefficient milling, and MacDonald[94] remarks that a large proportion of the gold, probably as much as $400 per day, was lost in milling.

The vein material occurs in the fissured and sheared zone of the Snowshoe fault, which here strikes N.12°W. and is about vertical. The country rock on the east side of the fault is dark bluish-gray sandy argillite and sandstone of the Ravalli formation; that on the west side is thick-bedded white limestone and calcareous shale of the Wallace. The strike of the beds on both sides of the fault is about N.30°W., but the dip east of the fault is toward the east whereas the dip west of the fault is toward the west. The angles of dip vary.

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93 Calkins, F.C., and MacDonald, D.F., A geological reconnaissance in northern Idaho and northwestern Montana: U.S. Geol. Survey Bull. 384, p. 104, 1909.

94 MacDonald, D.F., Economic features of northern Idaho and Northwestern Montana: U.S. Geol. Survey Bull. 285, p.50, 1906.

As seen in the mine, the shear zone attains a maximum width of 12 feet, though most of it is less than half as wide. This zone is made up os sheared and sheeted country rock enclosing quartz veins a fraction of an inch to a food in width, which contain carbonate and sulfides. The most abu ndant sulfides are galena and blende; pyrite is a little less abundant; chalcopyrite and arsenopyrite are rather scarce. A little disseminated pyrrhotite was found in limestone west of the ore zone.

The sulfides are irregularly distributed in the quartz but most commonly form veins and stringers several inches thick, which are parallel with the local surface of shearing. The sulfides also spread out from the veins and form patches in the quartz. Thick and thin slices of country rock alternate with the quartz veins and are commonly parallel to them. Quartz and carbonate are the most abundant introduced minerals in these horses of wall rock.

The shattered and brecciated condition of the quartz, as seen under the microscope, and the preference of sulfides for the shattered quartz indicate that movement took place along early formed quartz veins before the introduction of the metallic minerals. Slickensided masses of sulfides and gangue show that further faulting occurred after the formation of the sulfides.

5-B The proposed exploration project will consist of enlarging the No.3 tunnel (see map) for a distance of two hundred (200) feet and extending this tunnel two hundred feet (200) on the vein structure so as to reach a point vertically below the ore zone in No.2 tunnel. Project also includes the improvement of a short access road ($\frac{1}{2}$ mile) and construction of a trestle at the dump site.

COST ESTIMATE

1.	Rehabilitation and improvement on ½ mile of access road. Bulldozer (TD-18) 30 hrs. @ $12.50 per. hr.	$375.00
2.	10 hr. excavating stockpile area at dump site @ $12.50 per. hr.	125.00
3.	8 hrs. moving in equipment (installation) compressor, rocker shovel, receiver tank, mine car, rails and pipe @ $12.50 per hr.	100.00
4.	Moving equipment out at completion of project. 8 hrs. @ $12.50 per hr. (A total of 16 hrs. travel time has been estimated, which should include travel time for the dozer for the start and completion of the project. This estimate was based on previous cost experienced in 1952.)	100.00
5.	16 hrs. travel time @ $12.50 per hr.	200.00
6.	Freight Charges. (hauling all equipment to be used on project)	380.00
		1280.00 1280.00
7.	Trestle at dump site. Materials 1100 lineal ft stull timber 8" to 10" diameter @ 16¢ per ft.	176.00
	1000 board feet of 2" plank	72.00
	60 4"x6"x30" track ties	20.00
	200 feet 20 lb. rail @ $45 per ton	30.00
	30 lbs. 60 penney spikes @ 20¢ per lb.	6.00
	20 lbs. 3/8"x3" track spikes @ 20¢ per lb.	4.00
	Installation: 18 man days @ $19.80 per day (also includes overtime, insurance and payroll taxes)	356.40
		664.40
8.	Enlargement and Rehabilitation of 200 ft. of No.3 tunnel Labor: 200 ft. @ $4.50 per ft. (includes payroll taxes, insurance, overtime etc.)	900.00
	Materials: 400 lbs. blasting powder @ $22 per hundred	88.00
	300 electric blasting caps @ 25¢ per cap	75.00
	70 4"x6"x30" track ties	26.00
	400 ft. 20 lb. rail (includes fish plates and bolts)	60.00
	15 days rental on jackleg drill @ $300 per month	150.00
	Drill Steel	80.00
	15 day rental on mucking machine @ $250. per month	125.00
	15 days rental on 315 cubic ft. compressor (portable) @ $~~720~~ $360 per mo.	~~540~~ 180.00

(Continued)

450 gal. deisel oil @ 20¢ per gal.	90.00
Lubricants	10.00
40 lbs. track spikes 3/8"x3" @ 20¢ per lb.	8.00
TOTAL	$1792.00

COST ESTIMATE ON 200 feet of 5'x7' Exploration Tunnel

Rent on 315 cubic ft. Portable Compressor @ $360 per mo for 1½ mos.	$540.00
Rent on Eimco 12-B mucking machine @$250 per mo. for 1½ mos.	375.00
1200 gal. deisel fuel @ 20¢ per gal.	240.00
Lubricants	45.00
Rent on Jackleg Drill @ $300 per mo. for 1½ mos.	450.00
Drill Steel	200.00
70 Track Ties 4"x6"x30"	26.00
40 lbs. Track Spikes 3/8"x3" @ 20¢ per lb.	8.00
500 ft. of 2" Victrolic Pipe @ 50¢	250.00
600 ft. of 1" common black pipe @ 16¢ per ft.	96.00
400 ft. 20lb. Rail @ $45 per ton (includes fish plates & bolts)	60.00
Labor: 200 ft. @ $12 per ft. (includes overtime, insurance, etc.)	2400.00
2000 lbs. Blasting Powder @ $22 per hundred	440.00
952 electric blasting caps @ 25¢ per cap	238.00
3000 ft. of blasting wire @ 2¢ per ft.	60.00
TOTAL	5428.00

