File Copy
Surname
ALF. or Griswold
Kiilsgaard
Bishop
Selfridge

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

OCT 24 1955

Mr. Kenneth E. Lewis
2548 Washington Avenue
Lemon Grove, California

Re: Docket No. DMEA-3889 (Lead-Zinc)
Lewis Bros. Partnership
Star of Hope Mine
Custer County, Idaho

Dear Mr. Lewis:

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

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

Careful study of all our information, although noting small pods of ore grade material 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.

Sincerely yours,

Frank E. Johnson
ACTING Administrator

WRGriswold/er 10/20 & 24/55
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region I, NW Dist. (2)
Chron.

R.C.S.

File Copy
Surname

Griswold
noted - Geehon
Kilsgaard

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

Mr. Kenneth E. Lewis
2548 Washington Avenue
Lemon Grove, California

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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,

Administrator

WRGriswold/er 10/20/55
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region I, NW Dist. (2)
Chron.

File Copy
Surname

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

500

October 20, 1955

Memorandum

To: The Administrator

From: Chief, Base Metals Division

Subject: Denial of Application, Docket No. DMEA -3889, Lewis Bros. Partnership, Star of Hope Mine, Custer County, Idaho, Lead-Zinc.

The application in question was covered by a thorough field examination by Mr. Howard B. Nickelson, USGS. The workings were mapped and a considerable amount of check sampling was done.

The mine consists of 5 levels, totalling approximately 2,150 feet of workings which explored three veins. The ore minerals occur in white quartz veins in dark quartzites. Vein strike lengths are short, approximately 200 feet.

In view of the sizeable amount of exploration work already done, with insignificant results, any additional work would be unwarranted. A few small ore pods have been found (ore width less than a foot) and probably a few hundred tons of ore are presently available. Additional work could probably find a few more small pods of silver-lead-zinc ore, but there seems little expectancy for anything of significance.

We concur with the Commodity members and the Field Team that the application should be denied.

W. R. Griswold

W. R. Griswold

WRG/er
Copy to: Docket
Base Metals
Chron.

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

October 20, 1955

Memorandum

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W. R. Griswold

W. R. Griswold

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

RECEIVED
OCT 17 1955

October 17, 1955

Griswold

Re: DMEA-3889
Lead-Silver-Zinc
$16,269
Kenneth E. and
Donald W. Lewis
Consolidated Star of
Hope and Gold Dollar
Lodes
Custer County, Idaho

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop
Branch of Base Metals

Subject: Field team review and field examination report dated, respectively, October 5 and 7, 1955 and received October 10, 1955.

The Star of Hope Mine was examined by H. B. Nickelson (USGS) in company with field assistants and the applicant. During the examination the underground workings were inspected and mapped; critical areas were sampled and the potential of the Nos. 1, 2 and 3 veins were evaluated. As a result of this study the field examiner concluded that, although there was evidence to suggest that drilling or crosscutting from the face of the No. 5 level would intersect the No. 2 vein, the merit of the vein did not warrant the exploration.

The field report clearly demonstrates through data given on the size and grade of the ore shoots that the mineralization exposed in the more than 2,000 feet of workings on 5 levels was never economic. I agree with this conclusion and recommend denial of the application.

O. M. Bishop

O. M. Bishop

Copy to: Mr. Kiilsgaard, Room 5222
Division of Minerals
O. M. Bishop
Files

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

October 17, 1955

Re: DMEA-3889
Lead-Silver-Zinc
$16,269
Kenneth E. and
Donald W. Lewis
Consolidated Star of
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O. M. Bishop

Copy to: Mr. Kiilsgaard, Room 5222
Division of Minerals
O. M. Bishop
Files

IN REPLY REFER TO:

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

RECEIVED
OCT 1 5 1955
Griswold

October 17, 1955

Re: DMEA 3889
Lewis Brothers
Star of Hope mine
Custer County, Idaho
$18,845.74 - Lead, Zinc, Silver

Memorandum

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

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

Subject: Review of Field Team report.

The applicants asked for assistance in the amount of $18,845.75 to further explore narrow veins which have produced a small amount of ore, underground work considered.

The examiners conclude that the generally narrow and short, but in several cases good grade, ore shoots are not likely to be productive of important amounts of ore. Sampling of exploration, development and production workings, workings quite disproportionate to the inferred production as indicated by the stopes, sustains the conclusions of the examiners and the recommendation of the Field Team that the application be denied.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
OCT 18 1955

October 17, 1955

Re: DMEA 3889
Lewis Brothers
Star of Hope mine
Custer County, Idaho
$18,845.74 - Lead, Zinc, Silver

Memorandum

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I concur with the recommendation.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-10/17/55

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

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

RECEIVED
OCT 14 1955

October 7, 1955

Griswold
Betty

Docket

Mr. Donald W. Lewis
2548 Washington Avenue
Lemon Grove, California

Re: Docket No. DMEA-3889 (lead-silver)
Lewis Brothers (Partnership)
Star of Hope Mine
Custer County, Idaho

Dear Mr. Lewis:

This will acknowledge your letter of September 7, 1955, to Mr. Howard B. Nickelson.

Your proposal and a report by Mr. Nickelson have been forwarded to Washington. You should hear from them shortly.

Sincerely yours,

Verne C. Fryklund, Jr.
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, NW Dist.

cc: DMEA (2) ✓
[illegible] (2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
OCT 10 1955

October 7, 1955

Answered

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

Re: Docket No. DMEA-3889 (lead-silver)
Kenneth E. and Donald W. Lewis
Star of Hope Mine
Custer County, Idaho

Dear Mr. Selfridge:

Enclosed are four copies of a memorandum by Howard B. Nickelson, U. S. Geological Survey, discussing the application to explore the Star of Hope mine, and three copies of a letter dated September 7, 1955, from the applicant amending his application. Nickelson has evaluated this new proposal in his report.

Geologic evidence indicates that the maximum strike length of any possible ore zone on the No. 5 level would be about 200 feet. Rather extensive sample data indicates that pods of ore grade material exist on the veins but that there is no reason to expect an ore zone 200 feet long. We agree with Mr. Nickelson in saying that the cost of exploration may well equal, or exceed, the value of any ore found.

We recommend that the application be denied.

By Field Team, Region I, NW Dist.

for Verne C. Fryklund
A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

for Stephen W. Zolotoff
Wing G. Agnew, Member
U. S. Bureau of Mines

Received by
DMEA OPERATING COMMITTEE
10-14-55

Enclosure

cc: USBM (2)
USGS (SRO) Nickelson

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

RECEIVED
OCT 10 1955

October 5, 1955

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: Howard B. Nickelson, Geologist, U. S. Geological Survey

Subject: Application examination, Docket No. DMEA-3889 (lead-silver), Star of Hope Mine, Copper Basin Mining District, Custer County, Idaho, Kenneth E. and Donald W. Lewis, 2548 Washington Avenue, Lemon Grove, California.

## INTRODUCTION

The Star of Hope mine, owned by Kenneth E. and Donald W. Lewis, partners, was examined on July 14, 15, and 16, 1955, by the writer and Tom Huber, Field Assistant. The applicants were also present. The examination consisted of mapping most of the underground workings, cutting samples, and doing a limited amount of surface mapping. On September 15, 1955, the property was re-examined briefly for the purpose of cutting additional samples and examining the old stope above the proposed exploration target. Don Alvord, Geologist, Geological Survey, accompanied the writer.

The applicants originally proposed to test the downward extension of known lead-silver veins by diamond drilling; they later modified their proposal and requested exploration by crosscutting and drifting.

## RECOMMENDATION

It is recommended that the application be denied.

## LOCATION

The property is on the east ridge above Star Hope Creek in unsurveyed T. 4 N., R. 21 E., Custer County, Idaho, in the Copper Basin Mining District. It can be reached from Mackay as follows: Travel toward Challis on U. S. Highway 93 to a dirt road several miles beyond the Mackay Reservoir; this road, known as the Bowman road, crosses the divide into Copper Basin and connects with the Big Lost River road.

Reviewed by
Final Operation [illegible]
10-14-55
([illegible])

Travel up the Big Lost River road for approximately 2 miles to the Muldoon road, which is about half a mile below the Copper Creek Forest Guard Station. Follow the Muldoon road south for approximately 10 miles to the mine. The total distance from Mackay to the mine is approximately 44 miles.

The property consists of two patented claims--the Star of Hope, Lot 38Y, and the Gold Dollar, Lot 39, of Mineral Survey No. 781. A claim map copied from a photostatic copy of the survey plat is part of the enclosed map.

## DESCRIPTION OF THE WORKINGS AND SURFACE FACILITIES

A small cabin is on the property, but no other surface or underground facilities exist. During the summer of 1954 Kenneth E. Lewis constructed an access road from the Star Hope road to the property; this road is steep but is passable to pickups, jeeps and trucks. He also opened the lower level portal and made the raise between Levels No. 5, 4, and 3 accessible. During this time he cut numerous samples, which were assayed by the International Smelting and Refining Company, Salt Lake City, Utah, Tooele Plant, and by the Idaho Assay Office at Mackay. The locations and results of these samples are shown on the enclosed map.

