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

MAY 23 1955

Mr. Louis Peura
1124 - 6th Avenue
Helena, Montana

Re: Docket No. DMEA-3581 (Copper-Lead-Zinc)
Louis Peura
Baltimore Mine
Jefferson County, Montana

Dear Mr. Peura:

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

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

Careful study of all our information, although noting a small amount of marginal ore on your lease, 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

JWAlt/er 5/18/55

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

R.C.B.

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

May 18, 1955

Memorandum

To: The Administrator

From: Chief, Base Metals Division

Subject: Denial of Application, Docket No. DMEA-3581 (Copper-Lead-Zinc), Louis Peura, Baltimore Mine, Jefferson County, Montana

This cited application, dated November 13, 1954, was received by this office on November 29, 1954. It was forwarded by the Executive Officer, Region I, Northwest District, and it was stated that Mr. R. A. Weeks, Geological Survey, had examined surface exposures of the property this summer, they would not schedule a field examination, and that a report would be prepared soon on the feasibility of the project.

The Applicant proposed to rehabilitate a building, timbering and clearing out of about 800 feet of the Hope adit, and raising about 183 feet from the Hope adit and 150 feet of drifts from raises. Total estimated cost $19,522.00.

The Field Team report, dated April 22, was received by this office on May 9.

After careful study of this material and the numerous sections and maps which accompany the application, the Field Team concurs with Mr. Weeks' recommendation for a denial. They state:

> "In the first place, the proposed work as described in the application and shown on the sections would appear to be development rather than exploration. Furthermore the Field Team feels that after studying the memorandum, and especially the quotations from Taylor's report, the work actually has little chance of success; the Hope tunnel is described as 'a strong vein with small spots of copper ore . . . (and) these spots are not continuous, and there is no indication of any streak which might lead to ore bodies above.'
>
> " The deposit, as shown on the maps and sections, is badly cut up by complicated fault systems and the best part of the deposit has been mined out. This deposit is not far from the Comet mine, where it was proved that the lead-zinc-silver ore changed to low grade pyritic ore at depth, and the available information indicates that the same thing happens at the Baltimore property."

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

W. R. Griswold

JWAlt/er

Copy to: Docket
Base Metals
Chron.

File Copy
Surname
J. Alt.
Griswold

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JWAlt/er

Copy to: Docket
Base Metals
Chron.

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

May 18, 1955

Re: DMEA-3581
Louis Puera
Baltimore Mine
Jefferson County, Mont.

Memorandum

To: W. R. Griswold, DMEA

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

Subject: Recommendation that subject application be denied

The Baltimore mine from 1903 through 1945 is reported to have produced 22,800 tons of ore yielding 1,729 ounces of gold, 273,642 ounces of silver, 130 tons of copper, 630 tons of lead and 140 tons of zinc, amounts which would give a net smelter return of about $16 per ton at present.

The mine was leased by Mr. Louis Puera, December 31, 1953 who has made application for DMEA assistance in rehabilitating 800 feet of the Hope adit, and the driving of a 183-foot raise with 150 feet of subdrifts from the raise to develop ore believed to lie between the Hope adit level and the 400-foot level.

The field team in reviewing the application concluded that the proposed work, if successful in discovering and developing ore of expected grade, would only block out 4,500 tons worth about $85,000 at the smelter. It is stated that the net recovery would be inadequate to pay mining costs, royalties and exploration costs.

Although no breakdown of the probable mining cost is given and I am uncertain as to the reasonableness of the assumption of a 5-foot ore width, I agree that the target area might more properly be the subject of development than exploration, and in any case is too limited an area to be of significance. The lack of economic mineralization on the Hope adit level and the similarity of the mineralization in the Baltimore mine to that in the nearby Comet mine further suggests the improbability of a worthwhile ore discovery.

I concur in denying the application.

O. M. Bishop

O. M. Bishop

Copy to: Div. of Minerals
O. M. Bishop
Mr. Kiilsgaard, Rm. 5224
Files

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

May 18, 1955

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Jefferson County, Mont.

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Mr. Kiilsgaard, Rm. 5224
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IN REPLY REFER TO:

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

May 9, 1955

Re: DMEA-3581
Louis Peura
The Baltimore Mine
Jefferson Co., Mont.
$19,522
Copper, Lead, Zinc,
Silver

Memorandum

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

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

Subject: Review of Field Report

It is to be hoped the recommended denial of this application is based on much more and better information concerning the property than that supplied by the report, conflicting plans, and the sections of the application.

The mine probably was operating when Paul Billingsley saw it in 1916 and more workings open than since. He believed the widest part of the ore body pitched to the east and was cut off by the North Fault. The reports do not indicate that a serious attempt has been made to find this faulted section and the work proposed in the application concerns itself with the scattered strands of the faulted section below the Stope Fault.

No substantial operation is likely for this complex and faulted set of ore bodies but with better maps, and additional sections the applicant should better his chances of finding ore. Some short drill holes could help especially if No. 4 level is open.

The conclusions of the Field Team as to the particular work proposed are sound and I concur with the denial recommendation.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

May 9, 1955

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N. E. Nelson

NENelson:hlm
G-5/9/55

N. E. Nelson

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
M. E. Volin, 3619 Interior

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

So. 157 Howard Street
Spokane 4, Washington

Department of the Interior
Defense Minerals Administration
RECEIVED
MAY 2 - 1955

April 28, 1955

Gel
Betty

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

Re: Docket No. DMEA-3581 (lead-zinc-copper)
Louis Puera
Baltimore Mine
Jefferson County, Montana

Dear Mr. Selfridge:

Enclosed are four copies of a memorandum by Robert A. Weeks, geologist, Geological Survey, appraising the above-cited application. The memorandum quotes considerable material from two confidential reports by Paul Billingsley and A. V. Taylor, which were obtained from the Anaconda Copper Mining Company.

After careful study of this material and the numerous sections and maps which accompany the application, the Field Team concurs with Mr. Weeks' recommendation for a denial. In the first place, the proposed work as described in the application and shown on the sections would appear to be development rather than exploration. Furthermore, the Field Team feels that after studying the memorandum, and especially the quotations from Taylor's report, the work actually has little chance of success; the vein in the Hope tunnel is described as "a strong vein with small spots of copper ore . . . (and) these spots are not continuous, and there is no indication of any streak which might lead to the ore bodies above."

The deposit, as shown on the maps and sections, is badly cut up by complicated fault systems and the best part of the deposit has been mined out. Later leasing operations have removed even the marginal edges of the ore body; moreover, although the memorandum mentions later mining at and above the 5 level, no maps are presented showing the geology and shapes of the ore shoots from which an estimate could be made regarding possible extensions on strike. This deposit is not far from the Comet mine, where it was proved that the lead-zinc-silver ore changed to low-grade pyritic ore at depth, and the available information indicates that the same thing happens at the Baltimore property.

Reviewed by
DMEA OPERATING COMMITTEE
5-6-55
(date)

Therefore, the Field Team recommends that this application be denied.

By Field Team, Region I, NW District

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

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

Enclosure

cc: USBM (2)
Weeks

Dmea

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 2 - 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

April 22, 1955

MEMORANDUM

To: DMEA Field Team, Region I, NW District

From: Robert A. Weeks, Geologist, U. S. Geological Survey

Subject: Docket No. DMEA-3581 (lead-zinc-copper), Recommendation of Denial, Louis Puera, Baltimore Mine, Jefferson County, Montana.

Mr. Louis Puera contacted me while I was headquartering in Montana during the past field season and discussed the possibility of making application for an exploration program. I accompanied him on two different days, one in August and one in October (1954) to see the accessible parts of the Baltimore mine. In the meantime he had furnished me with a set of geologic maps of the mine, and we had discussed the potential exploration program. His proposed work is based on suggestions made by his stepfather, now deceased, who formerly leased the mine, and by other former lessees, together with studies of the geologic maps.

After I had visited the property, I gained access to geologic reports on the Baltimore mine in the files of the Anaconda Copper Mining Company. The pertinent portions of these reports are herewith summarized. Incidentally, the maps furnished by the applicant are copies of the maps accompanying the ACMC reports, but to the best of my knowledge, the applicant does not have copies of the reports, and it is the request of the ACMC that we not give out the information contained in these reports.

Summary of ACMC reports

The first report was prepared by Paul Billingsley in January 1916. He describes the Baltimore ore body as a fissure zone trending slightly north of east. The fissure zone is widened by replacement and is spatially associated with the aplite phase of the Boulder batholith. The vein tends to branch into horsetails at its east end; it is cut by a vertical rhyolite dike; and it is also displaced on strong northeast-trending southeast-dipping faults.

Reviewed by
DMEA OPERATING COMMITTEE
5-6-55
(date)

He describes the development at that time on the west end of the ore deposit as exposed by Tunnels No. 1, 2, and 3; a large block of the vein is cut off on both ends by large faults of the northeast set, and the vein has not been discovered west of the west fault. On the east end, at that time, the rhyolite dike and the faults accompanying it were the limit of exploration. The vein was at its best immediately west of the dike, but structurally complex, as the good sulfide ore down in Tunnels No. 5 and 6 is faulted below the No. 5 level by another northeasterly, south-dipping fault, beneath which the vein, while shown in a few workings, had not been recognized or explored. On the No. 4 level the "horsetail" structure of the vein together with the pitch of the ore shoot to the east had prevented the recognition and development of the vein.

The developed portions of the Baltimore vein at that time were restricted to the block of ore between the "Middle" and "West" faults as worked from Tunnels No. 1, 2, and 3, and the block of ore just west of the rhyolite dike, cut off below by the "Stope" fault and terminated to the west by the hillside. Tunnels No. 5 and 6 develop this block, and by means of raises from Tunnel No. 4, the block has been stoped above its intersection with the "Stope" fault. Tunnel No. 4 was driven to cut the vein at depth, but the "horsetail" structure, the displacement on the "Stope" fault, and the eastward pitch of the ore shoot had not previously been recognized.

At the time, Billingsley concluded that ore in sight was limited to the unworked portions of the two ore blocks described, and the ore in the western block was nearly all extracted. The situation in the east block was different. The ore was stated to be a mixture of sphalerite, galena, pyrite, arsenopyrite, and chalcopyrite carrying silver and gold. The sulfides were intimately mixed so that except for isolated occurrences, it had been impossible to sort out a lead-silver ore sufficiently free of zinc to repay shipment. As a result large pillars of ore had been left, and the gob was composed largely of rejected zinc.

Describing the vein in the east ore block, Billingsley stated: "In Tunnels No. 5 and 6, and in the connecting stopes, the vein is about 50 feet wide, composed of quartz and mineralized aplite, with bands of heavy sulfide. Three of these bands, called on the accompanying maps the Hanging Wall, Middle, and Footwall branches, have been partly stoped. The openings are irregular, crossing from one strand to another the vein, and frequently including in local widenings two or all of the branches. The long sections given show approximately the area of each that has been removed, rather than the exact form of the stopes."

He sampled each branch at as many places as could be reached, and the averages are presented herewith:

Footwall branch, average of five samples:

48 inches, 3.8% Pb, 11.0 oz. Ag, 0.075 oz. Au, 1.5% Cu, 11.1% Zn

Middle branch, average of three samples:

61 inches, 1.4% Pb, 10.6 oz. Ag, 0.066 oz. Au, 10.2% Zn

Hanging Wall branch, average of two samples:

72 inches, 2.8% Pb, 17.2 oz. Ag, 0.065 oz. Au., 8.9% Zn

He further sampled the vein in two places below the "Stope" fault; these averaged:

45 inches, 3.7% Pb, 9.4 oz. Ag, 0.125 oz. Au, 12.6% Zn

An average of the gob in the stopes ran:

4.28% Pb 10.8 oz. Ag 0.09 oz. Au 1.2% Cu 11.8% Zn

He calculated that on the eastern block in the three branches there had been a total of 12,000 tons of ore, of which 4,750 tons remained in pillars, stope gob, and selvage, plus 1,000 tons for the vein below the "Stope" fault.