PURCHASE OF MISCELLANEOUS TOOLS & EQUIPMENT

One used Chain Saw	$125.00
100 Feet Eimco wire braid hose 1"	100.00
~~Eimco 1" air hose~~	~~100.00~~
100 feet of Eimco ½" water hose	50.00
2 only, No.2 round point shovels @ $3.50	7.00
3 only, miners picks @ $4.50 each	13.50
Spare Parts; cables & chain for Eimco mucker	18.50
3 1" valves @ $3.20	9.60
Mine Car (used) 27 cubic ft.	50.00
1 only, Rail bender	45.00
1 only, 30 cap detonator	45.00
TOTAL	$463.60

Rent on 4 wheel drive Dodge power wagon $30 per mo. for 2 mos.	$60.00

Supervisory Expense at $600 per month, plus expenses of $180 per month, for 2 mos.	$1560.00

ITEM 5 (D)

A.L. Osborn will act in a supervisory capacity of the project and has ample experience to handle same in an efficient manner. His mining experience dates back to 1934 and his ability may be checked by contacting the Bunker Hill & Sullivan Mining Co., and The Sunshine Mining Company, both of Kellogg, Idaho; or Mr. Lester Bishop, Director of the A.C.M Research Bureau; Annaconda Copper Company of Butte, Montana.

ITEM 7 (B)

It is our intention to furnish our share of the costs through the sale to private individuals, shares in our Corporation. A portion of these shares have already been contracted for and it is our intention to raise sufficient funds to complete the project in case the Exploration Loan is not granted.

MINER FM S87 16M - 4-52

BUNKER HILL SMELTER

BUNKER HILL & SULLIVAN MINING & CONCENTRATING COMPANY

In Account With

P. O. Address: KELLOGG, IDAHO
R. R. Station: BRADLEY, IDAHO

ANDERSON LEASE

Name of Mine: St. Paul Mine Lot No. ____ Smelter Lot No. I

Location: Libby, Montana R. R. Shipping Point: By Truck Class: Crude

DATE OF ARRIVAL: 7/30/52 DATE OF SAMPLING: 7/30/52 DATE OF SETTLEMENT: 8/5/52

Car Initial	Car No.	H_2O	Weight, lbs.
1	Truck	0.3	12940

TOTAL GROSS WEIGHT	12940
____ Sacks. Weight of Sacks	
GROSS WEIGHT OF ORE	
Moisture Pounds	39
DRY WEIGHT OF ORE	12901

Metal Assay

Gold	.0125	Oz. P. T.
Silver	5.8	Oz. P. T.
Copper	.20	% P. T.
Lead	23.55	% P. T.
Iron	3.8	% P. T.
Insol.	40.6	% P. T.
Lime	0.0	% P. T.
Sulphur	13.0	% P. T.
Zinc	15.75	% P. T.
Antimony	Tr.	% P. T.
Arsenic	.02	% P. T.
Bismuth	0.0	% P. T.

QUOTATIONS

____ Per Oz.

____ Per Oz.

Silver 7-30-52 = .90 Per Oz.

Lead 7-30-52

.16000 - .01533 = .14467 Per Lb.

Copper ____

____ = ____ Per Lb.

Zinc 7-30-52

.15000 @ 25% = .03750 Per Lb.

SMELTING AND REFINING DEDUCTIONS

	PER TON
Base Smelting Charge	$ 8.000
Credit ____ % Iron over (____ % Zinc x 1.77) @ 40c a unit	$ ____
Debit 3.8 % Iron under (15.75 % Zinc x 1.77) @ 40c a unit	$ 9.631
Credit 40.6 % Silica over (3.8 % Iron x .886) @ 8c a unit	$ - 2.979
Debit ____ % Silica under (____ % Iron x .886) @ 8c a unit	$ ____
Credit ____ % Lime over (____ % Iron x .979) @ 10c a unit	$ ____
Debit 0.0 % Lime under (3.8 % Iron x .979) @ 10c a unit	$ .372
TOTAL SMELTING DEDUCTIONS	$ 15.024
Silver charge over ____ oz. per ton @ ____ c per oz.	$ ____
Antimony charge over ____ % @ ____ per unit	$ ____
Arsenic charge over ____ % @ ____ per unit	$ ____
Bismuth charge over ____ % @ ____ per pound	$ ____
Moisture charges over ____ % @ ____ per unit	$ ____
Sulphur charge over ____ % @ ____ per unit	$ ____
TOTAL SMELTING AND REFINING DEDUCTIONS	$ 15.024

PAYMENT FOR METALS

						VALUE PER TON
Gold ____ Oz.			@ ____	Per Oz.		$ ____
Gold ____ Oz.			@ ____	Per Oz.		$ ____
Silver 5.8	Oz.	95 %	@ .90	Per Oz.		$ 4.959
Lead 23.55	%	90 %	@ .14467	Per Lb.		$ 61.326
Copper ____	%	%	@ ____	Per Lb.		$ ____
Zinc 15.75	%	50 %	@ .03750	Per Lb.		$ 5.906
				Gross Value		$ 72.191
LESS SMELTING AND REFINING DEDUCTIONS						$ 15.024
NET VALUE PER TON						$ 57.167
TOTAL OUNCES SILVER IN THIS SHIPMENT						37.41

SETTLEMENT

DRY WEIGHT 12901 POUNDS= 6.4505 TONS @ $ 57.167 PER TON EQUALS $ 368.76

Less Freight from Shipping Point to Bradley, Idaho

Gross Weight ____ Pounds= ____ Tons @ $ ____ per ton equals $ ____

Frt. on 2734 lead lbs. paid @ (24.97-17.35)	$ 10.42	
Hauling @ $13.00 per ton to: Anderson Lease - 204 Main St., Kellogg	$ 84.11	94.53
		274.23
10% Royalty to: W.C. Zollars - Libby, Montana		27.42
To: Anderson Lease - 204 Main St., Kellogg, Idaho	NET PROCEEDS	$ 246.81

MINER FM 867 16M - 4-52

BUNKER HILL SMELTER

BUNKER HILL & SULLIVAN MINING & CONCENTRATING COMPANY

In Account With

ANDERSON LEASE

P. O. Address: KELLOGG, IDAHO
R. R. Station: BRADLEY, IDAHO

Name of Mine: St. Paul Mine Lot No. ____ Smelter Lot No. 2

Location: Libby, Montana R. R. Shipping Point: By Truck Class: Crude

DATE OF ARRIVAL: 8/18/52 DATE OF SAMPLING: 8/18/52 DATE OF SETTLEMENT: 8/25/52

Car Initial	Car No.	H_2O	Weight, lbs.
1	Truck	0.8	5640
1	"	4.0	12010
1	"	2.8	16810

TOTAL GROSS WEIGHT	34460
____ Sacks. Weight of Sacks	
GROSS WEIGHT OF ORE	996
Moisture Pounds	
DRY WEIGHT OF ORE	33464

Metal Assay

Gold	Tr.	Oz. P. T.
Silver	3.05	Oz. P. T.
Copper	.15	% P. T.
Lead	12.15	% P. T.
Iron	3.3	% P. T.
Insol.	61.2	% P. T.
Lime		% P. T.
Sulphur	7.4	% P. T.
Zinc	10.8	% P. T.
Antimony	Tr.	% P. T.
Arsenic	.02	% P. T.
Bismuth		% P. T.