## CONDITION AND SEASONAL ACCESSIBILITY OF THE ROADS

Approximately 35 miles of dirt road would require snow removal from December to April in order to keep the roads to the property open, and it is doubtful if the last 2 miles of this road could be cleared without exorbitant expense.

## COMPETENCY OF THE APPLICANTS

Kenneth E. Lewis is a graduate civil engineer and his brother, Donald W. Lewis, is a manager for a telephone company in San Diego, California. Kenneth E. Lewis would manage the mine and would hire men capable of completing the proposed work.

The partners are able to assume financial responsibility for a modest exploration project.

## APPLICANTS' PROPERTY RIGHTS

The partners own six-sevenths of the two patented claims; the other one-seventh of this property is owned by a church organization.

## HISTORY OF THE MINE

Joseph B. Umpleby (Geology and Ore Deposits of the Mackay Region, Idaho; U.S.G.S. Prof. Paper 97, 1917), reports that the Star of Hope mine was probably the first mineral location in this district of Idaho. It was located in 1880 and exploited during the decade following by Isaac Lewis, the applicants' great grandfather; the mine has apparently been idle since that time. All the workings were driven with hand steel and consequently are narrow.

## MINE WORKINGS

The mine consists of five levels, totaling approximately 2,150 feet of underground workings which explored three veins (No. 1, 2, and 3) as shown on the enclosed map.

The portal of the upper level (No. 1) is caved, but the level is accessible via a raise and stope off the No. 2 level. The upper level was not mapped, but its approximate location is shown as a dotted line on the enclosed map. This small stope extending from the raise to above the No. 1 level was not mapped. It is V-shaped, and is approximately 50 feet long and 30 to 40 feet wide.

The No. 2 level, totaling approximately 600 feet of workings exposed the No. 1 vein for a distance of 210 feet and cut the No. 2 vein in a crosscut. A 107-foot winze, inclined 65°, followed the No. 1 vein to the No. 3 level. This winze was not examined by the DMEA field men as it was not laddered.

The No. 3 level, approximately 97 feet below the No. 2 level, was developed partly from the winze and partly from the raise off the lower or No. 5 level. The portion of the level developed off the raise is approximately 8 feet below that which was developed from the winze. The No. 3 level consists of approximately 360 feet of drift, 144 feet of crosscut, and three stopes, the largest of which is 20 feet wide and extends up the vein for 75 feet. This level explored the three known veins.

The No. 4 level was driven approximately 67 feet below the No. 3 level off the raise from the No. 5 level. The workings consists of a 97-foot crosscut, a 13-foot drift, and a 30-foot raise. The raise and the drift are on the No. 2 vein.

The No. 5 level, 82 feet below the No. 4 level, consists of 475 feet of crosscut and approximately 30 feet of drift.

## GEOLOGY

Umpleby groups the sedimentary rocks in the Copper Basin area as Paleozoic in age. In the southern part of the Copper Basin the sedimentary rocks are metamorphosed bluish-grey, fine-grained quartzite and dark-blue siliceous limestones. In the northern part in the mine vicinity, the sedimentary rocks are clear white fine-grained quartzite beds, and above them are beds of siliceous and calcareous shale and magnesium limestones.

The sedimentary rocks at the mine from a point east of the vein outcrop to the northwest consist of black thin-bedded argillite, buff-colored quartzite, and dark fine-grained quartzite that grade into fine-grained quartzite containing beds of dark limestone. The quartz veins are confined to the dark fine-grained quartzite. The bedding of the fine-grained massive quartzite in the mine was difficult to determine, but the attitudes suggest that the beds are folded and crumpled but generally strike northwest and dip northeast.

The sedimentary rocks have been intruded by rhyolite porphyry and granitic dikes which are conspicuous just north of the mine.

The ore minerals occur in white quartz veins in the dark fine-grained quartzite. The quartz veins strike east and range in dip from 30° to 70° N. (The No. 1 vein dips about 30° on the No. 1 level, steepens to 53° on the No. 2 level, and is 65° on the No. 3 level.) The east extension of the veins terminates against an argillite bed that strikes N. 37° W. and dips 30°-35° NE.; the west ends of the veins weaken in all the west drift faces. The three larger veins seem to be of fair width (from 18 inches to 6 feet) for approximately 200 feet along their strike.

Three reverse faults trending northeast and dipping northwest were mapped in the underground workings. The vein displacements resulting from this faulting are less than 10 feet.

The ore minerals galena and tetrahedrite are generally concentrated along the hanging wall of the quartz vein, along fractures across the veins, and in bunches in brecciated portions of the veins. The mineral occurrence suggests that the galena and tetrahedrite were deposited later than the quartz and after or during fracturing of the quartz veins.

Assays from samples across the veins are, in general, too low to constitute ore, although some sample assays across particular portions of the veins were of ore grade. Special samples across rich stringers

had high lead and silver assay values. It is believed that weighted assays from systematic sampling of the three main veins would not be of ore grade. The veins are discussed below.

The No. 1 vein was drifted on the No. 2 level for approximately 200 feet. This vein consists mainly of white iron-stained quartz with scattered crystals of galena and tetrahedrite near the hanging wall of the vein and with lesser amounts within the vein. No samples were cut on this level, but the applicants' Samples 1, 2, 3 and 2A (see map for sample data) indicate a small pod of ore may exist at this location. The galena and tetrahedrite are oxidized, and it is suspected the assay values represent carbonate ore. At Station 11 the vein ended abruptly against the argillite.

The No. 2 vein on the No. 2 level was cut by a north crosscut located just east of the winze. The quartz vein here was 6 inches to 1 foot in width, and the applicants' Sample 3A, reported to have cut across a 3-foot width, assayed 17.8 ounces of silver per ton and 13.6 percent lead. This assay may well be representative, as the vein was well disseminated with galena. The north crosscut at Station 12 was mainly in argillite and did not intersect the No. 2 vein.

The applicants' samples from the stope indicate some rather good ore was mined from this area, mainly above the No. 1 level.

The assay values of samples from the No. 1 vein on the No. 3 level are very low (see my Samples No. 471A and 470A and applicants' Sample No. 28), and the vein has become weak. The No. 2 vein on the No. 3 level has become stronger, but as shown by the assay values of my samples (474A, 475A, 476A, 472A, and 473A), it is not of ore grade. Samples No. 21 and 22 taken near Sample No. 476A show that there are short rich portions in the vein.

The No. 2 vein at Station 37 was stoped 16 feet along the vein and 75 feet up the dip of the vein. The ore was probably hand sorted because considerable rock was gobbed in the stope. Several other small stopes were driven up on the vein in this area. Sample No. 477A probably represents the average grade of the vein. Sample No. 478A was cut across the vein from a pillar. Samples No. 30 and 31 were cut from the rich hanging wall stringer.

The No. 3 vein on the No. 3 level was stoped about 15 feet above the floor of the drift from the crosscut to the argillite contact where the vein ended. A short crosscut above the drift level reached the No. 2 vein. The area between the two veins is interlaced with numerous quartz- and galena-filled fractures. Sample No. 411B, which was taken during the

September re-examination, was cut across what looked to be an average portion of the vein.

What is believed to be the No. 2 vein on the No. 4 level was examined on September 15, 1955, to determine the length of the drift and size of the vein, and to cut Sample No. 410B. The drift was partially gobbed with waste, but we were able to determine that the drift was about 13 feet long and the vein was approximately 1 foot wide. A raise driven from the crosscut followed the vein up the dip for approximately 35 feet, but the width of the vein observed in back of the raise was approximately the same as on the level.

The small veins on the No. 4 level are less than 1 foot wide but are of good grade. The applicants' Samples No. 35 and 36 probably represent the grade of these two veins.

The barren quartz vein intersected at the face of the No. 5 level crosscut was drifted on for about 30 feet, and the first 82 feet of raise connecting with No. 3 level explored this barren vein.

Apparently, the miners who drove the No. 5 level crosscut believed the barren quartz vein was one of the veins explored from the 107-foot winze. Approximately 100 feet of additional crosscut on the No. 5 level should reach the veins explored on the upper levels.

## ORE RESERVES

It is estimated that 100 to 500 tons of ore could be mined by hand sorting from the various levels if the lower level and the raise were rehabilitated.

An estimate of the ore reserves that might be found by exploring the veins off the No. 5 level would be less than 1,000 tons; this estimate is based upon the type of ore shoots exploited on the upper levels.

## AVAILABILITY OF MANPOWER AND SUPPLIES

Kenneth E. Lewis plans to hire one or two miners at Mackay. Supplies can be obtained from Mackay and the neighboring town.

## APPLICANTS' PROPOSAL

The applicants originally planned to diamond drill to locate and obtain the grade of the veins from various locations dependent upon the Field Team's recommendation. After the field examination they changed their exploration project proposal as per letter dated

September 7, 1955. This newly proposed exploration was to consist of approximately 100 feet of crosscutting and 250 feet of drifting.

The diamond drilling would no doubt determine the vein's existence off the No. 5 level, but the crosscutting and drifting would be the logical method of exploration if geologic evidence on the upper levels had suggested the possibility of a reasonable amount of ore on the No. 5 level.