He concluded that the irregular pillar of ore did not provide sufficient tonnage to assure long operation but that the property had to be considered as a prospect rather than a developed mine. He recommends exploration and development to test the property as follows:

"1. Drift northeast on footwall vein in Tunnel 4 and crosscut to explore all branches -- 100 feet of drift and 100 feet of crosscut.

"2. On No. 5 tunnel crosscut north 75 feet from east end of main stope and explore to east for continuation of the vein -- total 200 feet of work.

"3. Crosscut N. 50° E. from breast of No. 2 tunnel to find portion of vein between Middle Fault and No. 4 tunnel -- total 100 feet of work."

The second report was written by A. V. Taylor, Jr., in April 1930 and covered only the changes since Billingsley's report. Some of the work recommended by Billingsley was done, but no clear cut statement of results of exploration is given.

He summarized the situation by saying: "The vein is a fissure vein, striking northeast dipping nearly vertically. Extensive faulting complicates mining operations and the future of the mine depends largely on the recovery of these faulted blocks." Also, he noted that: "The Baltimore vein consists of a zone of aplitic quartz, from 5 to 80 feet wide, within which later fracturing has taken place. [These fractures] * * * have been filled by lenses and bands of later quartz and sulfides - mainly pyrite, galena, and sphalerite on the 4 level and above, and pyrite and chalcopyrite with secondary chalcocite in the Hope tunnel." This leads to difficulty in prospecting as the ore shoots pinch out within the vein, and exploration across the entire vein at rather frequent intervals is necessary to be sure that all of the ore has been recovered.

There has been no new work on the No. 1, 2, and 3 tunnels since 1916, and Taylor believed that portion of the mine to be worked out. The work done since 1916 was on the No. 5, No. 4, and Hope tunnels. A 175-foot drift on the No. 4 had been driven southwest on the Footwall branch, and ore mined to the New tunnel, above which the ore had been stoped prior to 1916. "The Middle branch had all of its profitable ore extracted during the period, and the southwesterly portion of the Hanging Wall branch was worked out to a point 30 feet below the No. 4 tunnel, the 'Stope' fault here becoming almost a dip fault with little or no displacement. The northeasterly portion of the Hanging Wall branch was cut off by the 'Stope' fault between the 4 and 5 levels, and the ore was not recovered below. The stope in this portion was the largest in the mine and is known as the Black Stope. All three of Billingsley's long sections we now have included within this stope on the new Hanging Wall section. All the ore remaining around this stope was one 3-foot lens. All the profitable ore has been extracted from the known ore shoots above the 4 level, except the faulted portion of the ore below the Black Stope near the North fault. An attempt was made to recover this ore by driving a short drift northeast from the 4 level, but all indications point to this drift lying just west of the downward extension of the ore shoot. This drift was stopped when the strong North fault was encountered, and notwithstanding the fact that the widest ore body in the mine was cut off above and below the 5 level by this fault, there has been no exploration to recover the vein beyond the fault."

The Hope tunnel, approximately 900 feet long, is 182 feet below the No. 4 level and represents an attempt to develop the known ore bodies at still greater depth. This level is now partly caved, but according to Taylor, in this tunnel the vein is mineralized by pyrite with small amounts of chalcopyrite and secondary chalcocite instead of galena and sphalerite, and the ore occurrences are discontinuous.

Taylor lists production from January 1916 to 1931 as approximately 8,470 tons, averaging roughly $5.00 to $10.00 per ton net smelter returns.

Taylor's recommendations:

"Summary. All of the profitable ore in the southwest section of the mine has been mined. The short, undeveloped segment of the vein lying between the southwest section and the east section shows little promise as the extreme southwesterly development from Nos. 4 and 5 tunnels exposes only a lean quartz vein, rapidly narrowing. With the exception noted above, and a few spots indicated by samples, all the ore has been mined above the 400' level in the east section.

"The Hope Tunnel development, while showing a strong vein with small spots of copper ore, also discloses the fact that these spots are not continuous, and there is no indication of any streak which might lead to the ore bodies above. Consequently, the necessary expenditure for raising and intermediate crosscutting in the 182-foot gap to the 400' level is too great at the present time, and would only be warranted by development of new ore bodies on the 400' level thus adding to possible tonnage below as well as financing the lower development.

"Thus, whatever inducement there is for future expenditure must lie in development of new ore bodies or recovery of faulted extensions of the present ore bodies. Viewed in this light, the Baltimore mine has some attractive aspects.

"1. Billingsley's cross section shows two samples taken below the Stope Fault, apparently within the yet unstoped area below the Black Stope. These samples show a 7.5-foot width averaging 3.7% Pb, 9.4 oz. Ag, 0.12 oz. Au and 12.6% Zn.

"This ore at present metal prices of 5.75¢/lb Pb, 42¢/oz Ag, $20.00/oz Au, 4.75¢/lb Zn and 18¢/lb Cu, will net the operator approximately $4.00 per ton profit after mining, transportation and treatment charges. A side sample on the bottom of the north drift below this point assayed 1.3% Cu, 20.4 oz/Ag and 0.030 oz/Au.

"This ore will net approximately $1.50 per ton net profit. Assuming a length equal to that above the fault, 50 feet, there is a possibility of recovering 1,875 tons of ore with a possible profit of $1.50 to $4.00 per ton or net value of $2,200 to $7,500.

"As only 20 feet of crosscutting and 50 feet of raising are required to develop this block, the following work is recommended:

"Recommendation #1: (See plan No. 4 Tunnel) Crosscut S. 60 E. from the north drift on the 400' level at a point 50 feet northeast of the main tunnel. Raise to fault if ore is found.

"2. An inspection of the long section of the Hanging Wall vein shows that for a height of approximately 100 feet on down to the cutoff by the Stope Fault, the northeast end of the Black Stope has been terminated by a strong fault called the North Fault. The total stoped width where cut off is between 25 and 35 feet and, if ore is found by first recommendation, a still greater height will be added. Furthermore, large pieces of drag ore were reported to have been encountered in the fault zone when cut on the 400' level. Notwithstanding this cutoff of the largest ore body in the mine, there has been no serious attempt to recover the faulted extension north of the North Fault. The writer believes this prospecting fully warranted, as follows:

"Recommendation #2: (See plan map No. 4 Tunnel). Continue the North Drift on the 400' level until through the North Fault. Then crosscut N. 65 W. Amount of work--Not more than 70 feet of crosscut.

"Due to no work having been done on the north side of this fault, the direction of throw is uncertain. Deep snow at the time of this examination prohibited a study of the surface, which should be made.

"If no ore is recovered by the above recommendations, further prospecting would not be justified. If sufficient ore is discovered to pay for additional work, the following work is suggested:

"Recommendation #3: (See plan map of Hope Tunnel). Crosscut S. 40 E. from the Hope Tunnel at the point where sample shows 4.7% Cu. Raise on best looking streak in the vein thus exposed above the flat fault.

"Object: To explore the vein below the stoped areas on the Hanging wall and Footwall veins. Amount of work--40 feet of crosscut, 150 feet of raise.

"Recommendation #4: Investigate further by sampling, and development of any streaks which show appreciable values. The following are examples: A) Clean out and sample the bottom of the drift on the 90' level, and if values comparable to the assay as shown, underhaul stope the ore to the rhyolite cutoff.

"B) If metal prices rise, drift on 1.5-foot streak exposed in the southwest drift on the 400' level. This streak, which assays 6.1% Pb and 8.0 oz./Ag is not shipping ore at present, but is just under required value.

"C) Sample more thoroughly the streak of ore exposed near the hanging wall of Black Stope on 500' level, which assays 5.7% Cu at one exposure. If values are continuous, drift southward on the vein.

"D) Drift NE and SW on the vein exposed above the flat fault in the Hope Tunnel, especially if Rec. #3 shows any promising streaks."

Further history

Sporadic mining activity in the Baltimore mine since 1930 has picked up selvage ore around the Black Stope and elsewhere. One lessee is reported to have recovered about 500 tons from one faulted segment near the Black Stope. The exact shape of the Black Stope is unknown, but it is only slightly larger than when seen by Taylor. Puera, the applicant, has extracted several hundred tons of ore material from above the No. 5 level by surface mining and short adits. Most of the material has been shipped as smelter flux to the East Helena smelter. Its high silica content places it as very desirable fluxing material. The extent of this work is not shown on the maps but is not relevant to the proposed exploration.

Geologic conclusions

The Baltimore vein consists of a wide silicified zone that has been fractured and some of the fractures filled with later quartz and sulfide minerals. According to the two geological reports prepared by competent geologists, the vein has been offset by a northeast-trending fault, and unrecovered portions of the vein remain. Puera's proposed program appears to be geologically well conceived and would explore the vein at a point believed by Taylor to be the faulted portion of the vein at one of its favorable locations. It essentially is Recommendation No. 3 of Taylor's report. The past history of this mine indicates the ore bodies are offset by numerous faults, and suspected faulted portions of ore bodies are logical exploration targets. The exploration program is designed to raise in a known-mineralized structure, beyond the Middle fault in a portion of the mine where the structure is believed to carry ore. It is known to carry ore above the No. 4 level and especially above the Stope fault.

The purpose of crosscutting from the raise is quite evident. In a wide shear zone known to have three or more branches, each of which may be ore bearing, it is desirable to crosscut the entire structure.

The tenor of ore material apt to be encountered is difficult to predict. From the smelter sheets submitted by the applicant, 1,080 tons of ore averaged 0.16 ounce of gold per ton, 18.8 ounces of silver

per ton, 7.6 percent lead, and the available returns for zinc and copper on a part of these shipments averaged 7.5 percent and 1.1 percent, respectively. Perhaps a more realistic average can be obtained from Billingsley's samples in that the production figures include much near-surface and oxidized material, where the samples represent sulfide ore more nearly like the expected ore.

The tenor of the material mined is known to have varied widely from different parts of the mine. The near-surface material is reportedly enriched in gold and depleted in other metals. A zone of secondary copper is reported, but its extent is unknown, and a change in primary sulfides from top to bottom is reported, with galena-sphalerite rich portions near the top changing to pyrite-chalcopyrite at depth.

Billingsley's sample shows an average tenor of 2.8 percent lead, 10.5 percent zinc, 12.9 ounces silver, 0.079 ounce gold, and 1.35 percent copper (total width of the three splits sampled was 15 feet, but an average of 5 feet is assumed for further calculation). If a 5-foot width of ore is found over half the raise length and the ore has a strike length of 100 feet, a block of ore 5 by 90 by 100 feet containing about 4,500 tons of ore would be developed. At the value of $19.00 (present smelter schedule at East Helena) this would be worth about $85,000.00 net smelter. This amount would not cover payment of mining costs, royalties, and repayment of exploration costs. On the basis of present smelter schedules ore of this grade is worth about $19.00 per ton.

Summary

Approval of the proposed exploration program is not recommended. While the geologic feasibility of recovering the faulted portion of the ore body is good, the economic return from the probable ore is predicted to be less than the cost of exploration and extraction. The applicant has put in a well-conceived program on the basis of information he had at hand, but in view of the probable low grade of ore to be encountered and the expected small amount of ore that might be recovered, the target is not believed to justify the expenditure.

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

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 2 - 1955

April 28, 1955

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

Re: Docket No. DMEA-3581 (lead-zinc-copper)
Louis Puera
Baltimore Mine
Jefferson County, Montana

Dear Mr. Selfridge:

Enclosed are four copies of a memorandum by Robert A. Weeks, geologist, Geological Survey, appraising the above-cited application. The memorandum quotes considerable material from two confidential reports by Paul Billingsley and A. V. Taylor, which were obtained from the Anaconda Copper Mining Company.

After careful study of this material and the numerous sections and maps which accompany the application, the Field Team concurs with Mr. Weeks' recommendation for a denial. In the first place, the proposed work as described in the application and shown on the sections would appear to be development rather than exploration. Furthermore, the Field Team feels that after studying the memorandum, and especially the quotations from Taylor's report, the work actually has little chance of success; the vein in the Hope tunnel is described as "a strong vein with small spots of copper ore . . . (and) these spots are not continuous, and there is no indication of any streak which might lead to the ore bodies above."