QUOTATIONS

____ Per Oz.

____ Per Oz.

Silver 8-18-52 = .90 Per Oz.

Lead 8-18-52

.16000-.01533 = .14467 Per Lb.

Copper ____

____ = ____ Per Lb.

Zinc 8-18-52

.14000 @ 25% = .03500 Per Lb.

SMELTING AND REFINING DEDUCTIONS — PER TON

Base Smelting Charge	$ 8.000
Credit ____% Iron over (____% Zinc x 1.77) @ 40c a unit	$ ____
Debit ____% Iron under (____% Zinc x 1.77) @ 40c a unit	$ ____
Credit ____% Silica over (____% Iron x .886) @ 8c a unit	$ ____
Debit ____% Silica under (____% Iron x .886) @ 8c a unit	$ ____
Credit ____% Lime over (____% Iron x .979) @ 10c a unit	$ ____
Debit ____% Lime under (____% Iron x .979) @ 10c a unit	$ ____
TOTAL SMELTING DEDUCTIONS	$ ____
Silver charge over ____ oz. per ton @ ____ c per oz.	$ ____
Antimony charge over ____% @ ____ per unit	$ ____
Arsenic charge over ____% @ ____ per unit	$ ____
Bismuth charge over ____% @ ____ per pound	$ ____
Moisture charges over ____% @ ____ per unit	$ ____
Sulphur charge over ____% @ ____ per unit	$ ____
TOTAL SMELTING AND REFINING DEDUCTIONS . . . Min.	$ 11.000

PAYMENT FOR METALS — VALUE PER TON

Gold	____ Oz.		@ ____	Per Oz.		$ ____
Gold	____ Oz.		@ ____	Per Oz.		$ ____
Silver	3.05 Oz.	95 %	@ .90	Per Oz.		$ 2.608
Lead	12.15 %	90 %	@ .14467	Per Lb.		$ 31.639
Copper	____ %	%	@ ____	Per Lb.		$ ____
Zinc	10.8 %	50 %	@ .03500	Per Lb.		$ 3.780
				Gross Value		$ 38.027
LESS SMELTING AND REFINING DEDUCTIONS						$ 11.000
NET VALUE PER TON						$ 27.027

TOTAL OUNCES SILVER IN THIS SHIPMENT 51.03

SETTLEMENT

DRY WEIGHT 33464 POUNDS = 16.732 TONS @ $ 27.027 PER TON EQUALS $ 452.22

Less Freight from Shipping Point to Bradley, Idaho

Gross Weight ____ Pounds = ____ Tons @ $ ____ per ton equals $ ____

Frt. on 3659 lead lbs. paid @ (24.97-17.35)	$ 13.94	
Hauling @ $12.00 per ton to: Pete Vanderwood - Libby Transfer Libby, Montana	$ 105.90	
Hauling @ $12.00 per ton to: Anderson Lease - 204 Main St. - Kellogg, Idaho $100.86		
Hauling @ $2.00 per ton to: Anderson Lease - 204 Main St.-Kellogg, Idaho 34.46	$ 135.32	255.16
10% Royalty to : W.C. Zollars - Libby, Montana 19.71		197.06
To: Anderson Lease - 204 Main St., Kellogg, Idaho	NET PROCEEDS	19.71
		$ 177.35

MINER FM 867 16M - 4-52

BUNKER HILL SMELTER

BUNKER HILL & SULLIVAN MINING & CONCENTRATING COMPANY

In Account With

P. O. Address: KELLOGG, IDAHO
R. R. Station: BRADLEY, IDAHO

ANDERSON LEASE

Name of Mine: St. Paul Mine Lot No.: Smelter Lot No.: 3

Location: Libby, Montana R. R. Shipping Point: By Truck Class: Crude

DATE OF ARRIVAL: 8/21/52 DATE OF SAMPLING: 8/27/52 DATE OF SETTLEMENT: 8/30/52

Car Initial	Car No.	H_2O	Weight, lbs.
1	Truck	2.5	11280

TOTAL GROSS WEIGHT	11280
____ Sacks. Weight of Sacks	
GROSS WEIGHT OF ORE	282
Moisture Pounds	
DRY WEIGHT OF ORE	10998

Metal Assay

Gold	Tr.	Oz. P. T.
Silver	2.9	Oz. P. T.
Copper	.20	% P. T.
Lead	11.0	% P. T.
Iron	3.4	% P. T.
Insol.	64.2	% P. T.
Lime		% P. T.
Sulphur	6.0	% P. T.
Zinc	10.3	% P. T.
Antimony	Tr.	% P. T.
Arsenic	.016	% P. T.
Bismuth		% P. T.

QUOTATIONS

			Per Oz.
			Per Oz.
Silver 8-21-54	=	.90	Per Oz.
Lead 8-21-54			
.16000-.01533	=	.14467	Per Lb.
Copper			
	=		Per Lb.
Zinc 8-21-52			
.14000 @ 25%	=	.03500	Per Lb.