## CONCLUSION

Some ore does exist in the mine, but the reserves are small; the chances for finding additional small ore pods are fair. Although additional pods may be found, it is believed that the cost of exploration may well equal, or exceed, the value of the ore.

Enclosure

Distribution:
DMEA (4)
USBM (2)
USGS (SRO)
Docket
Nickelson

Dmea (2)

RECEIVED
SEP 12 1955

Lemon Grove, California
September 7, 1955

Mr. Howard B. Nickelson
U. S. Geological Survey
South 157 Howard Street
Spokane 4, Washington

3889
Lewis Bros.

SUBJECT: Exploration Loan - Star of Hope Mine

Dear Mr. Nickelson,

Gravell
Betty

We wish to amend our application of May 18, 1955 for an exploration loan. The exploration work now proposed, involves extension of the lower, or 5th level until it intersects the Northernmost of the two main parallel veins, and drifting on this vein a total distance of 250 feet. The current extremities of exploration of this vein on the third level represent about 215 feet, so the 250 feet seems adequate to explore the vein at the lower level. We feel it is best not to contract for more footage of drifting now, because another contract could be entered into if exploration of the 250 feet indicates the advisability of further drifting. We have allowed 100 feet in the cost estimate to reach the vein.

Some 40 feet of the proposed drifting is to the East of the extension of the 5th level, and the rest, some 210 feet, to the West. We propose to leave all track laid, but remove pipe from the Eastward drifting to be used in drifting Westward. This and the extra track required on the dump accounts for discrepancies between pipe and track footages.

Enclosed are the amended cost estimates. not attached
Betty

In the event a contract is secured we plan to start work about May 1, 1956. Although orders for equipment would be placed some what earlier.

We are negotiating with the other 1/7th owners to purchase their interest or obtain their consent to lien, and will advise you when this settled.

We will be pleased to receive any suggestions you may have, and hope to hear from you at your earliest convenience.

Yours truly,

Donald W. Lewis
for
Donald W. & Kenneth E. Lewis

RECEIVED
SEP 9 1955
U.S.G.S.
SPOKANE, WASH.

Reviewed by
DMEA OPERATING COMMITTEE
10-14-55
(date)

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

~~[illegible]~~
No. 157 Howard Street
Spokane 4, Washington

RECEIVED
OCT 10 1955

October 7, 1955

Griswold

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

Re: Docket No. DMEA-3889 (lead-silver)
Kenneth E. and Ronald W. Lewis
Star of Hope Mine
Custer County, Idaho

Dear Mr. Selfridge:

Enclosed are four copies of a memorandum by Howard B. Nicholson, U. S. Geological Survey, discussing the application to explore the Star of Hope mine, and three copies of a letter dated September 7, 1955, from the applicant amending his application. Nicholson has evaluated this new proposal in his report.

Geologic evidence indicates that the maximum strike length of any possible ore zone on the No. 5 level would be about 200 feet. Rather extensive sample data indicates that pods of ore grade material exist on the veins but that there is no reason to expect an ore zone 200 feet long. We agree with Mr. Nicholson in saying that the cost of exploration may well equal, or exceed, the value of any ore found.

We recommend that the application be denied.

By Field Team, Region I, NW Dist.

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

RECEIVED BY
OFFICE OF THE SECRETARY
10/14/55

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

Enclosure
cc: USGS (2)
USGS (ERO) Nicholson

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

RECEIVED
OCT 10 1955

October 5, 1955

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: Howard B. Nicholson, Geologist, U. S. Geological Survey

Subject: Application examination, Docket No. DMEA-3809 (lead-silver), Star of Hope Mine, Copper Basin Mining District, Custer County, Idaho, Kenneth E. and Donald W. Lewis, 2348 Washington Avenue, Lemon Grove, California.

INTRODUCTION

The Star of Hope mine, owned by Kenneth E. and Donald W. Lewis, partners, was examined on July 14, 15, and 16, 1955, by the writer and Tom Huber, Field Assistant. The applicants were also present. The examination consisted of mapping most of the underground workings, cutting samples, and doing a limited amount of surface mapping. On September 15, 1955, the property was re-examined briefly for the purpose of cutting additional samples and examining the old stope above the proposed exploration target. Ben Alvord, Geologist, Geological Survey, accompanied the writer.

The applicants originally proposed to test the downward extension of known lead-silver veins by diamond drilling; they later modified their proposal and requested exploration by crosscutting and drifting.

RECOMMENDATION

It is recommended that the application be denied.

LOCATION

The property is on the east ridge above Star Hope Creek in unsurveyed T. 4 N., R. 21 E., Custer County, Idaho, in the Copper Basin Mining District. It can be reached from Mackay as follows: Travel toward Challis on U. S. Highway 93 to a dirt road several miles beyond the Mackay Reservoir; this road, known as the Bowman road, crosses the divide into Copper Basin and connects with the Big Lost River road.

Reviewed by
DMEA CHALLENGE COMMITTEE
10-14-55
(date)

Travel up the Big Lost River road for approximately 2 miles to the Muldoon road, which is about half a mile below the Copper Creek Forest Guard Station. Follow the Muldoon road south for approximately 10 miles to the mine. The total distance from Mackay to the mine is approximately 44 miles.

The property consists of two patented claims--the Star of Hope, Lot 38V, and the Gold Dollar, Lot 39, of Mineral Survey No. 781. A claim map copied from a photostatic copy of the survey plat is part of the enclosed map.

## DESCRIPTION OF THE WORKINGS AND SURFACE FACILITIES

A small cabin is on the property, but no other surface or underground facilities exist. During the summer of 1954 Kenneth E. Lewis constructed an access road from the Star Hope road to the property; this road is steep but is passable to pickups, jeeps and trucks. He also opened the lower level portal and made the raise between Levels No. 3, 4, and 5 accessible. During this time he cut numerous samples, which were assayed by the International Smelting and Refining Company, Salt Lake City, Utah, Tonopah Mint, and by the Idaho Assay Office at Mackay. The locations and results of these samples are shown on the enclosed map.

## CONDITION AND SEASONAL ACCESSIBILITY OF THE ROADS

Approximately 35 miles of dirt road would require snow removal from December to April in order to keep the roads to the property open, and it is doubtful if the last 2 miles of this road could be cleared without considerable expense.

## QUALIFICATIONS OF THE APPLICANTS

Kenneth E. Lewis is a graduate civil engineer and his brother, Donald W. Lewis, is a manager for a telephone company in San Diego, California. Kenneth E. Lewis would manage the mine and would hire men capable of completing the proposed work.

The partners are able to assume financial responsibility for a modest exploration project.

## APPLICANTS' PROPERTY RIGHTS

The partners own six-sevenths of the two patented claims; the other one-seventh of this property is owned by a church organization.

RECEIVED
OCT 10 1955

## HISTORY OF THE MINE

Joseph B. Umpleby (Geology and Ore Deposits of the Shoshone Region, Idaho; U.S.G.S. Prof. Paper 97, 1917), reports that the Star of Hope mine was probably the first mineral location in this district of Idaho. It was located in 1880 and exploited during the decade following by Isaac Lewis, the applicants' great grandfather; the mine has apparently been idle since that time. All the workings were driven with hand steel and consequently are narrow.

## MINE WORKINGS

The mine consists of five levels, totaling approximately 2,150 feet of underground workings which explored three veins (No. 1, 2, and 3) as shown on the enclosed map.

The portal of the upper level (No. 1) is caved, but the level is accessible via a raise and stope off the No. 2 level. The upper level was not mapped, but its approximate location is shown as a dotted line on the enclosed map. This small stope extending from the raise to above the No. 1 level was not mapped. It is V-shaped, and is approximately 30 feet long and 30 to 40 feet wide.

The No. 2 level, totaling approximately 600 feet of workings exposed the No. 1 vein for a distance of 210 feet and cut the No. 2 vein in a crosscut. A 187-foot winze, inclined 65°, followed the No. 1 vein to the No. 3 level. This winze was not examined by the BMA field men as it was not laddered.

The No. 3 level, approximately 97 feet below the No. 2 level, was developed partly from the winze and partly from the raise off the lower or No. 5 level. The portion of the level developed off the raise is approximately 8 feet below that which was developed from the winze. The No. 3 level consists of approximately 360 feet of drift, 144 feet of crosscut, and three stopes, the largest of which is 80 feet wide and extends up the vein for 75 feet. This level explored the three known veins.

The No. 4 level was driven approximately 67 feet below the No. 3 level off the raise from the No. 5 level. The workings consists of a 97-foot crosscut, a 13-foot drift, and a 38-foot raise. The raise and the drift are on the No. 2 vein.

The No. 5 level, 82 feet below the No. 4 level, consists of 475 feet of crosscut and approximately 30 feet of drift.

## GEOLOGY

Ingalsby groups the sedimentary rocks in the Copper Basin area as Paleozoic in age. In the southern part of the Copper Basin the sedimentary rocks are metamorphosed bluish-gray, fine-grained quartzite and dark-blue siliceous limestones. In the northern part in the mine vicinity, the sedimentary rocks are clear white fine-grained quartzite beds, and above them are beds of siliceous and calcareous shale and magnesian limestones.