The deposit, as shown on the maps and sections, is badly cut up by complicated fault systems and the best part of the deposit has been mined out. Later leasing operations have removed even the marginal edges of the ore body; moreover, although the memorandum mentions later mining at and above the 5 level, no maps are presented showing the geology and shapes of the ore shoots from which an estimate could be made regarding possible extensions on strike. This deposit is not far from the Comet mine, where it was proved that the lead-zinc-silver ore changed to low-grade pyritic ore at depth, and the available information indicates that the same thing happens at the Baltimore property.

Therefore, the Field Team recommends that this application be denied.

By Field Team, Region I, NW District

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

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

Enclosure

cc: USBM (2)
Weeks

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 2 - 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

April 22, 1955

MEMORANDUM

To: DMEA Field Team, Region I, NW District

From: Robert A. Weeks, Geologist, U. S. Geological Survey

Subject: Docket No. DMEA-3581 (lead-zinc-copper), Recommendation of Denial, Louis Puera, Baltimore Mine, Jefferson County, Montana.

Mr. Louis Puera contacted me while I was headquartering in Montana during the past field season and discussed the possibility of making application for an exploration program. I accompanied him on two different days, one in August and one in October (1954) to see the accessible parts of the Baltimore mine. In the meantime he had furnished me with a set of geologic maps of the mine, and we had discussed the potential exploration program. His proposed work is based on suggestions made by his stepfather, now deceased, who formerly leased the mine, and by other former lessees, together with studies of the geologic maps.

After I had visited the property, I gained access to geologic reports on the Baltimore mine in the files of the Anaconda Copper Mining Company. The pertinent portions of these reports are herewith summarized. Incidentally, the maps furnished by the applicant are copies of the maps accompanying the ACMC reports, but to the best of my knowledge, the applicant does not have copies of the reports, and it is the request of the ACMC that we not give out the information contained in these reports.

Summary of ACMC reports

The first report was prepared by Paul Billingsley in January 1916. He describes the Baltimore ore body as a fissure zone trending slightly north of east. The fissure zone is widened by replacement and is spatially associated with the aplite phase of the Boulder batholith. The vein tends to branch into horsetails at its east end; it is cut by a vertical rhyolite dike; and it is also displaced on strong northeast-trending southeast-dipping faults.

He describes the development at that time on the west end of the ore deposit as exposed by Tunnels No. 1, 2, and 3; a large block of the vein is cut off on both ends by large faults of the northeast set, and the vein has not been discovered west of the west fault. On the east end, at that time, the rhyolite dike and the faults accompanying it were the limit of exploration. The vein was at its best immediately west of the dike, but structurally complex, as the good sulfide ore down in Tunnels No. 5 and 6 is faulted below the No. 5 level by another northeasterly, south-dipping fault, beneath which the vein, while shown in a few workings, had not been recognized or explored. On the No. 4 level the "horsetail" structure of the vein together with the pitch of the ore shoot to the east had prevented the recognition and development of the vein.

The developed portions of the Baltimore vein at that time were restricted to the block of ore between the "Middle" and "West" faults as worked from Tunnels No. 1, 2, and 3, and the block of ore just west of the rhyolite dike, cut off below by the "Stope" fault and terminated to the west by the hillside. Tunnels No. 5 and 6 develop this block, and by means of raises from Tunnel No. 4, the block has been stoped above its intersection with the "Stope" fault. Tunnel No. 4 was driven to cut the vein at depth, but the "horsetail" structure, the displacement on the "Stope" fault, and the eastward pitch of the ore shoot had not previously been recognized.

At the time, Billingsley concluded that ore in sight was limited to the unworked portions of the two ore blocks described, and the ore in the western block was nearly all extracted. The situation in the east block was different. The ore was stated to be a mixture of sphalerite, galena, pyrite, arsenopyrite, and chalcopyrite carrying silver and gold. The sulfides were intimately mixed so that except for isolated occurrences, it had been impossible to sort out a lead-silver ore sufficiently free of zinc to repay shipment. As a result large pillars of ore had been left, and the gob was composed largely of rejected zinc.

Describing the vein in the east ore block, Billingsley stated: "In Tunnels No. 5 and 6, and in the connecting stopes, the vein is about 50 feet wide, composed of quartz and mineralized aplite, with bands of heavy sulfide. Three of these bands, called on the accompanying maps the Hanging Wall, Middle, and Footwall branches, have been partly stoped. The openings are irregular, crossing from one strand to another the vein, and frequently including in local widenings two or all of the branches. The long sections given show approximately the area of each that has been removed, rather than the exact form of the stopes."

He sampled each branch at as many places as could be reached, and the averages are presented herewith:

Footwall branch, average of five samples:

48 inches, 3.8% Pb, 11.0 oz. Ag, 0.075 oz. Au, 1.5% Cu, 11.1% Zn

Middle branch, average of three samples:

61 inches, 1.4% Pb, 10.6 oz. Ag, 0.066 oz. Au, 10.2% Zn

Hanging Wall branch, average of two samples:

72 inches, 2.8% Pb, 17.2 oz. Ag, 0.065 oz. Au., 8.9% Zn

He further sampled the vein in two places below the "Stope" fault; these averaged:

45 inches, 3.7% Pb, 9.4 oz. Ag, 0.125 oz. Au, 12.6% Zn

An average of the gob in the stopes ran:

4.28% Pb 10.8 oz. Ag 0.09 oz. Au 1.2% Cu 11.8% Zn

He calculated that on the eastern block in the three branches there had been a total of 12,000 tons of ore, of which 4,750 tons remained in pillars, stope gob, and selvage, plus 1,000 tons for the vein below the "Stope" fault.

He concluded that the irregular pillar of ore did not provide sufficient tonnage to assure long operation but that the property had to be considered as a prospect rather than a developed mine. He recommends exploration and development to test the property as follows:

"1. Drift northeast on footwall vein in Tunnel 4 and crosscut to explore all branches -- 100 feet of drift and 100 feet of crosscut.

"2. On No. 5 tunnel crosscut north 75 feet from east end of main stope and explore to east for continuation of the vein -- total 200 feet of work.

"3. Crosscut N. 50° E. from breast of No. 2 tunnel to find portion of vein between Middle Fault and No. 4 tunnel -- total 100 feet of work."

The second report was written by A. V. Taylor, Jr., in April 1930 and covered only the changes since Billingsley's report. Some of the work recommended by Billingsley was done, but no clear cut statement of results of exploration is given.

He summarized the situation by saying: "The vein is a fissure vein, striking northeast dipping nearly vertically. Extensive faulting complicates mining operations and the future of the mine depends largely on the recovery of these faulted blocks." Also, he noted that: "The Baltimore vein consists of a zone of aplitic quartz, from 5 to 80 feet wide, within which later fracturing has taken place. [These fractures] * * * have been filled by lenses and bands of later quartz and sulfides - mainly pyrite, galena, and sphalerite on the 4 level and above, and pyrite and chalcopyrite with secondary chalcocite in the Hope tunnel." This leads to difficulty in prospecting as the ore shoots pinch out within the vein, and exploration across the entire vein at rather frequent intervals is necessary to be sure that all of the ore has been recovered.

There has been no new work on the No. 1, 2, and 3 tunnels since 1916, and Taylor believed that portion of the mine to be worked out. The work done since 1916 was on the No. 5, No. 4, and Hope tunnels. A 175-foot drift on the No. 4 had been driven southwest on the Footwall branch, and ore mined to the New tunnel, above which the ore had been stoped prior to 1916. "The Middle branch had all of its profitable ore extracted during the period, and the southwesterly portion of the Hanging Wall branch was worked out to a point 30 feet below the No. 4 tunnel, the 'Stope' fault here becoming almost a dip fault with little or no displacement. The northeasterly portion of the Hanging Wall branch was cut off by the 'Stope' fault between the 4 and 5 levels, and the ore was not recovered below. The stope in this portion was the largest in the mine and is known as the Black Stope. All three of Billingsley's long sections we now have included within this stope on the new Hanging Wall section. All the ore remaining around this stope was one 3-foot lens. All the profitable ore has been extracted from the known ore shoots above the 4 level, except the faulted portion of the ore below the Black Stope near the North fault. An attempt was made to recover this ore by driving a short drift northeast from the 4 level, but all indications point to this drift lying just west of the downward extension of the ore shoot. This drift was stopped when the strong North fault was encountered, and notwithstanding the fact that the widest ore body in the mine was cut off above and below the 5 level by this fault, there has been no exploration to recover the vein beyond the fault."

The Hope tunnel, approximately 900 feet long, is 182 feet below the No. 4 level and represents an attempt to develop the known ore bodies at still greater depth. This level is now partly caved, but according to Taylor, in this tunnel the vein is mineralized by pyrite with small amounts of chalcopyrite and secondary chalcocite instead of galena and sphalerite, and the ore occurrences are discontinuous.

Taylor lists production from January 1916 to 1931 as approximately 8,470 tons, averaging roughly $5.00 to $10.00 per ton net smelter returns.

Taylor's recommendations:

"Summary. All of the profitable ore in the southwest section of the mine has been mined. The short, undeveloped segment of the vein lying between the southwest section and the east section shows little promise as the extreme southwesterly development from Nos. 4 and 5 tunnels exposes only a lean quartz vein, rapidly narrowing. With the exception noted above, and a few spots indicated by samples, all the ore has been mined above the 400' level in the east section.

"The Hope Tunnel development, while showing a strong vein with small spots of copper ore, also discloses the fact that these spots are not continuous, and there is no indication of any streak which might lead to the ore bodies above. Consequently, the necessary expenditure for raising and intermediate crosscutting in the 182-foot gap to the 400' level is too great at the present time, and would only be warranted by development of new ore bodies on the 400' level thus adding to possible tonnage below as well as financing the lower development.

"Thus, whatever inducement there is for future expenditure must lie in development of new ore bodies or recovery of faulted extensions of the present ore bodies. Viewed in this light, the Baltimore mine has some attractive aspects.

"1. Billingsley's cross section shows two samples taken below the Stope Fault, apparently within the yet unstoped area below the Black Stope. These samples show a 7.5-foot width averaging 3.7% Pb, 9.4 oz. Ag, 0.12 oz. Au and 12.6% Zn.

"This ore at present metal prices of 5.75¢/lb Pb, 42¢/oz Ag, $20.00/oz Au, 4.75¢/lb Zn and 18¢/lb Cu, will net the operator approximately $4.00 per ton profit after mining, transportation and treatment charges. A side sample on the bottom of the north drift below this point assayed 1.3% Cu, 20.4 oz/Ag and 0.030 oz/Au.

"This ore will net approximately $1.50 per ton net profit. Assuming a length equal to that above the fault, 50 feet, there is a possibility of recovering 1,875 tons of ore with a possible profit of $1.50 to $4.00 per ton or net value of $2,200 to $7,500.

"As only 20 feet of crosscutting and 50 feet of raising are required to develop this block, the following work is recommended:

"Recommendation #1: (See plan No. 4 Tunnel) Crosscut S. 60 E. from the north drift on the 400' level at a point 50 feet northeast of the main tunnel. Raise to fault if ore is found.

"2. An inspection of the long section of the Hanging Wall vein shows that for a height of approximately 100 feet on down to the cutoff by the Stope Fault, the northeast end of the Black Stope has been terminated by a strong fault called the North Fault. The total stoped width where cut off is between 25 and 35 feet and, if ore is found by first recommendation, a still greater height will be added. Furthermore, large pieces of drag ore were reported to have been encountered in the fault zone when cut on the 400' level. Notwithstanding this cutoff of the largest ore body in the mine, there has been no serious attempt to recover the faulted extension north of the North Fault. The writer believes this prospecting fully warranted, as follows:

"Recommendation #2: (See plan map No. 4 Tunnel). Continue the North Drift on the 400' level until through the North Fault. Then crosscut N. 65 W. Amount of work--Not more than 70 feet of crosscut.

"Due to no work having been done on the north side of this fault, the direction of throw is uncertain. Deep snow at the time of this examination prohibited a study of the surface, which should be made.