SMELTING AND REFINING DEDUCTIONS

	PER TON
Base Smelting Charge	$ 8.000
Credit ____% Iron over (____% Zinc x 1.77) @ 40c a unit	$
Debit ____% Iron under (____% Zinc x 1.77) @ 40c a unit	$
Credit ____% Silica over (____% Iron x .886) @ 8c a unit	$
Debit ____% Silica under (____% Iron x .886) @ 8c a unit	$
Credit ____% Lime over (____% Iron x .979) @ 10c a unit	$
Debit ____% Lime under (____% Iron x .979) @ 10c a unit	$
TOTAL SMELTING DEDUCTIONS	$
Silver charge over ____ oz. per ton @ ____ c per oz.	$
Antimony charge over ____% @ ____ per unit	$
Arsenic charge over ____% @ ____ per unit	$
Bismuth charge over ____% @ ____ per pound	$
Moisture charges over ____% @ ____ per unit	$
Sulphur charge over ____% @ ____ per unit	$
TOTAL SMELTING AND REFINING DEDUCTIONS . . . Min.	$ 11.000

PAYMENT FOR METALS

						VALUE PER TON
Gold ____ Oz.			@ ____	Per Oz.		$
Gold ____ Oz.			@ ____	Per Oz.		$
Silver 2.9	Oz.	95 %	@ .90	Per Oz.		$ 2.480
Lead 11.0	%	90 %	@ .14467	Per Lb.		$ 28.645
Copper ____	%	%	@ ____	Per Lb.		$
Zinc 10.3	%	50 %	@ .03500	Per Lb.		$ 3.605
				Gross Value		$ 34.730
LESS SMELTING AND REFINING DEDUCTIONS						$ 11.000
NET VALUE PER TON						$ 23.730
TOTAL OUNCES SILVER IN THIS SHIPMENT						15.95

SETTLEMENT

DRY WEIGHT 10998 POUNDS= 5.499 TONS @ $ 23.730 PER TON EQUALS $130.49

Less Freight from Shipping Point to Bradley, Idaho

Gross Weight ____ Pounds= ____ Tons @ $ ____ per ton equals	$	
Frt. on 1089 lead lbs. paid @ (24.97-17.35)	$ 4.15	
Hauling @ $12.00 per ton to: Pete Vanderwood - Libby Transfer-	$	
Libby, Montana	$ 67.68	
Hauling @ $2.00 per ton to: Anderson Lease - 204 Main St., Kellogg, Id	$ 11.28	83.11
	$	47.38
10% Royalty to: W.C. Zollars - Libby, Montana	$	4.74
	$	
	$	
To: Anderson Lease - 204 Main St., Kellogg, Idaho	NET PROCEEDS	$ 42.64

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MINER FM S87 16M - 4-52

BUNKER HILL SMELTER

BUNKER HILL & SULLIVAN MINING & CONCENTRATING COMPANY

In Account With

ANDERSON LEASE

P. O. Address: KELLOGG, IDAHO
R. R. Station: BRADLEY, IDAHO

Name of Mine: St. Paul Mine Lot No.: Smelter Lot No.: 4

Location: Libby, Montana R. R. Shipping Point: By Truck Class: Crude

DATE OF ARRIVAL: 9/8/52 DATE OF SAMPLING: 9/9/52 DATE OF SETTLEMENT: 9/18/52

Car Initial	Car No.	H_2O	Weight, lbs.
1	Truck	4.2	12620

TOTAL GROSS WEIGHT	12620
____ Sacks. Weight of Sacks	
GROSS WEIGHT OF ORE	530
Moisture Pounds	
DRY WEIGHT OF ORE	12090

Metal Assay

Gold	.1185	Oz. P. T.
Silver	4.75	Oz. P. T.
Copper	.10	% P. T.
Lead	11.65	% P. T.
Iron	12.2	% P. T.
Insol.	46.0	% P. T.
Lime		% P. T.
Sulphur	11.6	% P. T.
Zinc	7.25	% P. T.
Antimony		% P. T.
Arsenic	.89	% P. T.
Bismuth		% P. T.

QUOTATIONS

			Per Oz.
			Per Oz.
Silver 9-8-52	=	.90	Per Oz.
Lead 9-8-52			
.16-.01533	=	.14467	Per Lb.
Copper			
	=		Per Lb.
Zinc 9-8-52			
.14 @ 25%	=	.035	Per Lb.

SMELTING AND REFINING DEDUCTIONS

	PER TON
Base Smelting Charge	$ 8.00
Credit ____% Iron over (____% Zinc x 1.77) @ 40c a unit	$
Debit 12.2% Iron under (7.25% Zinc x 1.77) @ 40c a unit	$ .253
Credit 46.0% Silica over (12.2% Iron x .886) @ 8c a unit	$ 2.815
Debit ____% Silica under (____% Iron x .886) @ 8c a unit	$
Credit ____% Lime over (____% Iron x .979) @ 10c a unit	$
Debit ____% Lime under (12.2% Iron x .979) @ 10c a unit	$ 1.194
TOTAL SMELTING DEDUCTIONS	$ 6.632
Silver charge over ____ oz. per ton @ ____ c per oz.	$
Antimony charge over ____% @ ____ per unit	$
Arsenic charge over ____% @ ____ per unit	$
Bismuth charge over ____% @ ____ per pound	$
Moisture charges over ____% @ ____ per unit	$
Sulphur charge over ____% @ ____ per unit	$
TOTAL SMELTING AND REFINING DEDUCTIONS . . . Min.	$ 11.000

PAYMENT FOR METALS

					VALUE PER TON
Gold ____ Oz.			@ ____	Per Oz.	$
Gold .1185 Oz.			@ 31.81825	Per Oz.	$ 3.770
Silver 4.75 Oz.	95	%	@ .90	Per Oz.	$ 4.061
Lead 11.65 %	90	%	@ .14467	Per Lb.	$ 30.337
Copper ____ %		%	@ ____	Per Lb.	$
Zinc 7.25 %	50	%	@ .035	Per Lb.	$ 2.538
				Gross Value	$ 40.706
LESS SMELTING AND REFINING DEDUCTIONS					$ 11.000
NET VALUE PER TON					$ 29.706
TOTAL OUNCES SILVER IN THIS SHIPMENT					28.71