The sedimentary rocks at the mine from a point east of the vein entrance to the northwest consist of black thin-bedded argillite, buff-colored quartzite, and dark fine-grained quartzite that grade into fine-grained quartzite containing beds of dark limestone. The quartz veins are confined to the dark fine-grained quartzite. The bedding of the fine-grained massive quartzite in the mine was difficult to determine, but the attitudes suggest that the beds are folded and crumpled but generally strike northwest and dip northeast.

The sedimentary rocks have been intruded by rhyolite porphyry and granitic dikes which are conspicuous just north of the mine.

The ore minerals occur in white quartz veins in the dark fine-grained quartzite. The quartz veins strike east and range in dip from 30° to 70° S. (The No. 1 vein dips about 30° on the No. 1 level, steepens to 55° on the No. 2 level, and is 65° on the No. 3 level.) The east extension of the veins terminates against an argillite bed that strikes N. 35° W. and dips 30°-35° NE.; the west ends of the veins weaken in all the east drift faces. The three longer veins seem to be of fair width (from 18 inches to 6 feet) for approximately 200 feet along their strike.

Three reverse faults trending northeast and dipping northwest were mapped in the underground workings. The vein displacements resulting from this faulting are less than 10 feet.

The ore minerals galena and tetrahedrite are generally concentrated along the hanging wall of the quartz vein, along fractures across the veins, and in bunches in brecciated portions of the veins. The mineral occurrences suggests that the galena and tetrahedrite were deposited later than the quartz and after or during fracturing of the quartz veins.

Assays from samples across the veins are, in general, too low to constitute ore, although some sample assays across particular portions of the veins were of ore grade. Special samples across rich stringers

had high lead and silver assay values. It is believed that weighted assays from systematic sampling of the three main veins would not be of ore grade. The veins are discussed below.

The No. 1 vein was drifted on the No. 2 level for approximately 200 feet. This vein consists mainly of white iron-stained quartz with scattered crystals of galena and tetrahedrite near the hanging wall of the vein and with lesser amounts within the vein. No samples were cut on this level, but the applicants' Samples 1, 2, 3 and 24 (see map for sample data) indicate a small pod of ore may exist at this location. The galena and tetrahedrite are oxidized, and it is suspected the assay values represent carbonate ore. At Station 11 the vein ended abruptly against the argillite.

The No. 2 vein on the No. 2 level was cut by a north crosscut located just east of the winze. The quartz vein here was 6 inches to 1 foot in width, and the applicants' Sample 34, reported to have cut across a 1-foot width, averaged 17.8 ounces of silver per ton and 13.6 percent lead. This assay may well be representative, as the vein was well discriminated with galena. The north crosscut at Station 12 was mainly in argillite and did not intersect the No. 2 vein.

The applicants' samples from the stope indicate some rather good ore was mined from this area, mainly above the No. 1 level.

The assay values of samples from the No. 1 vein on the No. 3 level are very low (see my Samples No. 473A and 470A and applicants' Sample No. 28), and the vein has become weak. The No. 2 vein on the No. 3 level has become stronger, but as shown by the assay values of my samples (479A, 479A, 476A, 478A, and 473A), it is not of ore grade. Samples No. 23 and 28 taken near Sample No. 476A show that there are short rich portions in the vein.

The No. 2 vein at Station 37 was stoped 16 feet along the vein and 75 feet up the dip of the vein. The ore was probably hand sorted because considerable rock was gobbed in the stope. Several other small stopes were driven up on the vein in this area. Sample No. 477A probably represents the average grade of the vein. Sample No. 478A was cut across the vein from a pillar. Samples No. 30 and 31 were cut from the rich hanging wall stringer.

The No. 3 vein on the No. 3 level was stoped about 15 feet above the floor of the drift from the crosscut to the argillite contact where the vein ended. A short crosscut above the drift level reached the No. 2 vein. The area between the two veins is interlaced with numerous quartz- and galena-filled fractures. Sample No. 41B, which was taken during the

September re-examination, was cut across what looked to be an average portion of the vein.

What is believed to be the No. 2 vein on the No. 4 level was examined on September 15, 1959, to determine the length of the drift and size of the vein, and to cut Sample No. 4188. The drift was partially gobbed with waste, but we were able to determine that the drift was about 13 feet long and the vein was approximately 1 foot wide. A raise driven from the crosscut followed the vein up the dip for approximately 35 feet, but the width of the vein observed in back of the raise was approximately the same as on the level.

The small veins on the No. 4 level are less than 1 foot wide but are of good grade. The applicants' Samples No. 35 and 36 probably represent the grade of these two veins.

The barren quartz vein intersected at the face of the No. 5 level crosscut was drifted on for about 30 feet, and the first 80 feet of raise connecting with No. 3 level explored this barren vein.

Apparently, the miners who drove the No. 5 level crosscut believed the barren quartz vein was one of the veins explored from the 187-foot winze. Approximately 120 feet of additional crosscut on the No. 5 level should reach the veins explored on the upper levels.

## ORE RESERVES

It is estimated that 100 to 200 tons of ore could be mined by hand sorting from the various levels if the lower level and the raise were rehabilitated.

An estimate of the ore reserves that might be found by exploring the veins off the No. 5 level would be less than 1,000 tons; this estimate is based upon the type of ore shoots exploited on the upper levels.

## AVAILABILITY OF MANPOWER AND SUPPLIES

Kenneth E. Lewis plans to hire one or two miners at Hailey. Supplies can be obtained from Hailey and the neighboring town.

## APPLICANTS' PROPOSAL

The applicants originally planned to diamond drill to locate and obtain the grade of the veins from various locations dependent upon the Field Team's recommendation. After the field examination they changed their exploration project proposal as per letter dated

September 7, 1955. This newly proposed exploration was to consist of approximately 100 feet of crosscutting and 250 feet of drifting.

The diamond drilling would no doubt determine the vein's existence off the No. 5 level, but the crosscutting and drifting would be the logical method of exploration if geologic evidence on the upper levels had suggested the possibility of a reasonable amount of ore on the No. 5 level.

## CONCLUSION

Some ore does exist in the mine, but the reserves are small; the chances for finding additional small ore pods are fair. Although additional pods may be found, it is believed that the cost of exploration may well equal, or exceed, the value of the ore.

Respectfully

Distribution:
- [illegible] (4)
- [illegible] (2)
- [illegible] (one)
- Rocket
- Fischbein

Lemon Grove, California
September 7, 1955

Nickel
Lewis

Mr. Howard B. Nickelson
U. S. Geological Survey
South 157 Howard Street
Spokane 4, Washington

SUBJECT: Exploration Loan - Star of Hope Mine

Dear Mr. Nickelson,

We wish to amend our application of May 18, 1955 for an exploration loan. The exploration work now proposed, involves extension of the lower, or 5th level until it intersects the Northernmost of the two main parallel veins, and drifting on this vein a total distance of 250 feet. The current extremities of exploration of this vein on the third level represent about 215 feet, so the 250 feet seems adequate to explore the vein at the lower level. We feel it is best not to contract for more footage of drifting now, because another contract could be entered into if exploration of the 250 feet indicates the advisability of further drifting. We have allowed 100 feet in the cost estimate to reach the vein.

Some 40 feet of the proposed drifting is to the East of the extension of the 5th level, and the rest, some 210 feet, to the West. We propose to leave all track laid, but remove pipe from the Eastward drifting to be used in drifting Westward. This and the extra track required on the dump accounts for discrepancies between pipe and track footages.

Enclosed are the amended cost estimates.

In the event a contract is secured we plan to start work about May 1, 1956. Although orders for equipment would be placed some what earlier.

We are negotiating with the other 1/7th owners to purchase their interest or obtain their consent to lien, and will advise you when this settled.

We will be pleased to receive any suggestions you may have, and hope to hear from you at your earliest convenience.

Yours truly,

Donald W. Lewis

Donald W. & Kenneth E. Lewis

for

RECEIVED
SEP 8 1955
U.S.G.S.
SPOKANE, WASH

Reviewed by
OMMA OPERATING COMMITTEE

10-14-55
(date)

RECEIVED
OCT 10 1955

CONTRACT COST

| | | |
|---|---|---|
| Tunnel Rehabilitation | $ 2,292.51 | (465' @ $ 4.93) |
| Exploration | $13,977.18 | (350' @ $39.93) |
| Total Cost | $16,269.69 | |

Total cost per Unit of Exploration- $\frac{\$16,269.69}{350}$ = $46.48/ft.

RECEIVED
SEP 9 1955
U. S. G. S.
SPOKANE, WASH.

## TUNNEL REHABILITATION - 463'

| | |
|---|---|
| Labor: | |
| 15 days @ $61.10 (see Schedule A) | $ 916.50 |
| Track (12#/yd. rail) 1150 @ 72¢/ft. (see Schedule B) | 813.60 |
| Floor 4' 4X4's (3X4's if available) 3'C-C (see Schedule B) | 74.00 |
| Timber (Local out) | - |
| Ore Car (Estimate fob Mine) | 200.00 |
| Hand Tools thrown in | - |
| Chain Saw Rental | 30.00 |
| Road Repair (see Schedule C) | 50.00 |
| SUB TOTAL | $2084.10 |
| Reserve for Contingencies, Preliminaries, & Overhead 10% | 208.41 |
| TOTAL | $2292.51 |

463' @ $4.95/ft.