"If no ore is recovered by the above recommendations, further prospecting would not be justified. If sufficient ore is discovered to pay for additional work, the following work is suggested:

"Recommendation #3: (See plan map of Hope Tunnel). Crosscut S. 40 E. from the Hope Tunnel at the point where sample shows 4.7% Cu. Raise on best looking streak in the vein thus exposed above the flat fault.

"Object: To explore the vein below the stoped areas on the Hanging wall and Footwall veins. Amount of work--40 feet of crosscut, 150 feet of raise.

"Recommendation #4: Investigate further by sampling, and development of any streaks which show appreciable values. The following are examples: A) Clean out and sample the bottom of the drift on the 90' level, and if values comparable to the assay as shown, underhaul stope the ore to the rhyolite cutoff.

"B) If metal prices rise, drift on 1.5-foot streak exposed in the southwest drift on the 400' level. This streak, which assays 6.1% Pb and 8.0 oz./Ag is not shipping ore at present, but is just under required value.

"C) Sample more thoroughly the streak of ore exposed near the hanging wall of Black Stope on 500' level, which assays 5.7% Cu at one exposure. If values are continuous, drift southward on the vein.

"D) Drift NE and SW on the vein exposed above the flat fault in the Hope Tunnel, especially if Rec. #3 shows any promising streaks."

Further history

Sporadic mining activity in the Baltimore mine since 1930 has picked up selvage ore around the Black Stope and elsewhere. One lessee is reported to have recovered about 500 tons from one faulted segment near the Black Stope. The exact shape of the Black Stope is unknown, but it is only slightly larger than when seen by Taylor. Puera, the applicant, has extracted several hundred tons of ore material from above the No. 5 level by surface mining and short adits. Most of the material has been shipped as smelter flux to the East Helena smelter. Its high silica content places it as very desirable fluxing material. The extent of this work is not shown on the maps but is not relevant to the proposed exploration.

Geologic conclusions

The Baltimore vein consists of a wide silicified zone that has been fractured and some of the fractures filled with later quartz and sulfide minerals. According to the two geological reports prepared by competent geologists, the vein has been offset by a northeast-trending fault, and unrecovered portions of the vein remain. Puera's proposed program appears to be geologically well conceived and would explore the vein at a point believed by Taylor to be the faulted portion of the vein at one of its favorable locations. It essentially is Recommendation No. 3 of Taylor's report. The past history of this mine indicates the ore bodies are offset by numerous faults, and suspected faulted portions of ore bodies are logical exploration targets. The exploration program is designed to raise in a known-mineralized structure, beyond the Middle fault in a portion of the mine where the structure is believed to carry ore. It is known to carry ore above the No. 4 level and especially above the Stope fault.

The purpose of crosscutting from the raise is quite evident. In a wide shear zone known to have three or more branches, each of which may be ore bearing, it is desirable to crosscut the entire structure.

The tenor of ore material apt to be encountered is difficult to predict. From the smelter sheets submitted by the applicant, 1,080 tons of ore averaged 0.16 ounce of gold per ton, 18.8 ounces of silver

per ton, 7.6 percent lead, and the available returns for zinc and copper on a part of these shipments averaged 7.5 percent and 1.1 percent, respectively. Perhaps a more realistic average can be obtained from Billingsley's samples in that the production figures include much near-surface and oxidized material, where the samples represent sulfide ore more nearly like the expected ore.

The tenor of the material mined is known to have varied widely from different parts of the mine. The near-surface material is reportedly enriched in gold and depleted in other metals. A zone of secondary copper is reported, but its extent is unknown, and a change in primary sulfides from top to bottom is reported, with galena-sphalerite rich portions near the top changing to pyrite-chalcopyrite at depth.

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Summary

Approval of the proposed exploration program is not recommended. While the geologic feasibility of recovering the faulted portion of the ore body is good, the economic return from the probable ore is predicted to be less than the cost of exploration and extraction. The applicant has put in a well-conceived program on the basis of information he had at hand, but in view of the probable low grade of ore to be encountered and the expected small amount of ore that might be recovered, the target is not believed to justify the expenditure.

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USBM(2)
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Docket
Weeks

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

December 14, 1954

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

Re: Docket No. DMEA-3581 (lead-zinc-copper)
Louis Peura
Baltimore Mine
Jefferson County, Montana

Dear Mr. Selfridge:

Reference is made to our letter of November 19, 1954, forwarding the subject application to your office. The new Owner's Consent to Lien forms have been obtained and are enclosed.

Sincerely yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosure

cc: USBM (2)
Weeks

MF-203
(Revised July 1, 1954)

OWNER'S CONSENT TO LIEN

RECEIVED

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

The Baltimore, Survey Number 1540; the Skipper, #9690;
the Last Hope, #9689; the Minnie, #9689; the Mona, #9689.
All situated in Township 6 North, Range 4 West.

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/ Louis Peura, 1124-6th Avenue, Helena, Montana

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production 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.

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.

(OVER)

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 1st day of December, 1954.

THE BALTIMORE COPPER MINING CO. [SEAL]

By Frank Loos Vice Pres [SEAL]

By J J Fenlon Secretary-Treasurer [SEAL]

Address: The Baltimore Copper Mining Co.
J J Fenlon Secretary
516 N. 7th St Livingston Mont

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116 N. 7th St Livingston Mont

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WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

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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.

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.

(OVER)

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 1st day of December, 1954.

THE BALTIMORE COPPER MINING CO. [SEAL]

By Frank Loss Vice Pres [SEAL]

By J J Fenlon Secretary-Treasurer [SEAL]

Address: The Baltimore Copper Mining Co.
J J Fenlon Secretary
516 No 7th St Livingston Mont

MF-203
(Revised July 1, 1954)

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 Jefferson, described as follows:1/

The Baltimore, Survey Number 1540; the Skipper, #9690;
the Last Hope, #9689; the Minnie, #9689; the Mona, #9689.
All situated in Township 6 North, Range 4 West.

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/ Louis Peura, 1124-6th Avenue, Helena, Montana

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production 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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4. Changes and added provisions _____

_____

_____

_____

Dated this 1st day of December, 1954.

THE BALTIMORE COPPER MINING CO. [Seal]

By Frank Loos Vice Pres [Seal]

By J J Fenlon Secretary-Treasurer [Seal]

Address: The Baltimore Copper Mining Co.

J J Fenlon Secretary

516 N. 7th St Livingston Mont

MF-203
(Revised July 1, 1954)

OWNER'S CONSENT TO LIEN

Received
DEC 20 1954

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_____

_____

_____

Dated this 1st day of December, 1954.

THE BALTIMORE COPPER MINING CO. [Seal]

By Frank Loos Vice Pres [Seal]

By T J Fenlon Secretary-Treasurer [Seal]

Address: The Baltimore Copper Mining Co.

T J Fenlon Secretary

516 N 7th St Livingston Mont

Lessee's Monthly Transportation
Received
DEC 20 1954

MF-203
(Revised July 1, 1954)

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_____

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By Frank Loos Vice Pres [Seal]

By J J Fenlon Secretary-Treasurer [Seal]

Address: The Baltimore Copper Mining Co.
J J Fenlon Secretary
516 N. 7th St Livingston Mont

File Copy
Surname
J. W. Alt.
Original
Selfridge
Johnson
McKenzie

500

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

DEC - 2 1954

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

Re: Docket No. DMEA-3581 (Copper-Lead-Zinc)
Louis Peura
The Baltimore Mine
Jefferson County, Montana

Dear Mr. Weissenborn:

This will acknowledge receipt of your letter of November 19, 1954, in which you state that a report of the cited application will be prepared soon on the feasibility of the project.

We will hold this application in abeyance until the Field Team report is received.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (JHB)

APPROVED:

J. H. Hedges (JHB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JHB)
Member, Geological Survey

~~WRRx~~ JWAlt/bjl (11/30/54)

Copy to: Docket
Admr. R. File
Op. Committee
Base Metals
Mr. C. H. Johnson
Mr. Kiilsgaard
Chron.

R.S.S.

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 1 1954

ok Bishop

December 1, 1954

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, USBM

Subject: Docket No. DMEA-3581 (lead-zinc-copper) Louis Peura, Baltimore Mine, Jefferson County, Montana

I have received the above-named application, dated November 13, 1954, and transmitted by the Field Team November 19. The letter of transmittal states that a field team report based on information at hand will be prepared, without waiting for a request from the Washington Office. I will therefore retain the copy of the application for the time being.

O. M. Bishop

O. M. Bishop

Copy to: Minerals Division
Edward L. Newcomb, Room 5227
O. M. Bishop
Files

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC - 1 1954

December 1, 1954

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From: O. M. Bishop, USBM

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 1 1954

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC - 1 1954

December 1, 1954

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From: O. M. Bishop, USBM

Subject: Docket No. DMEA-3581 (lead-zinc-copper) Louis Peura, Baltimore Mine, Jefferson County, Montana

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Edward L. Newcomb, Room 5227
O. M. Bishop
Files

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

November 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 - 3581 Louis Peura

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

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

November 29, 1954
Subject: DMEA-3581
Re: Exploration Assistance
The Baltimore Mine

Mr. Louis Peura
1124 6th Ave.
Helena, Montana

Dear Sir:

The receipt of your application dated November 13, 1954 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3581 and referred to the Base Metals Division.

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

60932

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

November 19, 1954

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

Re: DMEA application (lead-zinc-copper)
Louis Peura
The Baltimore Mine
Jefferson County, Montana

Dear Mr. Selfridge:

Enclosed are 3 copies of an application by Mr. Louis Peura, 1124-6th Avenue, Helena, Montana. The 4th copy is being retained. Mr. Peura has submitted an obsolete MF-203 and we have requested that he submit new forms. The applicant has included complete geologic maps of the mine.

Mr. R. A. Weeks, Geological Survey, examined surface exposures at this property this summer. As proposed project work is to be from a presently caved adit on a structure that has been already examined by Mr. Weeks in higher accessible levels no field examination will be scheduled.

A report will be prepared soon on the feasibility of the project.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosure
cc: USBM (2)
Weeks

xxxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

November 19, 1954

Mr. Louis Peura
1124-6th Avenue
Helena, Montana

Dear Mr. Peura:

We wish to acknowledge receipt of your application for an exploration project; it has been forwarded to Washington. We note that you have inadvertently used an obsolete Owner's Consent to Lien form (MF-203, Revised July 1, 1953).

We are sorry for the inconvenience, but it will be necessary for you to obtain the signatures of authorized officials of the Baltimore Copper Mining Co. on the new form MF-203 (Revised July 1, 1954). Seven copies are enclosed for this purpose. Please return 6 to this office as soon as possible.

Also, please furnish us with the full address of the Baltimore Mining Co. Is it just Livingston, Montana?

Sincerely yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosure

cc: DMEA (2)
USBM (2)
Weeks

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
NOV 16 1954
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. 3581
Metal or Mineral Cu., Lead, & Zinc
Date Received
Estimated Cost $19,522
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: Mr. Louis Peura 1124-6th Avenue, Helena, Montana

(*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 THE BALTIMORE, SURVEY NUMBER 1540 THE SKIPPER #9690 THE LAST HOPE #9689 THE MINNIE #9689 THE MONA, #9689 All situated in Township 6 North, Range 4 West.

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

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise I have a ten year lease and option.

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

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

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

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

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

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

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

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

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore COPPER AND 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 30 days and be completed within 18 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)?

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

☒ Money ☒ Use of equipment owned by you ☒ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated November 13, 1954

LOUIS PEURA
(Applicant)

By Louis Peura

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

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 JEFFERSON, described as follows:1/

THE BALTIMORE, SURVEY NUMBER 1540 THE SKIPPER #9690
THE LAST HOPE #9689 THE MINNIE #9689 THE MONA,
#9689 All situated in Township 6 North, Range 4 West.

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/ Louis Peura, 1124-6th Avenue, Helena, Montana

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

Were added during requested Exp. Pg. II.

Dated this 1st day of July, 1954.

Baltimore Copper Mining Co [Seal]
By Frank Loos Vice Pres [Seal]
By J. Fenlon Sec-Treas [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.