SETTLEMENT

DRY WEIGHT 12090 POUNDS= 6.045 TONS @ $ 29.706 PER TON EQUALS $ 179.57

Less Freight from Shipping Point to Bradley, Idaho

Gross Weight ____ Pounds= ____ Tons @ $ ____ per ton equals	$	
Freight on 1267 lbs Lead @ (24.97-17.35)	$ 4.83	
Hauling @ $12.00/T. to Anderson Lease, 204 Main St., Kellogg, Ida.	$ 75.72	80.55
	$	99.02
10% Royalty to Will Zollars, Libby, Montana	$ 9.90	
Representing fee Lots 1-5 Inc. to Ted Deggendorfer, Kellogg, Ida.	$ 40.40	50.30
	$	
	$	
	$	
To: Anderson Lease, Box 248, Kellogg, Idaho	NET PROCEEDS	$ 48.72

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MINER FM 867 16M - 4-52

BUNKER HILL SMELTER

BUNKER HILL & SULLIVAN MINING & CONCENTRATING COMPANY

In Account With

ANDERSON LEASE

P. O. Address: KELLOGG, IDAHO
R. R. Station: BRADLEY, IDAHO

Name of Mine: St. Paul Mine Lot No.: Smelter Lot No.: 5

Location: Libby, Montana R. R. Shipping Point: By Truck Class: Crude

DATE OF ARRIVAL: 9/10/52 DATE OF SAMPLING: 9/12/52 DATE OF SETTLEMENT: 9/18/52

Car Initial	Car No.	H_2O	Weight, lbs.
1	Truck	8.4	12430

TOTAL GROSS WEIGHT	12430
____ Sacks. Weight of Sacks	
GROSS WEIGHT OF ORE	1044
Moisture Pounds	
DRY WEIGHT OF ORE	11386

Metal Assay

Gold	.126	Oz. P. T.
Silver	4.85	Oz. P. T.
Copper	.10	% P. T.
Lead	10.9	% P. T.
Iron	14.7	% P. T.
Insol.	42.6	% P. T.
Lime		% P. T.
Sulphur	10.6	% P. T.
Zinc	6.3	% P. T.
Antimony	.07	% P. T.
Arsenic	1.25	% P. T.
Bismuth		% P. T.

QUOTATIONS

			Per Oz.
			Per Oz.
Silver 9-10-52	=	.90	Per Oz.
Lead 9-10-52			
.16-.01533	=	.14467	Per Lb.
Copper			
	=		Per Lb.
Zinc 9-10-52			
.14 @ 25%	=	.035	Per Lb.

SMELTING AND REFINING DEDUCTIONS

	PER TON
Base Smelting Charge	$ 8.000
Credit 14.7 % Iron over (6.3 % Zinc x 1.77) @ 40c a unit	$ 1.420
Debit ____ % Iron under (____ % Zinc x 1.77) @ 40c a unit	$
Credit 42.6 % Silica over (14.7 % Iron x .886) @ 8c a unit	$ 2.366
Debit ____ % Silica under (____ % Iron x .886) @ 8c a unit	$
Credit ____ % Lime over (____ % Iron x .979) @ 10c a unit	$
Debit ____ % Lime under (14.7 % Iron x .979) @ 10c a unit	$ 1.439
TOTAL SMELTING DEDUCTIONS	$ 5.653
Silver charge over ____ oz. per ton @ ____ c per oz.	$
Antimony charge over ____ % @ ____ per unit	$
Arsenic charge over 1 % @ .50 per unit	$ .125
Bismuth charge over ____ % @ ____ per pound	$
Moisture charges over ____ % @ ____ per unit	$
Sulphur charge over ____ % @ ____ per unit	$
TOTAL SMELTING AND REFINING DEDUCTIONS . . . Min.	$ 11.000

PAYMENT FOR METALS

				VALUE PER TON
Gold ____ Oz.			@ ____ Per Oz.	$
Gold .126 Oz.			@ 31.81825 Per Oz.	$ 4.009
Silver 4.85 Oz.	95	%	@ .90 Per Oz.	$ 4.147
Lead 10.9 %	90	%	@ .14467 Per Lb.	$ 28.384
Copper ____ %		%	@ ____ Per Lb.	$
Zinc 6.3 %	50	%	@ .035 Per Lb.	$ 2.205
			Gross Value	$ 38.745
LESS SMELTING AND REFINING DEDUCTIONS				$ 11.000
NET VALUE PER TON				$ 27.745
TOTAL OUNCES SILVER IN THIS SHIPMENT				27.61

SETTLEMENT

DRY WEIGHT 11386 POUNDS= 5.693 TONS @ $ 27.745 PER TON EQUALS $ 157.95

Less Freight from Shipping Point to Bradley, Idaho

Gross Weight ____ Pounds= ____ Tons @ $ ____ per ton equals	$	
Frt. on 1117 lbs lead @ (24.97-17.35)	$ 4.26	
	$	
Hauling @ $12.00 P/T to Anderson Lease, Box 248, Kellogg, Idaho	$ 74.58	78.84
	$	79.11
10% Royalty to Will Zollars, Libby, Montana	$	7.91
	$	
	$	
	$	
To: Anderson Lease, Box 248, Kellogg, Idaho NET PROCEEDS	$	71.20

MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Montana, County of Lincoln, described as follows:1/

The FERN Quartz Mining Claim, Number 29904-BK66, recorded in Record Book 568-569; The FAITH Quartz Mining Claim, Number 29903-BK66, recorded in Record Book page 567-568; The TOPSY Quartz Mining Claim, Number 26482, recorded in Record Book No. 70, page 142, in the office of the County Recorder, Libby, Montana, County seat of Lincoln County, State of Montana.

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

2/ the ORO Mining Syndicate, Inc., a corporation

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

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

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

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

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

4. Changes and added provisions

Dated this 18th day of June, 1954.

Walter C. Callaas [Seal]

Irene R. Callaas [Seal]

[Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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

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

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by the contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

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

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

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

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

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

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

2/ the ORO Mining Syndicate, Inc., a corporation

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

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

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

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

4. Changes and added provisions _____

Dated this 18th day of June, 1954.

Walter E. Gallers [Seal]

Irene R. Gallers [Seal]

_____ [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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

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

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

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Montana, County of Lincoln, described as follows: 1/ The FERN Quartz Mining Claim, Number 29904-BK66, recorded in Record Book 568-569; The Faith Quartz Mining Claim, Number 29903-BK66, recorded in Record Book page 567-568; The TOPSY Quartz Mining Claim, Number 26482, recorded in Record Book No. 70, page 142, in the office of the County Recorder, Libby, Montana, County seat of Lincoln County, State of Montana.