# EXPLORATORY TUNNELING 350 FEET

| | | |
|---|---|---|
| Road Repair (see Schedule C) | | $ 300.00 |
| 3" Air Pipe & Couplings (see Schedule D) | 615' @ $ 1.16/ft. | 713.40 |
| 2" Air Pipe & Couplings (see Schedule D) | 190' @ $ 0.58/ft. | 110.20 |
| Track (12#/yd. rail) (see Schedule B) | 700' @ $ 0.72/ft. | 504.00 |
| Ties 4'-4X4's (3X4's if available) 3' C-C (see Schedule B) | | 51.00 |
| Compressor Rental 210 CFM, 4 mos. | @ $300.00 | 1200.00 |
| Compressor haul from Place of Rental (see Schedule F) | | 170.00 |
| Drifter, Jack Leg, & Hose Rental, 4 mos. | @ $ 40.00 | 160.00 |
| Bits & Sharpening Expense (Estimate) | | 185.00 |
| Truck Depreciation (Estimate) | | 200.00 |
| Fuel, etc. for Compressor & Truck (Estimate) | | 450.00 |
| Fuel Drums, Hand Pump, etc. (Estimate) | | 90.00 |
| Miscellaneous Tool Rental (Welding, etc.) (Complete Mechanic Tools available in Kotoburo) | | 100.00 |
| Sampling & Assaying | | 75.00 |
| **Labor & Explosives:** | | |
| Labor (see Schedule A) | $ 61.10/day | |
| Powder, Caps, & Fuse | $ 14.00 | |
| | $ 75.10/day | |
| @ 3 ft. Drifting per day | $ 25.03/ft. | |
| 350 feet | @ $ 25.03 | 8,760.50 |
| SUB TOTAL | | 12,977.18 |
| Reserve for Contingencies, Preliminaries & Overhead | | 1,000.00 |
| | | 13,977.18 |
| 350' | @ $ 39.93 | |

## SCHEDULE A

**WAGE SCHEDULE**
**(Union Scale)**

| | | | | |
|---|---|---|---|---|
| K. C. Lewis, Manager (Not Taxable) Load rate @ 2.42/hr. | | | | $19.36/day |
| One Miner | $2.15/hr. | - $17.20/day | | |
| Per diem | | 2.00 | | |
| | | | $19.20/day | |
| One Mucker | $2.00/hr. | - $16.00/day | | |
| Per diem | | 2.00 | $18.00/day | |
| | | | $37.20/day | |
| Total Taxable Wages | | | $37.20/day | |

Payroll Taxes & Insurance:
Workmen's Compensation Insurance - 8.5%

Payroll Taxes:

| | |
|---|---|
| U. S. | - 8.0 |
| State | - 1.7 |
| | 12.5% |

| | | | |
|---|---|---|---|
| Total Taxes & Insurance(0.122) ($37.20) | | $ 4.54/day | |
| Total Taxable Wages & Taxes | | | $41.74/day |
| Total Wage Expense per day | | | $61.10/day |

## SCHEDULE B

### MINE RAIL COST

| | | |
|---|---|---|
| 12#/yd. rail | = approximate | $11/100# in Los Angeles 1955 |
| Assume | = approximate | $12/100# Denver 1956 |
| | | 48¢/ft. |

Freight Denver to Hackay:

| | | |
|---|---|---|
| L&L rate | = | $2.59/100# plus 15% |
| | = | $2.98/100# |
| | = approximate | 12¢/ft. |

Truck from Hackay to Mine:

| | | |
|---|---|---|
| Rate | = | $8.00/ton |
| | = | 2¢/ft. |

Fish Plates & bolts:

| | | |
|---|---|---|
| Cost for | = | 25' @ $8.00 |
| | = | 8¢/ft. |

| | | |
|---|---|---|
| Freight & Truck (Fish plates & bolts) | = 30% of cost assumed on basis of track cost and freight | |
| | = approximate | 2¢/ft. |

Total Cost = 48 plus 12 plus 2 plus 8 plus 2 = 72¢/ft.

## SCHEDULE C

### ROAD REPAIR

| | |
|---|---|
| Dozer @ $10.00/hr., 20 hrs. work & move | $200.00 |
| One man 3 days @ $19.36 | 58.08 |
| | $258.08 |

### REGRESSION

Tunnel Rehab - $ 50.00
Bor Drilling - $208.08

## SCHEDULE D

### AIR PIPE COST

3" pipe for 615'
2" pipe for 190'

| | 3" | 2" |
|---|---|---|
| Cost: | | |
| Price w/couplings | | |
| Current Los Angeles price | ($88¢/ft.) | ($44¢/ft.) |
| Announced Denver 1936 price | ($60¢/ft.) | ($43¢/ft.) |
| Freight: | | |
| 3" pipe - 7.6#/ft. | | |
| LCL freight - ($2.50/100#) - 15% | | |
| Denver to Mackay ($2.00/100#) | | |
| - 23¢/ft. | 23¢/ft. | |
| 2" pipe - 5.7#/ft. | | |
| Lado freight rate | | |
| - 11¢/ft. | | 11¢/ft. |
| Truck from Mackay to Mine @ $8.00/ton | | |
| 3" pipe - 3¢/ft. | 3¢/ft. | |
| 2" pipe - 2¢/ft. | | 2¢/ft. |
| Total cost per foot | $1.16/ft. | $0.58/ft. |

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OCT 10 1955

## SCHEDULE B

RAIL FIRM COST

Rehabilitation of old Tunnel:

| | | |
|---|---|---|
| 100 Tiles @ $1/3 SF - 1013 SF @ $40/1000 SF | = | $41.00 |
| 140 Tiles @ 10¢/tile | = | 14.00 |
| Approximate $19.00 labor | = | 19.00 |
| | | $74.00 |

New Drifting:

| | | |
|---|---|---|
| 117 Tiles @ $1/3 SF - 624 SF | = | $83.00 |
| 70 Tiles @ 10¢/tile | = | 7.00 |
| Approximate $19.00 labor | = | 19.00 |
| | | $51.00 |

## SCHEDULE F

### COMPRESSOR HAUL

Assume must haul from Boise, 235 miles

| | |
|---|---|
| 235 X 4 - 940 miles @ 10¢ | - $ 94.00 |
| 4 days @ 19.36 | - 77.44 |
| | $171.44 |
| Assume | $170.00 |

File Copy
Surname

Griswold
Selfridge
Matthews

500

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

AUG 22 1955

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region I
Northwest District
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA-3889 (Lead-Zinc)
Lewis Brothers, Partnership
Star of Hope Mine
Custer County, Idaho

Dear Mr. Weissenborn:

With reference to the cited application, we are enclosing the memorandums of Mr. O. M. Bishop, USBM, dated August 17 and Mr. N. E. Nelson, USGS, dated August 4.

We shall await your recommendations.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (GHB)

Enclosures

APPROVED:

/s/ Robert W. Geehan (GHB)
Member, Bureau of Mines

Thor H. Kiilsgaard (GHB)
Member, Geological Survey

WRGriswold/er 8/18/55
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

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

August 17, 1955

RECEIVED
AUG 18 1955

Re: DMEA-3889
Lewis Brothers
(Partnership)
Consolidated Star
of Hope & Gold
Dollar Lodes
Custer County, Idaho

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop,
Branch of Base Metals

Subject: Review of application and recommendation for field referral

The Lewis brothers, owners of the old Star of Hope mine, have recently built 1 1/2 miles of road to the 2nd and 5th level portals, cleaned up old mine workings, replaced ladders, mapped, and sampled.

Past development is said to show a complex of several veins striking east-west and dipping 65° north. The main vein ranges from less than 1 foot to 5 feet in thickness traversing a series made up of quartzite and shale, with the possibility of limestone at greater depth. Of particular interest is the mineralization described in answer 4c as follows "Mineralization is not entirely confined to the vein proper but in some cases grades into the country rock for several feet, often as carbonates. For example some shale rock fractured with quartz adjacent to the main vein assayed $33 in lead and silver with no galena apparent." This sentence suggests the possibility of mineralization that may have been overlooked in the past, also the possibility that commercial mineralization may be somewhat more extensive than the quartz vein matter would indicate.

The exploration proposed consists of drilling from underground and surface stations to explore for new oreshoots, particularly larger bodies that may result from replacement of limestone at depth.

The field examination scheduled should, if possible, ascertain the evidence for believing replaceable limestones exist at greater depth and the possible depth involved. In general the small oreshoots mined in the past would not furnish attractive targets, but if there if a likelihood of competent, reactive host rocks at a reasonable depth, they should be tested.

The amount of drilling involved would not normally justify purchase of a drill, rods, etc. or the training of a crew. I would suggest the applicant give consideration to contract drilling.