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 JEFFERSON, described as follows:1/

THE BALTIMORE, SURVEY NUMBER 1540 THE SKIPPER #9690 THE LAST HOPE #9689 THE HUNTER, #9689 THE MONA, #9689 All situated in Township 6 North, Range 4 West.

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/ Louis Poura, 1124-6th Avenue, Helena, Montana

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 1st day of July, 1954.

The Baltimore Copper Mining Co [Seal]
By Frank Roos Vice Pres [Seal]
By J Fenlon Sec-Treas [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.

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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
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2/ Louis Peure, 1124-6th Avenue, Helena, Montana

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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.

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Dated this 1st day of July, 1954.

The Baltimore Copper Mining Co [Seal]
By Frank Loos Vice Pres [Seal]
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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.

COPY

This agreement, made this 31 day of December, 1953, by and between BALTIMORE COPPER MINING COMPANY, a Montana corporation, First Party, and LOUIS PEURA, of Helena, Montana, Second Party, WITNESSETH:

That for valuable considerations, to it in hand paid by second party, the receipt whereof is hereby acknowledged, first party hereby grants to second party the exclusive right and option to purchase, upon the terms and conditions hereinafter set forth, those certain quartz lode mining claims, situated in Jefferson County, Montana, and described by name and survey number as follows:

Name	Survey Number
The BALTIMORE,	1540.
The SKIPPER,	9690.
The LAST HOPE,	9689.
The MINNIE,	9689.
The MONA,	9689.

All situated in Township 6 North, Range 4 West

Together with the dumps now upon said mining claims and any ore broken and in the stopes, and together with the appurtenances.

1. The price to be paid first party for said optioned property in the event of the exercise of this option shall be the sum of Seventy-five Thousand Dollars ($75,000.00), payable on or before April 1, 1964, as follows:

The sum of $5,000.00 on or before April 1, 1959, and a like sum of $5,000.00 on or before April 1 of each year thereafter, until April 1, 1964, upon which date the then balance of said price shall be paid. Part or all of any of said payments may be anticipated by second party. All royalties paid by second party as hereinafter provided shall be credited as payments upon said purchase price, credit therefor to be given upon the installment or installments falling due next after such royalties are paid. Any part or all of said purchase price may be paid at any time while this agreement is in force.

2. Second party shall have the exclusive right to the possession of said mining claims and dumps from the time of the execution and delivery hereof and so long during said term as he shall

keep, observe and perform the terms and conditions hereof on his part, and shall have the right to explore, develop, and/or mine said mining claims, and extract ore therefrom, and ship the same, and ores from the dumps, in crude form, to market, and/or may mill any such ores and market the concentrates thereof, and retain the proceeds of all ores and concentrates so marketed, subject to the payment of royalties as hereinafter provided; and shall have the right to construct upon said mining claims such buildings, power lines, roadways, and other facilities, and to install such equipment, machinery and personal property thereon as he may see fit, and use the same in his operations hereunder.

3. Second party shall pay to first party a royalty of ten per cent (10%) of the net smelter returns from all ores, concentrates, or other products of operations hereunder, marketed by second party, provided that the minimum royalty to be paid shall be not less than fifty cents (50¢) per dry ton. "Net Smelter Returns" as the term is herein used means the amount paid by the smelter after deducting smelting charges and smelter deductions and railroad freight. In case second party shall deliver any of such ores or other products to the smelter by truck, the same amount shall be deducted from such returns before computation of royalty for transportation as though such products had been shipped by rail.

4. All work done upon said optioned property by second party shall be performed in a good, miner-like manner, timbering to be done where necessary to preserve access tunnels, shafts, drifts, and other workings used by second party, all consistently with good mining practice, and with due regard to the future operation of said property as a mine.

5. Second party may cut and use in his operations hereunder any timber standing or lying upon said mining claims.

6. The billing of all shipments of ores, concentrates, or other products shall show that such products come from the Baltimore Group, and shall show the name of first party as owner.

COPY

7. Before shipping any product to a smelter or other purchaser outside the State of Montana, second party shall notify first party in writing of the name and address of the smelter or other purchaser to which shipment is contemplated. Any smelter or other purchaser of products hereunder is hereby directed to deduct from the returns therefrom the royalties herein provided for, and transmit the same to first party at Livingston, Montana, c/o T. J. Fenlon, Secretary, until otherwise directed by first party; a copy of the settlement sheet to accompany such returns.

8. Ores, concentrates, or other products of operations hereunder may be removed from said optioned property only for market or for processing for market, and any of such products remaining upon said property at the time of the termination of this option without completion of the payment of the purchase price, shall belong to first party; but the proceeds of any such products then in transit to market, or off said property for processing for market, shall, subject to the deduction from the net returns therefrom and payment to first party of the royalty herein provided for, belong to second party.

9. First party, through its agents, officers, or attorneys, shall have the right at all reasonable hours to enter upon said optioned property and into the workings and buildings thereon for the purpose of inspection and the taking of samples, without interference, however, with the operations of second party hereunder.

10. Second party shall conduct operations hereunder in such manner as not to subject first party or its officers or agents to any liability for debts, nor liability for damages; and second party shall hold first party, its officers and agents, and said property, harmless from any and all such debts and liability, and all costs and expenses arising therefrom.

11. Second party shall, as a condition to the continuance of this option and lease in force, and beginning with the month of May, 1954, during each calendar month of the life of this agreement,

except when prevented by weather and/or road conditions, perform or cause to be performed upon said mining claims 30 man shifts of work or 8 hours each, or the equivalent thereof in working hours, in exploration, development and/or mining upon said group of mining claims; provided, however, that he may perform such work with bull-dozer or power shovel or other similar mechanical equipment, and 1 hour of work with such equipment shall be for the purposes of this paragraph the equivalent of 8 hours of manual work. Work done in any month in excess of the requirements of this paragraph for such month may be credited upon the requirements of this paragraph for subsequent months in the same calendar year in which such excess work shall be done.

12. Time is of the essence of this agreement. If second party shall fail to keep, observe and perform each and all of the terms and conditions hereof on his part, as and when herein provided, first party may at its election terminate this agreement; but in such event first party shall give second party written notice, by registered mail addressed to him at Helena, Montana, of its intention so to do; and if second party shall, within 30 days after service of such notice, cure and correct any default or defaults specified in such notice, then this agreement shall continue in force as though such default or defaults had not occurred and as though such notice had not been given; but if he shall not so cure and correct such default or defaults within said time, then this agreement shall become null and void at the expiration of said 30 day period, subject to the right of second party to remove property as hereinafter provided; and any payments theretofore made to first party shall be retained by first party as liquidated damages and as rental.

13. In case of the termination of this agreement in any manner second party shall have 60 days thereafter in which to remove from said group of mining claims any machinery and other equipment and personal property placed thereon by him, other than repairs and replacements of tracks or other property now theron, and other

than permanent buildings and similar improvements and mine timbering; and all property not so removed within said time shall become the property of first party; provided that if removal during said 60 days shall be impossible or unduly expensive, the time for removal shall be extended for a period equal to the time of existence of such preventing causes, but second party shall so dispose his removable property upon said group as not to interfere with another operation thereon.

14. When at least $5,000.00 shall have been paid on said purchase price, and while this agreement is in full force and effect, first party shall, upon the written request of second party execute and acknowledge in due form a bargain and sale deed conveying said mining claims and other property above optioned to second party, and place the same, together with an abstract of title to said mining claims, and together with an executed copy of this agreement, in escrow in a responsible bank in Helena or in Livingston, Montana; and in the event of deposit such bank is hereby directed to hold said deed and abstract and deliver the same upon, and only upon, the full payment of said purchase price while this agreement is in full force and effect, to second party. At the time of such deposit there shall be filed with such bank a statement, approved by both parties hereto, of the amount therefore paid upon said purchase price; and after such deposit all royalties shall be paid to such bank for credit upon said purchase price. Each party hereto shall pay one-half (½) of the escrow deposit fee. In case of the forfeiture of this agreement said bank shall hold said deed and abstract subject to the order of first party.

15. The lease of the above described property heretofore given second party by first party in March, 1953, is hereby merged in this agreement and shall have no independent force or effect after the execution and delivery hereof.

16. This agreement shall be binding upon and inure to the

C O P Y

benefit of the successors and assigns of first party, and the heirs, personal representative and assigns of second party.

IN WITNESS WHEREOF the parties hereto have executed these presents the day and year herein first above written.

BALTIMORE COPPER MINING COMPANY,

By Frank Loos, Vice Pres.
Its President.

First Party.

Attest:

T. J. Fenlon
Its Secretary.

(Corporate seal)
SEAL

Louis Peura
Second Party.

State of Montana)
County of Silver Bow (SS

On this 5th day of December, 1954, before me, Frank V. Rice, a notary public for the State of Montana, personally appeared Frank Loos, known to me to be the Vice President of the Baltimore Copper Mining Company, the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

In Witness Whereof I have hereunto set my hand and affixed my notarial seal the day and year in this certificate first written.

Frank V. Rice
Notary Public for the State of Montana, residing at Butte, Montana. My commission expires Jan. 11, 1954.

(Notarial seal)
SEAL

MF-103

1. Name of Applicant:

Louis Peura, Helena, Montana.
1124 - 6th ave.

2. General:

Application herewith submitted in quadruplicate, complying with instructions.

3. Applicant's Property Rights:

(a) Legal Description of Land:

Baltimore Lode Mining Claim: M. S. No. 1540;
Last Hope Lode Mining Claim: M. S. 9689;
Skipper Lode Mining Claim: M. S. 9690;
Nona Lode Mining Claim: M. S. 9689;
Minnie Lode Mining Claim: M. S. 9689;

all patented claims, situated in Section 7, T. 6 N., R. 4 W., M.P.M., Jefferson County, Montana.

(b) Mine name: "Baltimore".

(c) Interest in Land:

Lease and option from owners, operator acting as Lessee and Optionee.

(d) Copy of Lease:

Lease copy, dated December 31st, 1953, submitted herewith from record owners, covering foregoing described properties.

(e) Lien or Encumbrances:

None.

(f) No unpatented claims.

4. Physical Description:

(a) Mining or exploration operations:

Exhibits a to G inclusice show in detail the hundreds of feet of development accomplished in prior operations of development and mining. Several adits make exploration feasable, after reasonable amount of rehabilitation. Mine stopes are open for inspection of ore faces exposed in near-surface workings.

(b) Past ore production:

Exhibit ____, herewith attached summarizes in part "Baltimore Smelter Settlements" from periods 1889 to 1919

(c) Geological features, etc:

Geology, mineralization, and other factors are noted in geologist's memorandum report attached hereto.

4. Physical Description (continued):

(d) Accessibility of Project:

Property is reached by approximately 4 miles travel westerly from Boulder, Montana by county road and it is about 3 miles by such road to the Great Northern Railroad loading ramps near Boulder.

(e) Manpower, materials, etc:

Boomerrany Creek affords ample water supply for mining and camp purposes and traverses the claim group. Montana Power line may be reached within distance of approximately one mile, now serving the Free Enterprise uranium property. Compressor, drills, and other attendant equipment to be supplied through operator. Manpower available locally. Materials and supplies readily available through Boulder, Butte, and Helena supply houses.

5. The Exploration Project:

(a) Minerals to be explored:

Lead, zinc, copper; attendant gold and silver.

(b) Proposed Work:

Attached cross section map, exhibit "C" shows the development work proposed which includes rehabilitation of the "Hope" adit, about 800 feet long, providing for retimbering of about 75 feet of adit, and conditioning about 725 feet of length. Also providing for raise of about 183 feet and drifts from raise , at intervals of 40 feet about 150 feet total.

(c) Start of Work:

Provides for starting development work within 30 days and to be completed within a total time period Of 18 months.

(d) Operating Experience of Operator:

Applicant will act as operator at the mine and conduct supervision; formerly (in 1953) exploring and developing the Baltimore Group for about 4 months period and is therefore conversant with development requirements and present workings of the property. Some ore shipments were made by applicant from near-surface workings. Applicant has been associated with general mining operations in the Boulder-Helena area for 18 years, being engaged in mine development and mining operations, dozier and ore trucking contract work.