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

2/ the ORO Mining Syndicate, Inc., a corporation

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

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

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2. To secure the payment to the Government of the percentage royalty on production 3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

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

4. Changes and added provisions _____

Dated this 18th day of June, 1954.

Walter Sellars [Seal]

Irene R. Sellars [Seal]

_____ [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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(a) One and one-half ($1\frac{1}{2}$) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half ($1\frac{1}{2}$) per cent of any such net amounts, plus one-half ($\frac{1}{2}$) per cent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half ($1\frac{1}{2}$) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) per cent.)

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

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MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

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2/ the ORO Mining Syndicate, Inc., a corporation

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

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

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

4. Changes and added provisions _____

Dated this 18th day of June, 1954.

Walter E. Fallers [Seal]

Irene R. Fallers [Seal]

_____ [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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

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f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

MF-203
(Revised July 1, 1953)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Montana, County of Lincoln, described as follows:1/

The MEM Quartz Mining Claim, Number 20904-BK66, recorded in Record Book 660-669; The FAITH Quartz Mining Claim, Number 20903-BK66, recorded in Record Book page 667-668; The HOPEY Quartz Mining Claim, Number 26483, recorded in Record Book No. 70, page 148, in the office of the County Recorder, Libby, Montana, County seat of Lincoln County, State of Montana.

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

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4. Changes and added provisions _____

Dated this 18th day of June, 1954.

Walter Gallaher [Seal]

Grace R. Gallaher [Seal]

_____ [Seal]

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

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MF-203
(Revised July 1, 1953)

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

2/ the ORO Mining Syndicate, Inc., a Corporation

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production (as set forth on the reverse side hereof) and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

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

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

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof, there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom, until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

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

4. Changes and added provisions

Dated this 18th day of June, 1954.

Walter C. Gollars [Seal]

Irene R. Gollars [Seal]

[Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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

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

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by the contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

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

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

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

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

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

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

AGREEMENT FOR THE SALE OF MINING PROPERTY

THIS AGREEMENT, made and entered into this 16th day of June, 1954, between WALTER C. ZOLLARS and wife, IRENE R. ZOLLARS, Parties of the First Part and A.L. OSBORN, Party of the Second Part, agent in behalf of the ORO Mining Syndicate, inc.

WITNESSETH:

That the Parties of the First Part, in consideration of the sum of $1.00 to them in hand paid and the receipt of which is hereby acknowledged and in consideration of the covenants and obligations hereinafter contained, and the prompt, full and complete fulfillment and performance thereof by the Party of the Second Part, his heirs, executors, administrators or assigns, hereby covenant and agree to sell and by good and sufficient deed convey to the said Party of the Second Part, his heirs or assigns, all their right, title and interest in and to the following described mining claims, located in the Libby Unorganized Mining District, in the County of Lincoln and State of Montana, to-wit:

> The FERN Quartz Mining Claim, Number 29904-BK66, recorded in Record Book 568-569; The FAITH Quartz Mining Claim, Number 29903-BK66, recorded in Record Book page 567-568; The TOPSY Quartz Mining Claim, Number 26482, recorded in Record Book No.70, page 142, in the office of the County Recorder, Libby, Montana, County seat of Lincoln County, State of Montana.

WHEREAS, The party of the First Part has agreed to give to the party of the Second Part for the consideration herein set forth, an option to purchase said mineral claims for the period and upon the terms and conditions herein specified:

NOW, THEREFORE, this agreement witnesseth that for and in consideration of the several covenants and agreements hereinafter specified and contained, the parties hereto mutually covenant and agree each with the other as follows:

1. The Party of the Second Part shall, until he be in default, as hereinafter provided, or until he relinquishes by notice in writing, has the sole right and option to purchase the above described mineral claims, for the sum of Twenty-five Thousand ($25,000.00) Dollars, payable as follows:

The Party of the Second Part shall pay to the Parties of the First Part a royalty of ten (10%) per cent on the net smelter returns, meaning thereby net smelter returns less freight and smelter charges. Said royalties to be applied on the following payments, and paid by the smelter directly to the Parties of the First Part.

It is mutually agreed by and between the parties to this contract, that the Party of the Second Part may, at his option, make advance payments at any time upon the above mentioned payments in such sums as he may desire, to the end that this contract may be terminated as speedily as possible.

It is mutually agreed that the payment of royalties shall cease upon the completion of payment of said purchase price of Twenty-five Thousand ($25,000.00) Dollars.

2. Until the Party of the Second Part shall be in default under this agreement he shall have the right to mine any and all ores from the said mineral claims, or any of them, and to mill, treat, ship for treatment, or otherwise recover the values from such ores, whether in its original or reduced form, all mineral operations, however, to be carried on in a good and miner-like manner; provided, however, that the Parties of the First Part shall be entitled to and shall be paid ten (10%) per cent of the net smelter returns from ore mined from the said mineral claims, or from any of them; the "net smelter returns" to be understood as being the amount due and payable from the smelter after deducting freight from the mine to the smelter and treatment charges by the smelter. The Parties of the First Part shall be

furnished with duplicate smelter settlement sheet as well as the above mentioned ten percent royalty direct from the smelter.

3. The Parties of the First Part shall at all reasonable times prior to the payment in full of the said purchase price have the right to inspect the workings on the said mineral claims, or any of them, and shall be furnished with statements as to returns from ore shipped and treated.

4. The Parties of the First Part covenant that they have a good title to the said unpatented mineral claims and that upon the completion by the Party of the Second Part of all payments, as provided in this agreement, they will convey the said mineral claims to the Party of the Second Part, or his heirs, representatives, grantors, or assigns, by coveyance in statutory form and with the customary statutory covenants.

5. It is further agreed that in the event the Party of the Second Part makes default under this agreement, or suffers his rights hereunder to become forfeited, the said Parties of the First Part shall have the right to re-enter and re-possess themselves of the said mineral claims, and all of the other property herein agreed to be sold to the Party of the Second Part and shall retain all moneys paid to it on the within agreement as liquidated damages for the use of said premises by the Party of the Second Part.