O. M. Bishop

O. M. Bishop

Copy to - Division of Minerals
Mr. Kiilsgaard, Room 5222
O. M. Bishop
Files

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

August 17, 1955

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O. M. Bishop

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Copy to - Division of Minerals
Mr. Hillagaard, Room 5222
O. M. Bishop
Files

IN REPLY REFER TO:

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

RECEIVED
AUG - 5 1955
Griswold

August 4, 1955

Re: DMEA 3889
Lewis Brothers
Consol. Star of Hope and
Gold Dollar Lodes
Custer Co., Idaho
$18,845.74 - Lead-Zinc-Silver

Memorandum

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

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

Subject: Review of Application.

The Star Hope mine receives brief mention in the "Geology and Ore Deposits of the Mackay Region, Idaho," Prof. Paper 97, U.S.G.S. The mine was not open at the time of the visit of the author, Mr. Umpleby. The geologic sketch map with the Umpleby report shows the general relationship of the rocks of the upper Copper Basin area, but detail is lacking. The mine, as located, is in Paleozoic sedimentary beds near, by inference, a mass of granite. The beds are said to consist of quartzite, dolomite, shale and limestone. The text says the rock formations in the vicinity of the mine comprise a series of rather intensely metamorphosed bluish-gray fine-grained quartzites and dark blue siliceous limestones cut by dikes of granite and rhyolite porphyry.

The Paleozoic beds are characterized by advanced metamorphism and crumpling. The attitude is not mentioned. Quartzite predominated on the dumps. The application says shale forms the hanging wall and quartzite the footwall of a northerly dipping vein in parts of the First and Second Levels. By inference the two larger stopes may be in the contact of shale and quartzite. The small stope would seem to be entirely in the quartzite. The other veins shown are probably in the quartzite.

If, again by inference, since the dip of the beds is not given, the veins are of the bedded type, it seems improbable they would soon enter limestone, the location of which is not given but which is a part of the sedimentary series. If the veins cut the formation they might cut thru to underlying limestone, but since the position of the limestone is unknown, such a probability cannot be evaluated.

The stopes shown on the application map are small, 15 to 40 feet long, and such ore shoots make small targets for diamond drilling. Surface drilling would be of doubtful value, but underground drilling might locate extensions of the small known shoots. The production record and the map information furnish little support for the drilling program.

Without more information the application cannot be appraised. Some might be obtained from the applicants, but a field examination is called for. I recommend such an examination by the Field Team.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
AUG - 5 1955

August 4, 1955

Re: DMEA 3889
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Consol. Star of Hope and
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From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Application.

The Star Hope mine receives brief mention in the "Geology and Ore Deposits of the Mackay Region, Idaho," Prof. Paper 97, U.S.G.S. The mine was not open at the time of the visit of the author, Mr. Umpleby. The geologic sketch map with the Umpleby report shows the general relationship of the rocks of the upper Copper Basin area, but detail is lacking. The mine, as located, is in Paleozoic sedimentary beds near, by inference, a mass of granite. The beds are said to consist of quartzite, dolomite, shale and limestone. The text says the rock formations in the vicinity of the mine comprise a series of rather intensely metamorphosed bluish-gray fine-grained quartzites and dark blue siliceous limestones cut by dikes of granite and rhyolite porphyry.

The Paleozoic beds are characterized by advanced metamorphism and crumpling. The attitude is not mentioned. Quartzite predominated on the dumps. The application says shale forms the hanging wall and quartzite the footwall of a northerly dipping vein in parts of the First and Second Levels. By inference the two larger stopes may be in the contact of shale and quartzite. The small stope would seem to be entirely in the quartzite. The other veins shown are probably in the quartzite.

If, again by inference, since the dip of the beds is not given, the veins are of the bedded type, it seems improbable they would seem enter limestone, the location of which is not given but which is a part of the sedimentary series. If the veins cut the formation they might cut thru to underlying limestone, but since the position of the limestone is unknown, such a probability cannot be evaluated.

The stopes shown on the application map are small, 15 to 40 feet long, and such ore shoots make small targets for diamond drilling. Surface drilling would be of doubtful value, but underground drilling might locate extensions of the small known shoots. The production record and the map information furnish little support for the drilling program.

Without more information the application cannot be appraised. Some might be obtained from the applicants, but a field examination is called for. I recommend such an examination by the Field Team.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-8/4/55

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
No. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUN 27 1955

June 23, 1955

Mr. Kenneth [illegible] Lewis
537 Colorado
Altadena, California

Docket
DMEA-3889
Gaswold
Betty

Dear Mr. Lewis:

We received your application for DMEA assistance on June 10, 1955, and would like to schedule a field examination for the 14th, 15th, and possibly the 16th of July.

Please meet us in Mackay on the morning of the 14th of July at the motel next to the Texaco station which is a block off the main street on the highway toward Challis.

If my plans are changed as to this meeting date, I will telegraph you of the change.

I am looking forward to examining your property.

Sincerely yours,

Howard G. Hendleson
Geologist

Copy to: [illegible] (2)
[illegible] (2)
[illegible]
Donald [illegible] Lewis
2543 Washington Avenue
[illegible] Grove, California

[illegible]
Lewis Prod., Partnership
Star of the Hope Ldg
Custer County, Idaho

Kenneth E. Lewis
597 Colman
Altadena, California
May 30, 1955

Mr. A. E. Weissenborn
Defense Minerals Exploration
So 157 Howard Street
Spokane 4, Washington

Thank you for your letter of May 18, 1955. We have filled out the applications you enclosed and return them herewith.

Geologic evidence indicates the presence of large orebodies and the application as completed outlines a diamond drilling program. If a basic working agreement can be reached between us we would be receptive to suggestions of your field forces in detailing the program.

We are anxious to have your engineer visit us at our property during the first two weeks of July if at all possible in order to fit our own rather tight schedule. We hope to hear from you regarding our application at your earliest convenience so that we can coordinate our activities. Thank you.

Yours truly,

Kenneth E. Lewis

~~Kenneth E. Lewis~~
for
Kenneth E. & Donald W. Lewis

RECEIVED
JUN 10 1955

July 6, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region I & N.W. Dist.

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 I & N.W. Dist.

DMEA-3889 Lewis Brothers, Partnership

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

July 6, 1955
Subject: DMEA-3889
Re: Exploration Assistance
Star of Hope Mine

Lewis Brothers, Partnership
c/o Kenneth E. Lewis
597 Colman
Altadena, California

Dear Mr. Lewis:

The receipt of your application dated June 6, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

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

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

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

RECEIVED
JUL - 5 1955

June 30, 1955

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

Re: Transmittal of Application for Aid
Lewis Brothers, A Partnership
Star of Hope Mine
Custer County, Idaho

Dear Mr. Selfridge:

Enclosed are the original and two copies of an application submitted by Kenneth E. and Donald W. Lewis, partners, together with a plan map and section of the Star of Hope Mine. Only two copies of this plan map and section are available for transmittal.

A field examination is being arranged for the week of July 11, 1955.

Sincerely yours,

John S. Vhay

John S. Vhay
~~For:~~ A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

Enclosures
cc: DMEA(Orig.&2)
USBM(2)
Nickelson

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
JUL - 5 1955

RECEIVED
JUN 10 1955
U. S. G. S.
SPOKANE, WASH.

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

*Not to be filled in by applicant*

Docket No. 3889
Metal or Mineral Lead-zinc-copper-silver
Date Received 7-5-55
Estimated Cost $18,845.74
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: Lewis Brothers, Partnership, Idaho
% Kenneth E. Lewis, Also Donald W. Lewis
597 Colman — 2548 Washington Avenue
Altadena, California — Lemon Grove, California

(*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 Consolidated Star of Hope and Gold Dollar Lodes, Mineral Survey No. 781, in Big Lost River Mining District, Custer County, Idaho (Patented Claims)

(*b*) State any mine name by which the property is known. Star of Hope Mine

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

(*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.

