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Cys to USBM & USGS

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File Copy
Surname

J. Alt
Kiilsgaard
Stehon
Hodges
Selfridge
Johnson

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

MAY 2 0 1955

Mr. Cyrus Whittier
1219 East First Street
Butte, Montana

Re: Docket No. DMEA-3665 (Lead-Zinc-Copper)
Cyrus Whittier
Queen of the Hills Mining Claim
Beaverhead County, Montana

Dear Mr. Whittier:

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 (for)

Administrator

JWAlt/er 5/19/55
Docket
Copy to: Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region I (2) NW Dist.
Chron.

R.C.L.

File Copy
Surname
J. WD.

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

May 19, 1955

Memorandum

To: The Administrator

From: Chief, Base Metals Division

Subject: Denial of Application, Docket No. DMEA-3465 (Lead-Zinc-Copper), Cyrus Whittier, Queen of the Hills Mining Claim, Beaverland County, Montana.

The cited application, dated August 13, 1954, was received by this office on August 27, 1954. It was forwarded by the Executive Officer of Region I, Northwest District, and it was stated that a field examination would be scheduled.

The Applicant proposed to re-open the adit to the shaft and to crosscut to the "third vein". The estimated cost to do this work is $11,952.00. The Field Team pointed out to the Applicant that the "third vein" might well not extend to a point opposite the shaft. Thereupon, he proposed that a better course of action might be to drive southwest along the main vein from the face of the stope drift for as far as the structure appeared promising. At the end of this drift, he proposed crosscutting the "third vein".

On September 15, 1954, the Field Team examined and mapped the property. Their report, dated April 13, 1955, was received by this office on May 9.

At the time of the examination, the Applicant had succeeded in opening the adit for a distance of 220 feet. Much of this advance required spiling. Mapping indicated a distance of about 545 feet from the caved face to the bottom of the shaft. Nothing is known about the condition of the adit ahead of the caved face. However, the portal of the adit is thought to have been near the point of a fault-bounded salient in the granodiorite-Belt complex. As the working is followed away from this salient, it seems expectable that the ground might become less broken and progress easier.

The targets for exploration, however, do not seem very attractive. The first target is a narrow quartz vein originally mined for gold and silver which nowhere on the surface dumps gives evidence of containing sufficient base metal to be minable. The second, and more favorable target in the eyes of the Applicant, is the problematic continuation of a similar quartz vein assumed to extend between two, and only two, widely separated prospect shafts in a covered area. It is possible that this "third vein" continues to the northeast part of the shaft, and even that it swings over to join the segment of the main vein near its northeast limit, to become an element of a braided vein system. There is, however, no positive evidence for this interpretation. From the study of the dump, it appears that no vein matter was encountered in this prospecting.

The Field Team concludes that the probability of finding commercial amounts of base metal ore is not sufficiently high to warrant exploration where the principal target requires such a high percentage of interpretation. This is especially true in the light of the large amount of effort needed to reach the target site.

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

W. R. Griswold

W. R. Griswold

JWAlt/er

Copy to: Docket
Base Metals
Chron.

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

May 19, 1955

Memorandum

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The Field Team concludes that the probability of finding commercial amounts of base metal ore is not sufficiently high to warrant exploration where the principal target requires such a high percentage of interpretation. This is especially true in the light of the large amount of effort needed to reach the target site.

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

W. R. Griswold

W. R. Griswold

JWAlt/er

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

RECEIVED

May 17, 1955

Re: DMEA-3465
Cyrus Whittier
Queen of the Hills
claims
Beaverhead County, Mont.

Memorandum

To: W. R. Griswold, DMEA

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

Subject: Review of the field team report and recommendation for denial of application

I have reviewed the application in the light of the field team examination by W. B. Myers of the Federal Geological Survey.

The applicant proposes to reopen the 900-foot adit connection to the 185-foot shaft. Thereafter his plan involves a 200-foot crosscut to the presumed extension of a "third vein." The applicant states that in 1942 when the adit was wholly accessible he examined the intersection with the vein on which the 185-foot shaft was sunk. He inspected the faces of the short drifts on the vein, sampling one face which he recalls contained lead-gold-silver ore of less than shipping grade. The primary objective of the exploration is to crosscut to the "third vein" which is said to be marked on the outcrop by a series of prospect shafts.