Estimate of Costs:

(see attached sheet)

6. Estimate of Costs:

(a) Independent Contracts: None.
(b) Labor, supervision, consultants: Provided through unit costs.
(c) Operating materials and supplies: Pipe, rail, powder, timber, tools, equipment, etc. provided by operator through unit costs.
(d) Operating equipment: Supplied by operator under unit costs.
(e) Rehibilitation and repairs:

			Totals
1.	General rehabilitation of 16x24 building on ground, by providing roofing, siding, door and windows for winter occupancy	$300.00	300.00
2.	Hope adit, timbering and clearing about 75 feet of adit @ $32.00 per foot....	2400.00	
	Clearing about 725 feet of Hope adit @ $8 per foot.....	5800.00	8200.00
3.	Raising from Hope adit, about 183 feet, at $34 per foot, ...	6222.00	
	Drifts from raises, total 150 feet, at $32 per foot.....	4800.00	11022.00
	Total		$19,522.00

(f) New Buildings, etc: None.
(g) Miscellaneous: None.
(h) Contingencies: None.

7. (a) Applicant is prepared to share his share of cost of proposed project in accordance with Regulations (Section 7, DIEA No. 1).

(b) Applicants share of costs will be met by 1. Money for labor, supplies and equipment; (2) Use of equipment owned by applicant; (3) Other: Materials and supplies as pipe , rail, and other equipment on hand.

***

WADE V. LEWIS . . . . . MINING ENGINEERING • GEOLOGICAL EXAMINATIONS

PHONE 2121 . . . . BOULDER BANK BUILDING

BOULDER, MONTANA

November 9th, 1954

Memorandum Report of the Baltimore Lode Claim Group

Property:

The Baltimore Lode Mining Claim Group consists of the following patented claims:

Baltimore Lode Mining Claim: M. S. No. 1540;
Last Hope Lode Mining Claim: M. S. No. 9689;
Skipper Lode Mining Claim: M. S. No. 9690;
Mona Lode Mining Claim: M. S. No. 9689;
Minnie Lode Mining Claim: M. S. No. 9689,

situated in Section 7, of Township 6 North, Range 4 West., M.P.M., Jefferson County, Montana.

The property is reached by county road and approximately four miles northwest of the town of Boulder, County seat of Jefferson county.

History of District:

The Baltimore claim group is contained in the Boulder Mining District that has produced gold, silver, lead, zinc and copper since early days, and more recently commercial uranium ores. On the north it adjoins the Amazon District which has experienced mining development to about the 800 foot level. The Elkhorn Mining District, located about nine miles northeast of the Baltimore group, reached a depth of 2,300 feet, measured on the slope of the Elkhorn silver-lead-zinc orebodies. The deep Butte copper center is southwest about 25 miles. The Free Enterprise uranium-radon property is located in an adjoining section, about one mile distant. The Baltimore property is therefore in or near one of the best mineralized producing areas of the western United States.

Mining Development:

Several thousand feet of adits, drifts, raises and stopes represent the development of the Baltimore property. Such development is depicted on map exhibits "A" to "G", to which this report is attached. The longest adits are known as the Hope Tunnel and Tunnel No. 1. It is understood that the last work performed years ago in the Hope adit reached copper ore but was followed up by little exploration or development. Metal prices, as is often the case, may have governed further development. Miners of that date appeared less interested in copper ores encountered, confining interest to the lead ore shoots with attendant gold and silver values.

Continued ore development is planned by operator and lessee Louis Feura, which work will include rehabilitation of the Hope adit and thereafter raising and crosscutting on the ore shoots known to exist in mine workings and stopes above.

Geology and Mineralization:

Vein system and ore widths are shown on map exhibits attached. Ore bearing veins with siliceous gangue are contained in the monzonite of the Boulder batholith. Early mapping classifies some attending rock phases as rhyolite, although recent classifications of dikes, sills, and irregular rock masses segregated from the granitic magma have been named alaskite and aplite. Fault features attending the Baltimore ores are shown on operator's map exhibits attached.

Ore minerals contained in the Baltimore mine are galena, sphalerite, chalcopyrite and other copper minerals, these minerals representing the lead, zinc and copper ore values, with appreciable amounts of gold and silver, for which smelter payment is likewise made and which aids in meeting mining and development costs.

Attached Baltimore Smelter Settlement record (condensed) shows first Lot shipment of May 27th, 1889, yielding 12.3% lead, 26.8 oz. silver, and 0.36 oz. of gold. Ninety-nine listed shipments between that date and May 5th, 1919 show the settlements yielded from 3.8% to 17.8% lead; 10.9 oz. to 38.3 oz silver; 0.04 to 0.50 oz of gold per ton. Early day shipments often ignored zinc and copper values.

Recommendation and Conlusion:

Open stopes within the Baltimore mine workings show sizeable ore exposures, indicating shipping possibilities have not been exhausted. In fact all production to date has come from near-surface workings. History of the property, operated in a desultory fashion by various leasers indicates that the property now merits a planned development program, with quite reasonable assurance of continuity to some depth.

Nominal development and work program now planned by present lessee and operator is of such conservative scope as to disclose new ores in continuity with those now exposed in present stopes and mine workings. Work proposed should be an effective and direct approach to immediate disclosure of new commecrial shipping ores.

Wade V. Lewis, Geologist.

BALTIMORE SMELTER SHIPMENTS: (Every Tenth Lot For Period Shown)

LOT NO	DATE	SHIPPER	AU OZ	AG OZ	PB %	WEIGHT IN POUNDS	ZN %	CU %
1	5/27/89	Jessie Davidson	0.36	26.8	12.5	93218		
2	5/27/89	" "	0.32	25.1	11.0	56879		
3	6/ 2/89	" "	0.26	21.0	14.1	28157		
4	6/27/89	" "	0.30	13.9	12.2	41762		
5	9/26/89	" "	0.28	26.7	10.6	20736		
6	11/25/89	Archie McIntyre	0.46	38.2	6.7	5600		
7	5/12/00	Phil Ungher & Company	0.40	22.4	14.7	55898		
8	6/19/00	" " "	0.29	25.7	15.7	35721		
9	6/23/00	" " "	0.30	24.1	17.8	21100		
10	8/30/01	Austin & Pritchett	0.16	15.4	9.0	33986		
10	9/13/05	J. F. Walker	0.22	15.0	3.0	86406		
20	4/16/06	Moore & Gendle	0.11	27.1	7.1	88524		
25	6/21/07	Baltimore Mining & Dev Co	0.20	14.0	9.8	52526		
11	7/20/07	" " "	0.11	10.9	3.1	65642		
17	9/25/07	" " "	0.12	13.5	9.5	165549	21.0	2.1
18	10/ 3/07	" " "	0.13	14.5	8.0	73737	18.9	19
10	3/ 7/12	C. Whitcomb	0.17	15.4	7.0	97893	1.0	
14	3/26/12	"	0.17	15.6	6.3	60649	1.6	05
13	3/26/12	"	0.16	15.8	6.9	80974	2.0	0.7
15	2/11/12	"	0.24	17.1	12.3	77998	3.3	05
16	7/10/13	Baltimore Copper Mines	0.16	21.6	7.7	51012	1.0	
17	9/ 8/13	" " "	0.10	13.3	4.8	58543	3.9	1.3
18	9/10/13	" " "	0.11	13.6	5.5	66886	11.6	1.2
19	10/ 1/13	J. Hatson	0.10	12.0	5.4	79667	11.0	1.2
29	5/ 2/14	Baltimore Copper Mines	0.10	25.1	9.3	125407		
39	7/ 7/14	" " "	0.14	24.0	7.0	74987		Sp.
49	9/29/14	" " "	0.08	22.2	4.0	93452		
59	5/ 4/14	" " "	0.09	19.7	5.4	107065		
69	5/13/16	Hatson & Johnson	0.10	24.4	6.0	81973		
79	3/27/17	Hatson Brothers	0.04	16.5	2.0	80048	1.6	
89	3/29/19	Butte Copper Mng Company	0.09	24.3	3.8	85531	0.5	
99	5/ 5/19	" " "	0.11	12.4	3.8	73992		