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

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

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

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

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

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

(*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. working

(*c*) The work will start within 30 days and be completed within 5/ 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 6, 1951

Lewis Brothers Partnership
(Applicant)

By Donald W Lewis
2548 Washington Ave.
Lemon Grove, California

**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

RECEIVED
JUL - 5 1955

4. Physical Description

a. Mining operations were conducted on the property before and about the turn of the century by unknown parties, partially by lessees when the property was owned by Issac I. Lewis. Since the devaluation of silver the property has not been worked, but brief examinations have been made from time to time. In the summer of 1954 we replaced old laddering in the mine, did some cleanout work and have made the entire workings accessible for examination. We also built one and one half miles of road, which reaches the portals of levels 2 and 5, and constructed one cabin. Our program included some sampling and the mapping as inclosed herein.

b. No production figures are available except for the estimate of $50,000 by Umpleby in his geological report on the Mackay area in which he describes briefly the Star of Hope. Umpleby estimated the Star of Hope as the heaviest producer in the area. Ore reserves and grades are undetermined hence the desire for further exploration, although certain wide or indefinite conclusions might be drawn as to the ore in sight.

c. The mineralization is primarily in a tight quartz vein, consisting of galena, with minor amounts of iron, sphalerite, and copper. In some parts copper is of a appreciable percentage, and stains the rock heavily. Silver is present with the galena, presumably as argentite, and in general is of some what less value than the lead. Some "sand" carbonates appear as another lead mineral. Mineralization is not entirely confined to the vein proper but in some cases grades into the country rock for several feet, often as carbonates. For example some shale rock fractured with quartz adjacent to the main vein assayed $33 in lead and silver with no galena apparent.
The vein system is generally East and West, dipping to the North at average angles of 65 degrees from horizontal; is complex with several parallel veins discernable under ground, and various small cross factures. The main vein various from less than a foot to over 5 feet in thickness. The country rock is quartzite but beds of shale are present. The shale is encountered in the Eastern half of the 2nd and 1st levels and in their crosscuts, where it forms the hanging wall of the vein, with quartzite as the footwall. In the 3rd level the vein is entirely in quartzite with the shale appearing only in a few feet of the easternmost point of level 3 where it is the hanging wall of a mineralized cross fracture. In the 4th level the vein is in quartzite only. The 5th level is a crosscut adit to reach the vein and passes through at least two dioritic dykes and at least one narrow band of mineralized shale, as well as the predominating quartzite.

c. (Cont)
The fact that various visitors to the property including one mining engineer whom we hired several years ago reported favorably on the property, coupled with the further evidence we obtained through surveying and brief sampling, has led us to desire to prospect the property further and at depth. We are encouraged by the existence of limestone underlying the quartzite, immediately under the existing workings and feel that there good evidence in favor of larger replacement deposits below. (Umpleby's U. S. G. S. report implied that the area would bear prospecting at depth).

d. We have a road right to two of the 3 portals (levels 1, 2, and 5 have portals; levels 3 and 4 are blind. The portal at level 1 is covered with sluff and we do not anticipate using this portal, which in any case is only a few feet above the road). A trucking company in Mackay shipped from another property in the canyon last summer and gave me an estimate of $14 per ton in small lots of 10 or 12 tons trucked all the way to Salt Lake City from the mine. Large lots using the railroad at Mackay should ship at very reasonable rates. Mackay is about 52 miles by fair truck road, closer by road suitable for automobiles. Ketchum is 55 miles by fair road.

e. Manpower, is available with a number of miners working at odd jobs in Ketchum, Hailey, and Mackay. Materials, supplies and probably equipment may be found in greater variety at Twin Falls or Boise. Water is ample at all times, with a storage lake existing and adjacent to the mine. Level 5 "makes" water enough to supply all mining needs and more at any season. Power must be diesel or gasoline.

5. The Exploration Project

b. See enclosed map of the mine workings. The exploration program anticipated is a comprehensive diamond drilling plan from within the workings to locate or verify ore shoots as well as underground and/or surface drilling to locate larger orebodies at depth in the limestone underlying the existing workings. The longer drill holes will be based on evidence obtained from location of commercial grade ore shoots within the workings and existing stopes on known ore shoots. Drill station locations are not detailed but drill hole intersections of the parallel vein system can be made from each of the 5 levels.

d. The only partner who will actively engage in the exploration program will be Kenneth E. Lewis, 28 years of age. His mining experience is limited to last summer's activities, although he possesses some knowledge of mining and geology and is a graduate Civil Engineer with some experience in that field.

d. (Cont)
For general reference write Mr. Gordan C. Smith, Mining Engineer and U. S. Deputy Mineral Surveyor for whom Mr. Lewis worked on a patent survey: Gordan C. Smith, 105 Court House, Boise, Idaho. Other references are available. Mr. Lewis is of mining traditions and background, will hire a person familiar with the type of work contemplated, and would expect to rely largely on the technical advice of engineers in the business of giving such advice.

6. Estimate of Costs

a. None

b. Labor, supervision, and consultants:

| | | |
|---|---|---|
| 2 men @ 15.00 per day-approximate 140 days | - $4,200. | |
| Supervision, K. E. Lewis, $500 per month | - $2,500. | |
| Consultants, reserve for | - $ 500. | |
| | $7,200. | |
| | | $7,200. |

c. Operating materials and supplies:

| | | |
|---|---|---|
| Winch | - $ 50. | |
| Hand tools, reserve for | - $ 100. | |
| Gasoline Drums, pumps etc | - $ 50. | |
| Water drums | - $ 25. | |
| Fuel, reserve for | - $ 560. | |
| Lumber and hardware for operations | - $ 100. | |
| | $ 885. | |
| | | $ 885. |

d. Operating equipment:

| | | |
|---|---|---|
| CP No 55 Diamond Drill with accessories | - $3,575.80 | |
| Air pipe etc. | - $ 500. | |
| Compressor Rental | - $ 500. | |
| Chain saw | - $ 150. | |
| 4 Wheel drive pickup truck | - $2,000. | |
| Surveying Equipment (used) | - $ 200. | |
| | $6,925.80 | |
| | | $6,925.80 |

e. Rehabilitations and Repairs:

| | | |
|---|---|---|
| Roadwork, reserve for | - $ 100. | |
| | | $ 100. |

f. New Buildings improvements, installations:

| | | |
|---|---|---|
| 107 of laddering and winch track | - $ 180. | |
| | | $ 180. |

6. Estimate of Costs: (Cont)

g. Miscellaneous:

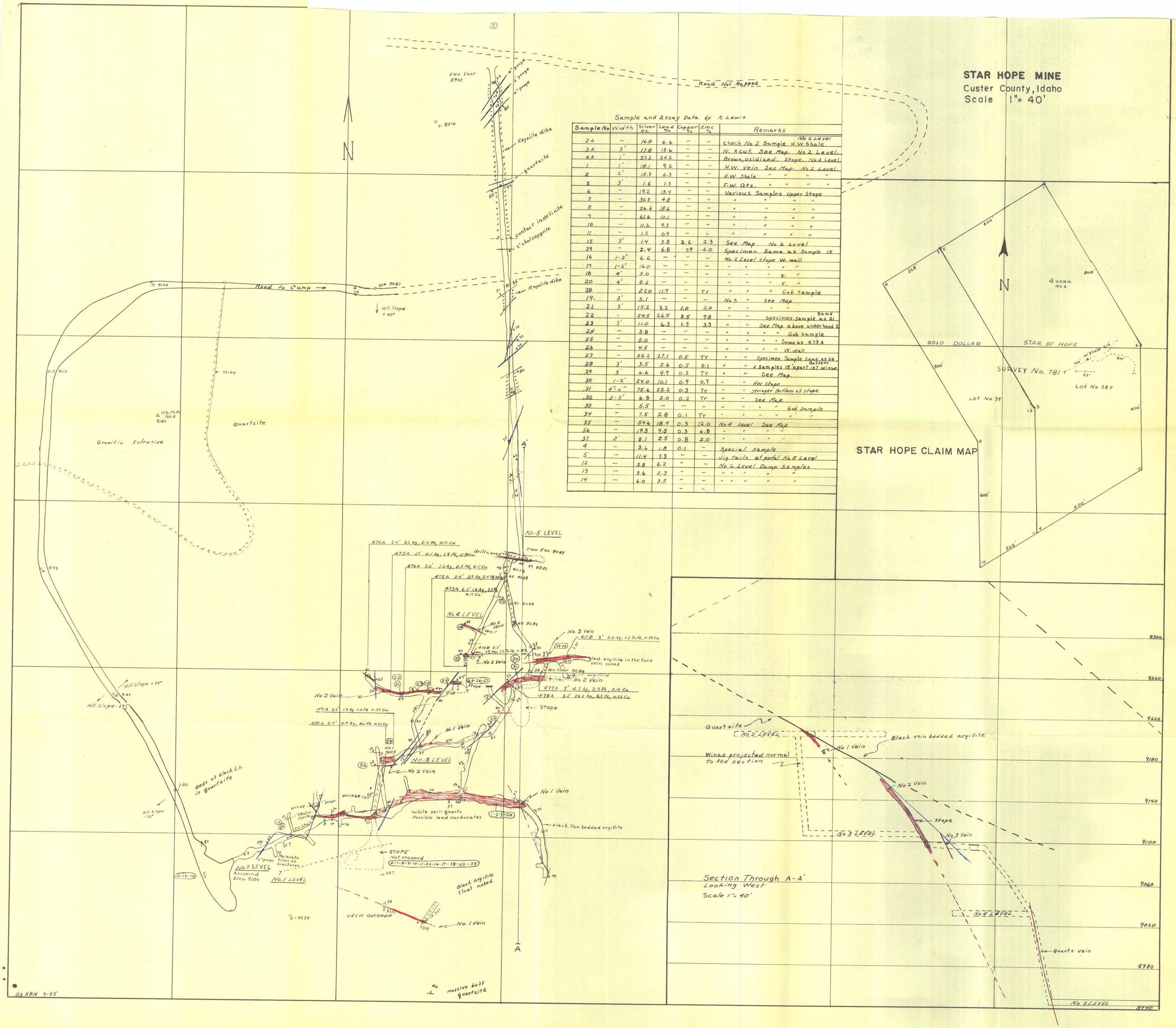
| | | | |
|---|---|---|---|
| Repairs to operating equipment, reserve for | - | $ 200. | |
| Rod loss, resetting bits etc. reserve for | - | $ 350. | |
| Assays, reserve for | - | $ 800. | |
| Accounting | - | $ 150. | |
| Workmens compensation and Employer's Liability Insurance (probably @ rates of 8.50% and 4.70%) | - | $ 277.20 | |
| Payroll taxes | | | |
| State 1.7% | - | $ 71.40 | |
| U. S. 2% | - | $ 84.00 | |
| | | $ 1,932.60 | |
| | | | $1,932.60 |
| | | | $17,223.40 |
| h. Contingencies 10% | | | $ 1,722.34 |
| TOTAL | | | $18,845.74 |

Mr. George C. Selfridge
Chairman, Operating Committee
Defense Minerals Explor. Admin.
Department of the Interior
Washington 25, D. C.