Mr. Myers examined the outcrop of this "third vein" noting that the galena-bearing quartz seen on the dumps of two of the caved prospect shafts is not distinguishable from that seen on the dumps of pits and shafts on the Main vein which was valued chiefly for gold rather than lead content. Apart from the quartz exposed in the two shafts, no mineralization was noted on the line of the two shafts and the mineralization seen has a width of no more than 12 inches at the outcrop and contains far too little lead, zinc, gold and silver to be considered economic. The surface expression of the target vein is not impressive, and its similarity at the outcrop to the Main vein and the low grade of the Main vein at the adit level suggest the exploration has very little promise.

I recommend the application be denied.

O. M. Bishop

O. M. Bishop

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

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

May 17, 1955

Re: DMEA-3465
Cyrus Whittier
Queen of the Hills
claims
Beaverhead County, Mont.

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I recommend the application be denied.

Signed

O. M. Bishop

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

IN REPLY REFER TO:

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

RECEIVED
MAY 13 1955

May 11, 1955

Re: DMEA-3465
Cyrus Whittier
Queen of the Hills
Claims
Beaverhead Co., Mont.

Memorandum

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

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

Subject: Review of Field Team report

A thorough examination appears to have been made of the subject prospect and the denial of the application is supported by the facts and inferences submitted.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
MAY 13 1955

May 11, 1955

Re: DMEA-3465
Cyrus Whittier
Queen of the Hills
Claims
Beaverhead Co., Mont.

Memorandum

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

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

Subject: Review of Field Team report

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I concur with the recommendation.

N. E. Nelson

N. E. Nelson

NENelson:hlm
G-5/11/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
O. M. Bishop, 3617 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 25, 1955

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

Re: Docket No. DMEA-3465 (lead-zinc-copper)
Cyrus Whittier
Queen of the Hills Claims
Beaverhead County, Montana

Dear Mr. Selfridge:

Enclosed are four copies of a report from Mr. W. B. Myers, geologist, Geological Survey, on the subject property.

Mr. Myers concludes that the narrow width and low grade of the known vein and the indefiniteness of the location of the principal target preclude further recommendation of the applicant's proposal. The Field Team is in accord with his findings and recommends a denial of the application.

By Field Team, Region I, NW District

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

Thomas E Howard
Wing G. Agnew, Member
(U. S. Bureau of Mines)

Enclosures (4)
cc: USBM(2)
Myers

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

So. 157 Howard Street
Spokane 4, Washington

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

April 13, 1955

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: W. B. Myers, Geologist, U. S. Geological Survey

Subject: Docket No. DMEA-3465 (lead-zinc-copper), Application Examination Report, Cyrus Whittier, Queen of the Hills Claims, Beaverhead County, Montana

Introduction

It is recommended that the DMEA deny the application of Cyrus Whittier for aid in the exploration of the Queen of the Hills group of claims.

The Queen of the Hills group of claims was examined and mapped on September 15, 1954, in the company of Cyrus Whittier. A short return visit was made on the sixteenth, mainly to question the applicant further on his proposal.

The claims are located on the southeast slope of Sheep Mountain probably in the SW¼ of sec. 10, T. 2 S., R. 11 W. 1/ The altitude of the adit is reported to be approximately 8200 feet. The nearest shipping point is Divide on the Oregon Short Line of the Union Pacific Railroad system, a distance of about 19½ miles from the claims. The first seven miles from Divide to Dewey is over the paved State Highway 43. From Dewey a graded dirt Forest Service road leads to Quartz Hill; the last six miles beyond Quartz Hill is less well maintained and is usually snow blocked from some time in November through May. The difference in altitude from Divide to the claims is 2800 feet.