6. The Parties of the Second Part shall have the right at any time to relinquish this option by notice in writing given to the Party of the First Part, and upon such notice being given all rights and liabilities thenceforth and thereafter shall be at an end under this agreement.

7. The Party of the Second Part shall comply with all state and federal laws applying to employment of labor and operation

of mines and shall, at all times keep posted at the property notices stating that the owners of said mineral claims are in no way responsible for any labor or other bills at the property.

8. The Party of the Second Part agrees to perform Three Thousand ($3,000.00) Dollars worth of development work per year, provided economical conditions pertaining to the sale of lead zinc silver ore permits such expenditures.

The Party of the First Part agrees that only the annual assessment work, as required by law, shall be performed should metal prices be below the economic limitations.

9. In case of default by Party of the Second Part, in any of the terms and conditions of this agreement, Parties of the First Part shall give notice in writing to the Second Party, and he shall have thirty days in which to rectify such default.

10. In case of default or termination of this agreement, the Party of the Second Part shall have the right to remove all machinery, equipment and personal effects belonging to him from the property but any buildings constructed by said Party of the Second Part, shall remain on said property.

11. It is mutually agreed this contract will terminate on July 1, 1959, provided that on, or before that date, the Parties of the Second Part may request a renewal of said contract. The Party of the First Part agrees to grant same with the time limitations a choice of the Party of the Second Part.

It is further agreed, the Parties of the Second Part may, at their discretion, transfer or assign Title, or make any working agreement as he may desire with other interests. However, such agreement must in all respects confirm with the contents of this contract.

12. This agreement and every matter and thing herein contained shall, wherever the context allows, include, extend to, bind and inure to the benefit of not only the Parties hereto, but also

to their and each of their heirs, executors, administrators, successors, and assigns, respectively.

IN WITNESS WHEREOF, the parties hereto have signed this agreement in triplicate as of and dating from the day and year first written.

Walter C. Zollars

Irene R. Zollars

Parties of the First Part

A. L. Osborn

Party of the Second Part

State of Montana)
County of Lincoln)

Subscribed and sworn to before me, N. B. Wallace, a Notary for the State of Montana this 18th day of June 1954.