# STAR HOPE MINE

Custer County, Idaho

Scale 1" = 40'

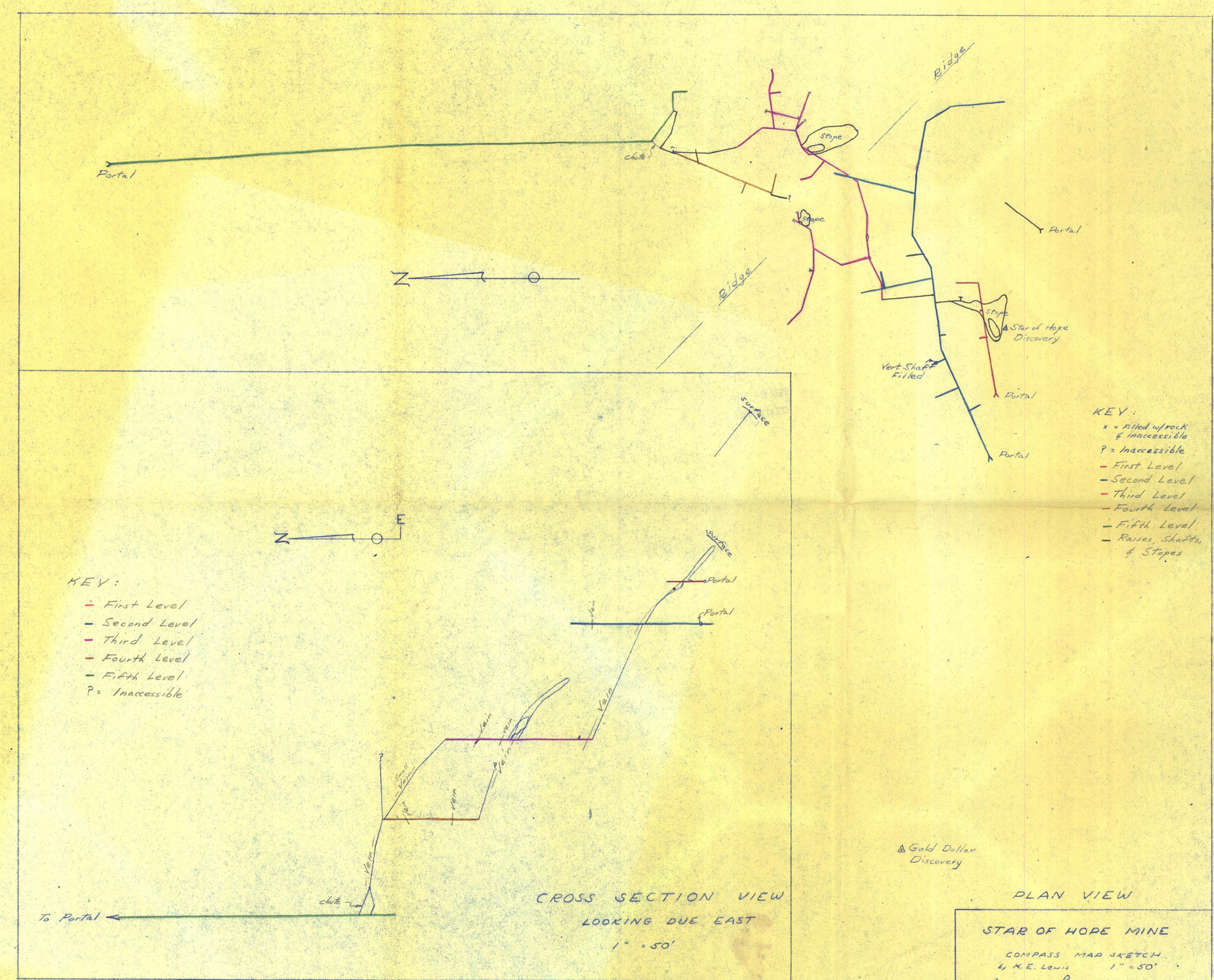



Sample and Assay Data by K. Lewis

| Sample No | Width | Silver Oz | Lead % | Copper % | Zinc % | Remarks |
|---|---|---|---|---|---|---|
| 2A | – | 16.8 | 6.6 | – | – | No 2 Level check No 2 Sample H.W Shale |
| 3A | 3' | 17.8 | 13.6 | – | – | N. X cut. See Map. No 2 Level. |
| 4A | 1' | 37.2 | 24.2 | – | – | Brown, oxidized. Stope. No 2 Level. |
| 1 | 1' | 18.1 | 9.2 | – | – | H.W. Vein See Map. No 2 Level. |
| 2 | 2' | 15.3 | 6.3 | – | – | H.W Shale " " " " |
| 3 | 3' | 1.6 | 1.3 | – | – | F.W. Qtz. " " " " |
| 6 | – | 19.2 | 13.4 | – | – | Various Samples Upper Stope |
| 7 | – | 30.3 | 4.8 | – | – | " " " " |
| 8 | – | 26.6 | 18.6 | – | – | " " " " |
| 9 | – | 61.6 | 10.1 | – | – | " " " " |
| 10 | – | 11.2 | 9.3 | – | – | " " " " |
| 11 | – | 1.2 | 0.9 | – | – | " " " " |
| 15 | 3' | 1.4 | 3.8 | 2.6 | 2.3 | See Map No 2 Level |
| 39 | – | 2.4 | 6.8 | 7.9 | 4.0 | Specimen Same as Sample 15 |
| 16 | 1-2' | 6.6 | – | – | – | No. 2 Level stope W. wall |
| 17 | 1-2' | 16.0 | – | – | – | " " " " " |
| 18 | 4' | 3.0 | – | – | – | " " " E. " |
| 20 | 4' | 2.2 | – | – | – | " " " E. " |
| 38 | – | 22.0 | 11.7 | – | Tr | " " " Gob Sample |
| 19 | 3' | 5.1 | – | – | – | No 3 " see Map |
| 21 | 3' | 15.2 | 8.2 | 1.0 | 2.0 | " " " " |
| 22 | – | 24.5 | 26.5 | 8.5 | 7.8 | " " Same specimen sample as 21 |
| 23 | 3' | 11.0 | 6.3 | 1.3 | 3.3 | " " See Map above under hand S |
| 24 | – | 3.8 | – | – | – | " " " " Gob sample |
| 25 | – | 5.0 | – | – | – | " " " Same as 473 A |
| 26 | – | 4.5 | – | – | – | " " " " W. wall |
| 27 | – | 25.2 | 27.1 | 0.5 | Tr | " " Specimen Sample Same as 24 |
| 28 | 3' | 3.5 | 2.6 | 0.5 | 0.1 | " " 2 Samples 15' apart Bottom 107 winze |
| 29 | 3' | 6.6 | 4.7 | 0.2 | Tr. | " " See Map |
| 30 | 1-2' | 24.0 | 10.1 | 0.9 | 0.7 | " " HW Stope |
| 31 | 4"-6" | 75.6 | 25.2 | 0.3 | Tr | " " Stringer Bottom of Stope. |
| 32 | 2-3' | 6.8 | 2.0 | 0.2 | Tr | " " See Map |
| 33 | – | 5.5 | – | – | – | " " " " Gob Sample |
| 34 | – | 7.5 | 2.8 | 0.1 | Tr | " " " " " " |
| 35 | – | 54.6 | 18.4 | 0.3 | 12.0 | No 4 Level See Map |
| 36 | – | 18.3 | 9.5 | 0.3 | 6.8 | " " " " |
| 37 | 2' | 8.1 | 2.5 | 0.8 | 2.0 | " " " " |
| 4 | – | 3.6 | 1.8 | 0.1 | – | Special sample |
| 5 | – | 11.4 | 7.3 | – | – | Jig Tails at portal No 5 Level |
| 12 | – | 5.8 | 6.2 | – | – | No 2 Level Dump Samples |
| 13 | – | 3.6 | 2.3 | – | – | " " " " " |
| 14 | – | 6.0 | 3.5 | – | – | " " " " " |
| | | | | – | – | |

Section Through A-A'
Looking West
Scale 1" = 40'

By HBN 9-55




CROSS SECTION VIEW
LOOKING DUE EAST
1" = 50'

PLAN VIEW

STAR OF HOPE MINE

COMPASS MAP SKETCH
by M.E. Lewis 1" = 50'

Donald W. Lewis
2548 Washington
Lemon Grove, California