1/ The applicant has indicated the Queens group in section 9, and it is so shown on the very generalized map accompanying the application. However, general topographic relations and study of a photo-index of the region suggest, that instead of lying at the head of Vipond Creek, the Queens group is on the northwest side of Queens Gulch in the SW¼ of section 10.

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

Geology of the Deposit

In the vicinity of the workings, a mantle of slope wash and rubble almost completely blankets the bedrock geology. Almost without exception, exposures are limited to the walls of mine and prospect workings.

The Queen of the Hills mineralized area consists of several south-southwest-trending steeply-dipping galena-bearing quartz veins, which appear to lie athwart the irregular northeast margin of a granodiorite mass which intrudes Belt argillite and interbedded quartzite (see attached sketch map). The contact seems to trend west-northwest in gross aspect; it is thought to continue along the crest of Sheep Mountain in a N. 60° W. direction for several miles to the northwest of the claims. From the very meager information in the Queen pits, the details of the granodiorite contact appear to have been strongly controlled by the near-vertical north-striking layering of the altered sediments. The age of the granodiorite is not known. In mineralogy, texture, and general aspect, it is dissimilar to the Eocene granodiorite and quartz monzonite widely exposed near Brown's Lake and in the 15-minute quadrangle to the south.

A short distance east of the Queen group workings, the granodiorite-Belt sediment complex is cut off by a N. 32° W.-trending steep fault which brings the Jefferson dolomite of upper Devonian age against the sheared complex. This fault, although not exposed within the area of the sketch map, was approximately located for a strike length of 1400 feet by mapping the lithologies on numerous prospect dumps and in the surfical cover. To the northwest, it is believed to continue along the northeast base of Sheep Mountain for several miles, separating the complex on the high ridge from a lower-lying terrane of Cambrian and Devonian dolomite.

A short distance southeast of the portal of the adit, not more than a few hundred feet at most, the contact of the carbonate rocks veers to the southwest, and according to the applicant continues on a south-southwest trend for at least three-quarters of a mile. From scant regional information and that described above, it is conjectured that this contact, like the better known north-northwest trending one, is a major steep fault with a strike of about S. 30° W., and thus subparallel to the mineralized fractures of the Queen group.

According to Winchell[2/], the Queen of the Hills ore was valued chiefly for gold. Production from the Queen of the Hills mine came largely, or entirely, from stopes on a single narrow vertical quartz vein, or vein zone, with an average strike of about S. 38° W.

[2/] Winchell, A. N., Mining Districts of the Dillon Quadrangle, Montana, and Adjacent Areas, U. S. Geol. Surv. Bull. 574, p. 79, 1914.

This slightly bowed vein, concave to the east, can be traced by means of a series of prospect and mine openings, through a strike length of about 750 feet. On the northeast, the structure appears to terminate against the N. 32° W. fault which bounds the granodiorite-Belt complex. However, dumps from scattered prospect workings in dolomite, a few hundred feet east of the fault and in an east-northeast direction from the main Queen shaft, show a little disseminated galena. In addition, the Faithful mine (Contract Idm-E434), on a S. 20° W. near-vertical quartz vein, is located across the fault in Cambrian dolomite at a distance of something over a mile in a general N. 20° E. direction from the Queen shaft. The main Queen vein then, although not parallel to the Faithful vein, lies on the strikewise projection of the latter vein. On the southwest, a shallow trench on the trend of the vein, but 100 feet beyond the last exposure, failed to pick up vein matter. At two localities the vein crosscuts north-trending granodiorite contacts with little or no offsetting; this would suggest that the vein does not occupy a fracture of significant displacement.

The main shaft, from which most of the production was won, was sunk on the vein to a depth of approximately 200 feet at a point about 450 feet from the northeast end of the structure. An adit, approximately 760 feet in length, driven largely in granodiorite, intersects the bottom of the shaft and was open until recent years. Both shaft and adit are now caved, but the applicant, who examined the adit level in 1942, states that the shaft was vertical, or essentially so, and that it was on the vein at the adit level.