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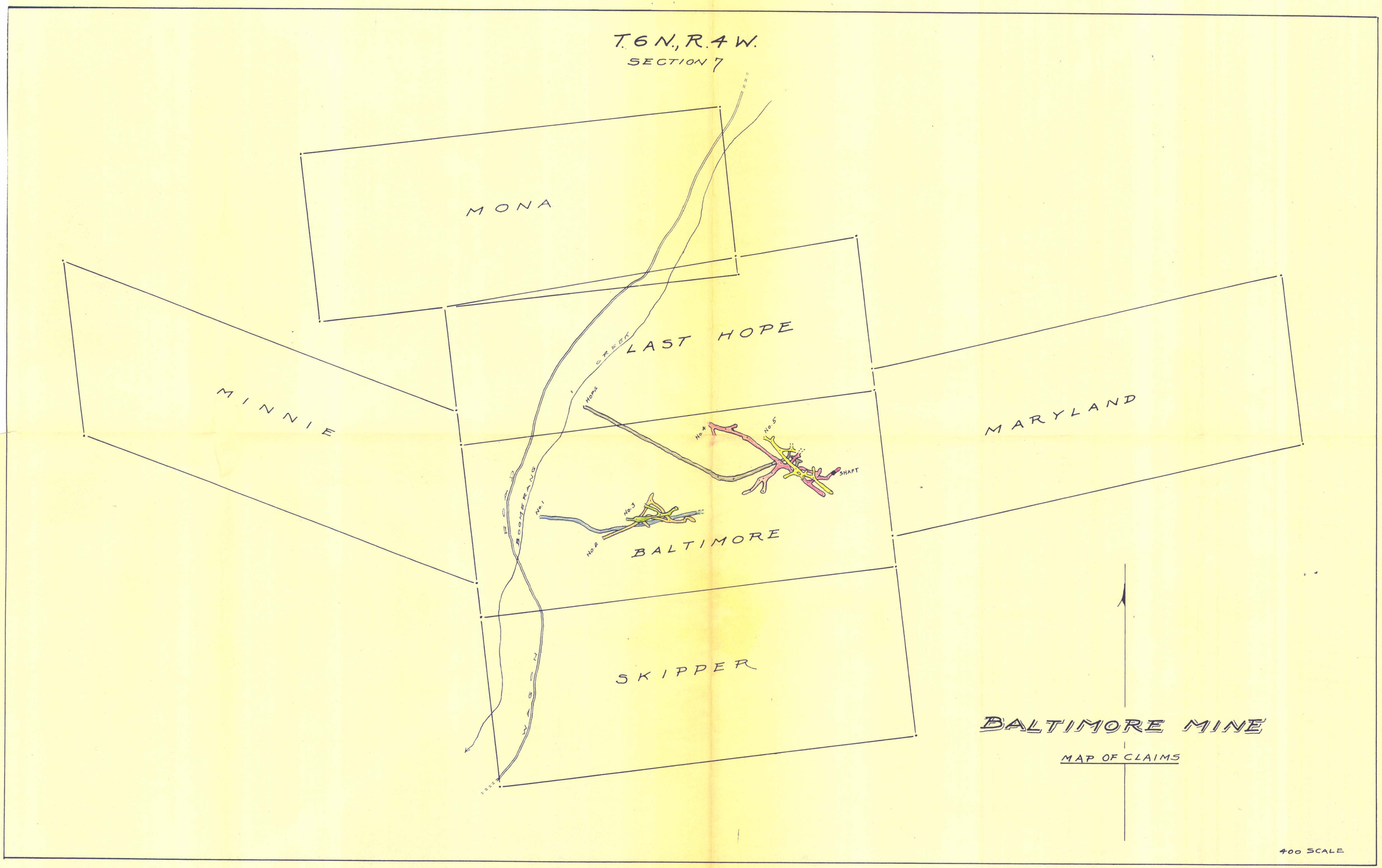
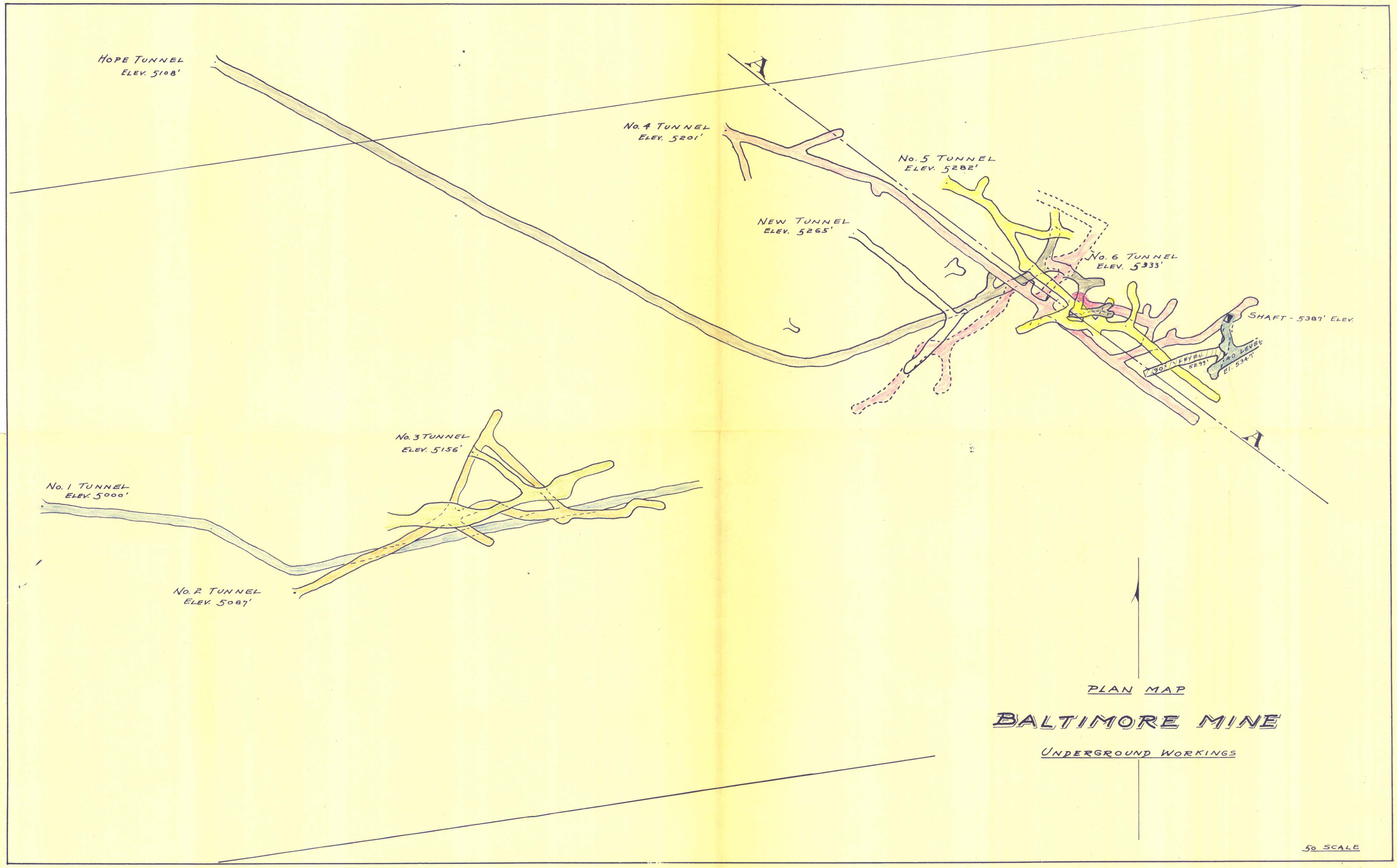
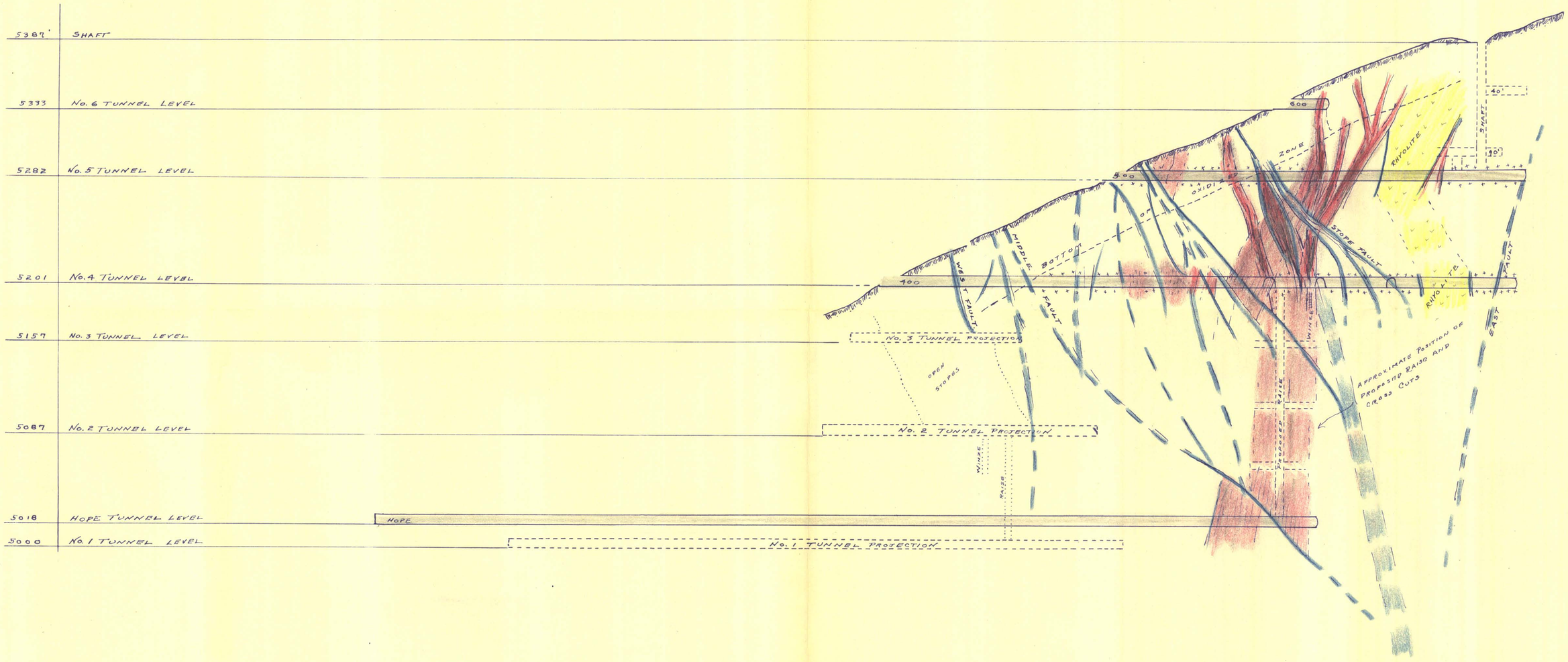

T.6N., R.4W.
SECTION 7
MONA
MINNIE
LAST HOPE
MARYLAND
BALTIMORE
SKIPPER
ROAD TO BOOMERANG
WAGON
HOPE CREEK
No. 1
No. 2
No. 3
No. 4
No. 5
SHAFT
BALTIMORE MINE
MAP OF CLAIMS
400 SCALE

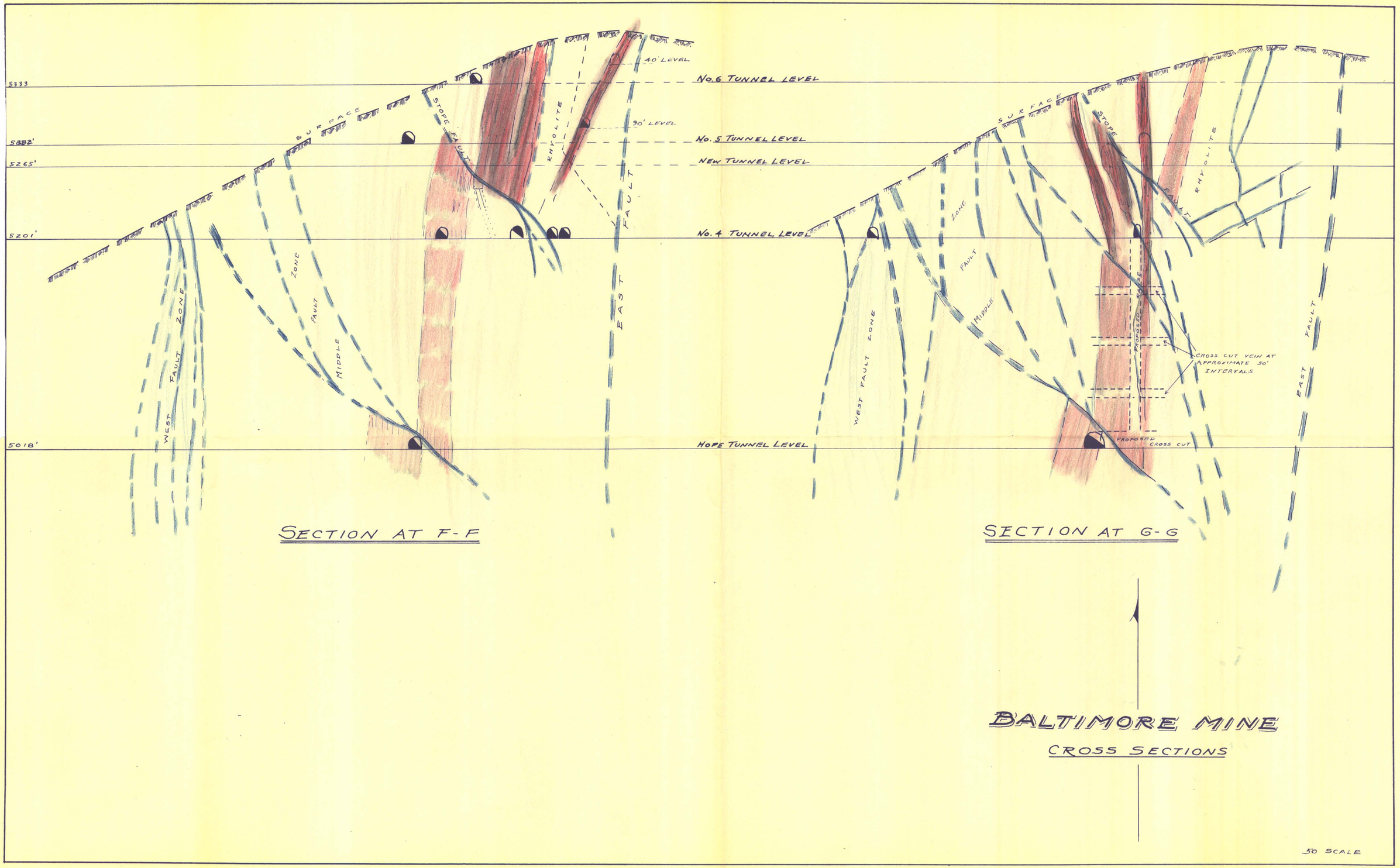

HOPE TUNNEL
ELEV. 5108'
A
No. 4 TUNNEL
ELEV. 5201'
No. 5 TUNNEL
ELEV. 5282'
NEW TUNNEL
ELEV. 5265'
No. 6 TUNNEL
ELEV. 5333'
SHAFT - 5387' ELEV.
190' LEVEL
5293'
190 LEVEL
El. 534'
A
No. 3 TUNNEL
ELEV. 5156'
No. 1 TUNNEL
ELEV. 5000'
No. 2 TUNNEL
ELEV. 5087'
PLAN MAP
BALTIMORE MINE
UNDERGROUND WORKINGS
50 SCALE