N. B. Wallace
Notary Public
Residing at Libby, Mont.
My commission expires Dec. 5, 1956

DEFENSE MINERALS ADMINISTRATION

~~WASHINGTON 25, D. C.~~

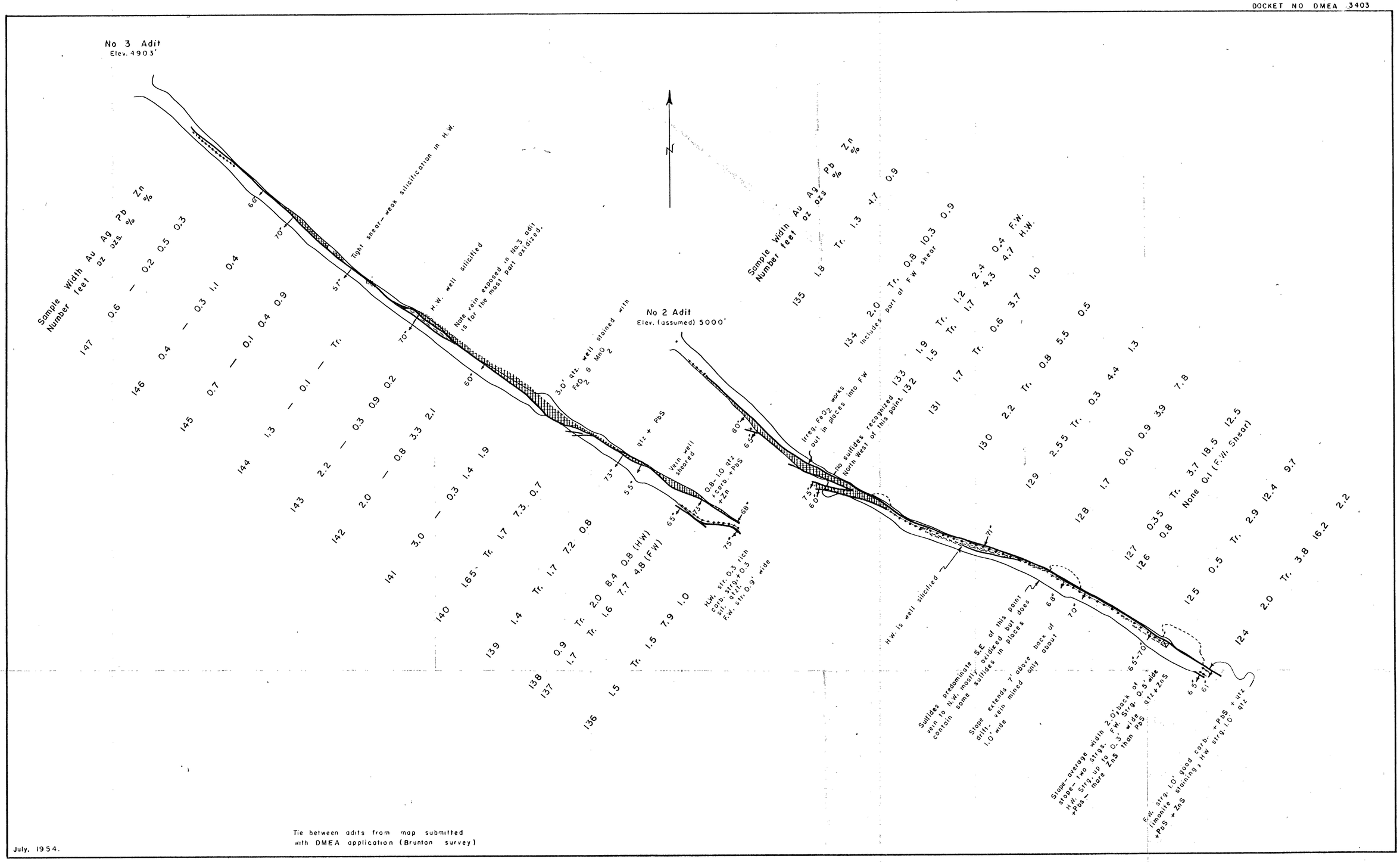
OFFICIAL BUSINESS

d of Mines
. O. Box 560
Juneau, Alaska

U. S. DEPARTMENT OF THE INTERIOR

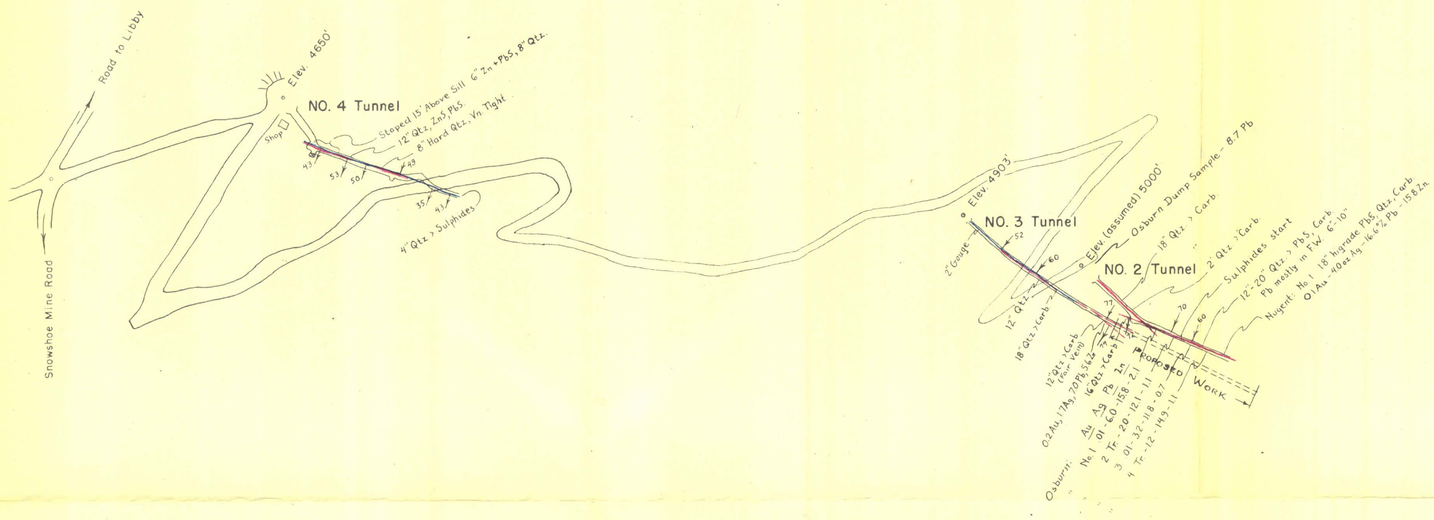
DEFENSE MINERALS EXPLORATION ADMINISTRATION

WASHINGTON 25, D. C.



GEOLOGIC AND ASSAY MAP NO. 2 AND NO. 3 ADITS
ZOLLARS PROPERTY, LINCOLN COUNTY MONTANA.

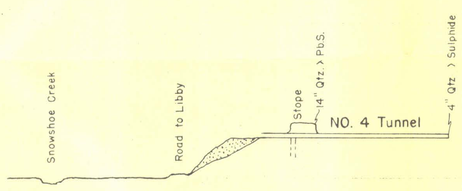
0 20 40 60 FEET

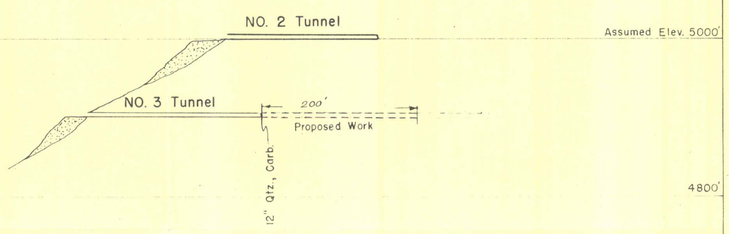


PLAN VIEW

1" = 100'

Brunton Survey

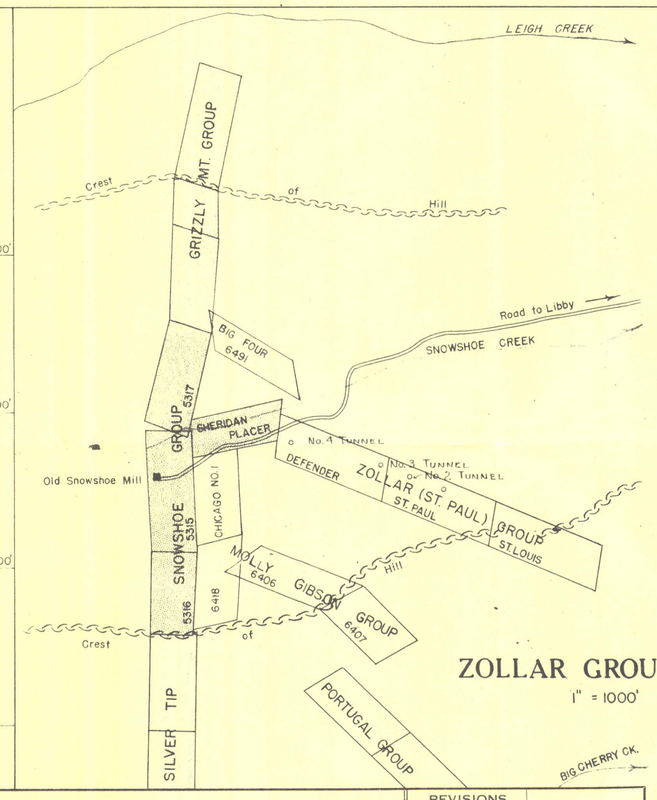




LONGITUDINAL SECTION

1" = 100'

Section Line N 70 W



ZOLLAR GROUP & VIC.

1" = 1000'

LEGEND		
		BEDDING
		FAULT
		JOINTS
		CLEAVAGE
		FOLDS

ZOLLAR TUNNEL 2,3,4

SCALE 1" = 1000'	CO-ORD	DATUM	
SURVEY BY	DATE	DRAWN	DATE
GEOLOGY BY	DATE	TRACED	DATE

REVISIONS

NO.