Judging from caved surface workings, the vein was mined along a strike length of about 250 feet, the greater part of this lying to the southwest of the shaft. On the surface, all but the southwesternmost limit of this productive segment had phyllite walls. Vein width is unknown for the most part, but 40 to 50 feet northeast of the shaft, exposures indicate a maximum possible width of not more than 30 inches. On the adit level, the applicant reports stoping for 80 feet on each side of the shaft, with very little drifting beyond the stope faces. Vein width here appears to have been 4 to 6 feet, but grade and wall rock type are unknown. Vein thickness at other points is not known with any certainty, but on one dump near the northeast end of the known vein extent blocks of vein matter suggest a 12-inch width; the amount and type of vein material seen on other dumps does not suggest a markedly thicker vein.

Throughout most of the known length the vein matter consists of white quartz, more or less limonite-stained from oxidized pyrite, containing streaks and scattered crystals of galena. Locally a little copper stain, presumably from minor amounts of tetrahedrite(?) is present; a small amount of barite was noted in some specimens. The only significant change observed along the strike is the occurrence of abundant barite near the northeast limit of the vein.

A second vein structure, parallel in strike to the first, and lying 190 feet to the southeast, is known only from a single exposure in a partially caved prospect working. This structure consists of a slip plane dipping 63° northwest in the middle of a zone 4 feet thick of partially silicified, copper-stained granodiorite. A white quartz pod, stained with copper, borders the slip and attains a thickness of 15 inches, but wedges out near the caved floor of the working about 14 feet below the surface. Nothing remotely approaching ore grade material was noted. This structure, or a similar one, was barren where cut by the adit, according to the applicant.

Galena-bearing vein quartz, referred to by the applicant as the "third vein", is exposed on the dumps of two inaccessible prospect shafts sunk in granodiorite and situated respectively at about 570 and 880 feet southwesterly from the main shaft. These shafts, 380 feet apart along a S. 23° W. bearing, represent the only information concerning this "third vein." No outcrops nor any mineralized quartz float were noted on the line of this structure either between or beyond the prospect shafts. On the unproven assumption that these shafts prospect a single vein, this assumed structure is subparallel to the main vein but not in line with it; the indicated extent of the "third vein" lies south as well as west of the known segment of the main vein. Although the extended trend of the assumed structure lies more than 300 feet northwest of the main vein, there is no overlap of the indicated extents of the veins. It is entirely possible either that the "third vein" dies out and does not extend northeastward to a point opposite the main shaft, or that it is a faulted segment of the main vein rather than a separate structure.

The mineralized quartz of the "third vein" is not distinguishable from that of the main vein; its width apparently is not great, a thickness of 12 inches is suggested from a block on the northeast shaft dump. Here several hundred pounds of better grade mineralized vein material had been hand sorted from perhaps a ton or two of vein quartz. Two samples, judged to contain as much galena as any of the vein quartz seen on the various dumps of the main vein, were taken from this pile. The results are tabulated below:

Samples of Quartz Vein, Prospect Shaft Dump
570 feet S. 68° W. of Queen of the Hills Shaft

Sample No.	Pb (%)	Zn (%)	Au (oz./ton)	Ag (oz./ton)
QOH No. 1*	6.4	0.8	0.15	1.1
QOH No. 2**	3.6	0.9	0.11	0.7

*Grab sample by W. B. Myers of hand-sorted pile of vein material.
**Chip sample by Cyrus Whittier and W. B. Myers, of 12-inch cross section of quartz vein on hand-sorted pile.

Applicant's Proposal

The applicant proposes to reopen the adit to the shaft. From this point, his original plan was to crosscut directly to the presumed extension of the "third vein". It was pointed out to him in the field that the "third vein" might well not extend to a point opposite the shaft. Thereupon he proposed that a better course of action might be to drive southwest along the main vein from the face of the stope drift for as far as the structure appeared promising. At the end of this drift, he proposed crosscutting to the "third vein".

Evaluation of Proposal

At the time of the examination, the applicant had succeeded in opening the adit for a distance of 220 feet. Much of this advance required spiling. Mapping indicated a distance of about 545 feet from the caved face to the bottom of the shaft. Nothing is known about the condition of the adit ahead of the caved face. However, the adit is thought to have been portaled near the point of a fault-bounded salient in the granodiorite-Belt complex. As the working is followed away from this salient, it seems expectable that the ground might become less broken and progress easier.