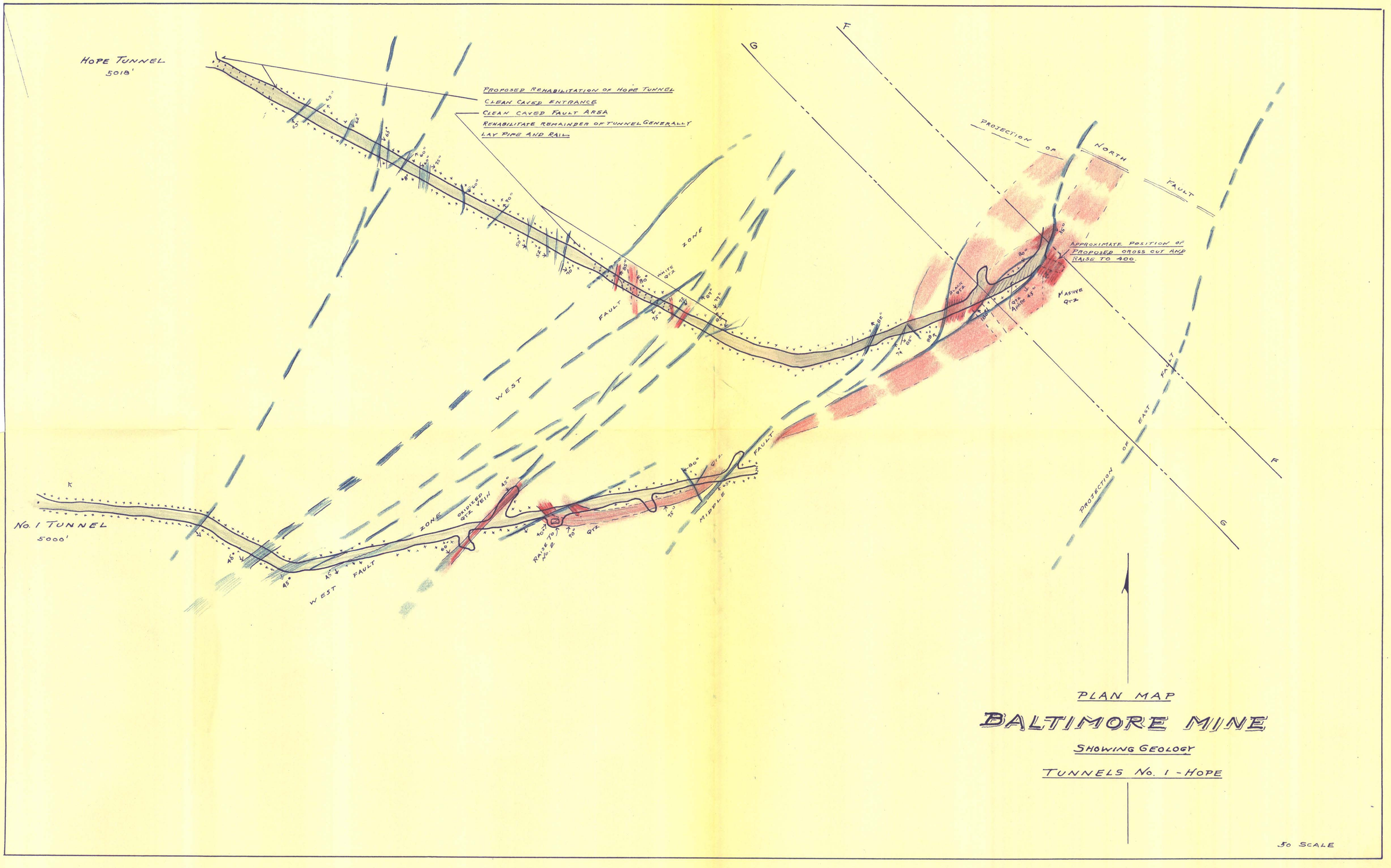


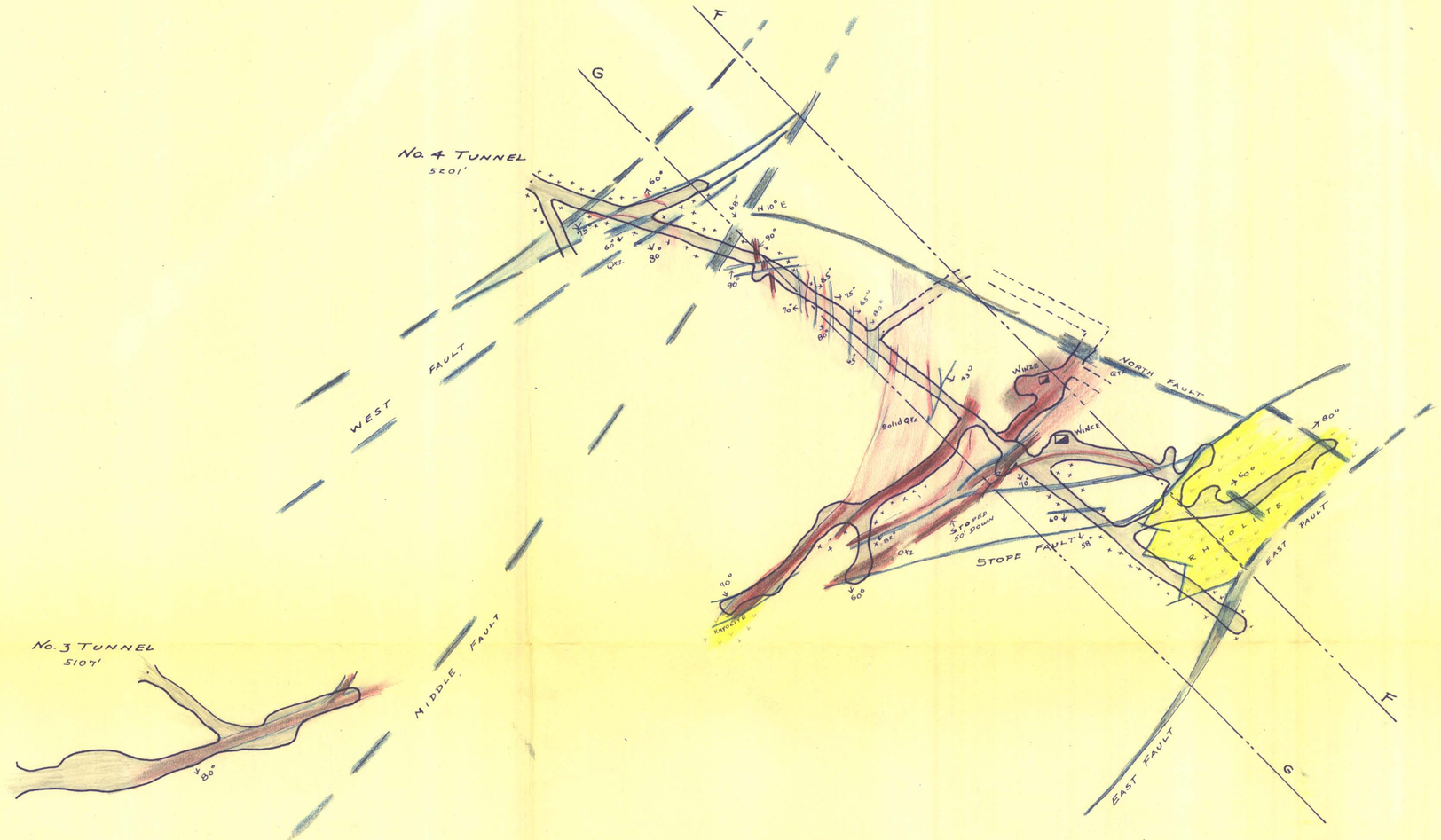
BALTIMORE MINE

SHOWING SECTION A-A

50 SCALE


5333
5282'
5265'
5201'
5018'
No. 6 TUNNEL LEVEL
No. 5 TUNNEL LEVEL
NEW TUNNEL LEVEL
No. 4 TUNNEL LEVEL
HOPE TUNNEL LEVEL
40' LEVEL
90' LEVEL
SURFACE
STOPE
FAULT
RHYOLITE
EAST FAULT
WEST FAULT ZONE
MIDDLE FAULT ZONE
SECTION AT F-F
SURFACE
STOPE
RHYOLITE
FAULT
WEST FAULT ZONE
MIDDLE FAULT ZONE
PROPOSED STOPE
CROSS CUT VEIN AT APPROXIMATE 50' INTERVALS
PROPOSED CROSS CUT
EAST FAULT
SECTION AT G-G
BALTIMORE MINE
CROSS SECTIONS
50 SCALE


HOPE TUNNEL
5018'
PROPOSED REHABILITATION OF HOPE TUNNEL
CLEAN CAVED ENTRANCE
CLEAN CAVED FAULT AREA
REHABILITATE REMAINDER OF TUNNEL GENERALLY
LAY PIPE AND RAIL
WHITE QTZ
FAULT
ZONE
WEST
PROJECTION OF NORTH FAULT
APPROXIMATE POSITION OF PROPOSED CROSS CUT AND RAISE TO 400.
MASSIVE QTZ
PROJECTION OF EAST FAULT
F
G
K
No. 1 TUNNEL
5000'
WEST FAULT
ZONE
OXIDIZED QTZ VEIN
RAISE TO No. 2
QTZ
MIDDLE FAULT
PLAN MAP
BALTIMORE MINE
SHOWING GEOLOGY
TUNNELS No. 1 - HOPE
50 SCALE



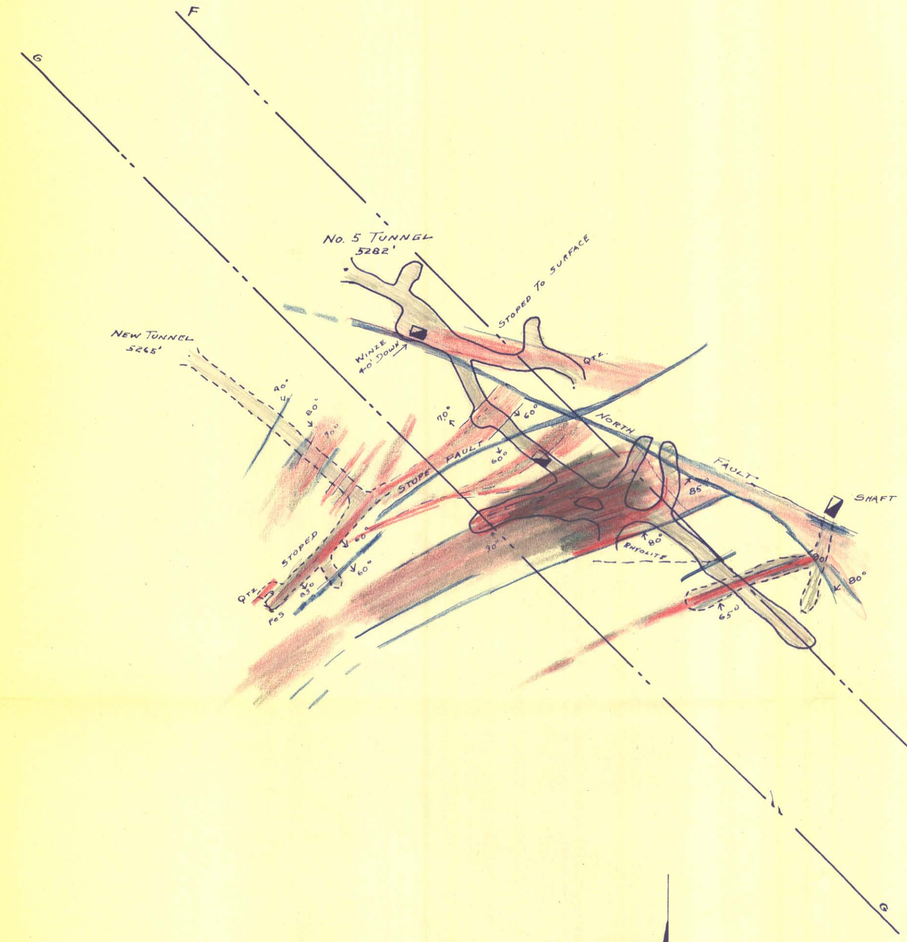
PLAN MAP

BALTIMORE MINE

SHOWING GEOLOGY

TUNNELS No. 3 AND No. 4

50 SCALE



PLAN MAP

BALTIMORE MINE

TUNNEL No. 5

SHOWING GEOLOGY

50 SCALE