The targets for exploration, however, do not seem very attractive. The first target is a narrow quartz vein originally mined for gold and silver which nowhere on the surface dumps gives evidence of containing sufficient base metal to be minable. The second, and more favorable target in the eyes of the applicant, is the problematic continuation of a similar quartz vein assumed to extend between two, and only two, widely separated prospect shafts in a covered area. It is possible that this "third vein" continues to the northeast pa t the shaft, and even that it swings over to join the short S. 57° W. segment of the main vein near its northeast limit, to become an element of a braided vein system. There is, however, no positive evidence for this interpretation. Some negative evidence exists beyond the lack of prospect workings, exposures or mineralized float. The east-trending, longest, and latest train of shaft dump from the main shaft is made up of phyllite. Much of this is very fresh, in marked contrast to the rest of the dump. It is suggestive of the possibility that a considerable amount of crosscutting away from the vein, in all probability towards the northwest, has already been attempted on some intermediate level. From study of the dump, it appears that no vein matter was encountered in this prospecting.

As has been stated before, the disposition of the known extent of the main vein and the so-called "third vein" suggests that the latter is nothing more than a faulted segment of the mined structure. A wide range of fault orientations might result in this pattern, including dislocations parallel to the mapped N. 32° W. fault which bounds the complex. Postmineral faulting of sufficient magnitude to accomplish this result has been recognized in the 15-minute quadrangle to the south.

In the writer's view, the probability of finding commercial amounts of base metal ore is not sufficiently high to warrant exploration where the principal target requires such a high percentage of interpretation. This is especially true in the light of the large amount of effort needed to reach the target site. The high transportation costs consequent to the relatively remote location of the claims would require an offsetting relatively high grade of ore which further diminishes the probability of success.

Attachment 1

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

xxx xxxxxxxxxxxxxx
No. 157 Howard Street
Spokane 4, Washington

April 25, 1955

Mr. George G. Gallridge, Chairman
Operating Committee, DMA
Department of the Interior
Washington 25, D. C.

Re: Docket No. MSA-3465 (lead-zinc-copper)
Cyrus Whittier
Queen of the Hills Claims
Beaverhead County, Montana

Dear Mr. Galbridge:

Enclosed are four copies of a report from Mr. F. S. Myers, geologist, Geological Survey, on the subject property.

Mr. Myers concludes that the narrow width and low grade of the known vein and the indefiniteness of the location of the principal target preclude further recommendation of the applicant's proposal. The Field Team is in accord with his findings and recommends a denial of the application.

By Field Team, Region 1, U. S. District

A. L. Weissenborn, Exec. Officer
(U. S. Geological Survey)

King G. Agnew, Director
(U. S. Bureau of Mines)

Enclosures (4)
cc: USGS(2)
Myers

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 13, 1955

MEMORANDUM

To: DMEA Field Team, Region I, Northwest District

From: W. B. Myers, Geologist, U. S. Geological Survey

Subject: Docket No. DMEA-3465 (lead-zinc-copper), Application Examination Report, Cyrus Whittier, Queen of the Hills Claims, Beaverhead County, Montana

Introduction

It is recommended that the DMEA deny the application of Cyrus Whittier for aid in the exploration of the Queen of the Hills group of claims.

The Queen of the Hills group of claims was examined and mapped on September 15, 1954, in the company of Cyrus Whittier. A short return visit was made on the sixteenth, mainly to question the applicant further on his proposal.

The claims are located on the southeast slope of Sheep Mountain probably in the SW¼ of sec. 10, T. 2 S., R. 11 W. 1/ The altitude of the adit is reported to be approximately 8200 feet. The nearest shipping point is Divide on the Oregon Short Line of the Union Pacific Railroad system, a distance of about 19½ miles from the claims. The first seven miles from Divide to Dewey is over the paved State Highway 43. From Dewey a graded dirt Forest Service road leads to Quartz Hill; the last six miles beyond Quartz Hill is less well maintained and is usually snow blocked from some time in November through May. The difference in altitude from Divide to the claims is 2800 feet.

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Geology of the Deposit

In the vicinity of the workings, a mantle of slope wash and rubble almost completely blankets the bedrock geology. Almost without exception, exposures are limited to the walls of mine and prospect workings.

The Queen of the Hills mineralized area consists of several south-southwest-trending steeply-dipping galena-bearing quartz veins, which appear to lie athwart the irregular northeast margin of a granodiorite mass which intrudes Belt argillite and interbedded quartzite (see attached sketch map). The contact seems to trend west-northwest in gross aspect; it is thought to continue along the crest of Sheep Mountain in a N. 60° W. direction for several miles to the northwest of the claims. From the very meager information in the Queen pits, the details of the granodiorite contact appear to have been strongly controlled by the near-vertical north-striking layering of the altered sediments. The age of the granodiorite is not known. In mineralogy, texture, and general aspect, it is dissimilar to the Eocene granodiorite and quartz monzonite widely exposed near Brown's Lake and in the 15-minute quadrangle to the south.

A short distance east of the Queen group workings, the granodiorite-Belt sediment complex is cut off by a N. 32° W.-trending steep fault which brings the Jefferson dolomite of upper Devonian age against the sheared complex. This fault, although not exposed within the area of the sketch map, was approximately located for a strike length of 1400 feet by mapping the lithologies on numerous prospect dumps and in the surfical cover. To the northwest, it is believed to continue along the northeast base of Sheep Mountain for several miles, separating the complex on the high ridge from a lower-lying terrane of Cambrian and Devonian dolomite.

A short distance southeast of the portal of the adit, not more than a few hundred feet at most, the contact of the carbonate rocks veers to the southwest, and according to the applicant continues on a south-southwest trend for at least three-quarters of a mile. From scant regional information and that described above, it is conjectured that this contact, like the better known north-northwest trending one, is a major steep fault with a strike of about S. 30° W., and thus subparallel to the mineralized fractures of the Queen group.

According to Winchell[2], the Queen of the Hills ore was valued chiefly for gold. Production from the Queen of the Hills mine came largely, or entirely, from stopes on a single narrow vertical quartz vein, or vein zone, with an average strike of about S. 38° W.

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[2] Winchell, A. N., Mining Districts of the Dillon Quadrangle, Montana, and Adjacent Areas, U. S. Geol. Surv. Bull. 574, p. 79, 1914.

This slightly bowed vein, concave to the east, can be traced by means of a series of prospect and mine openings, through a strike length of about 750 feet. On the northeast, the structure appears to terminate against the N. 32° W. fault which bounds the granodiorite-Belt complex. However, dumps from scattered prospect workings in dolomite, a few hundred feet east of the fault and in an east-northeast direction from the main Queen shaft, show a little disseminated galena. In addition, the Faithful mine (Contract Idm-E434), on a S. 20° W. near-vertical quartz vein, is located across the fault in Cambrian dolomite at a distance of something over a mile in a general N. 20° E. direction from the Queen shaft. The main Queen vein then, although not parallel to the Faithful vein, lies on the strikewise projection of the latter vein. On the southwest, a shallow trench on the trend of the vein, but 100 feet beyond the last exposure, failed to pick up vein matter. At two localities the vein crosscuts north-trending granodiorite contacts with little or no offsetting; this would suggest that the vein does not occupy a fracture of significant displacement.

The main shaft, from which most of the production was won, was sunk on the vein to a depth of approximately 200 feet at a point about 450 feet from the northeast end of the structure. An adit, approximately 760 feet in length, driven largely in granodiorite, intersects the bottom of the shaft and was open until recent years. Both shaft and adit are now caved, but the applicant, who examined the adit level in 1942, states that the shaft was vertical, or essentially so, and that it was on the vein at the adit level.

Judging from caved surface workings, the vein was mined along a strike length of about 250 feet, the greater part of this lying to the southwest of the shaft. On the surface, all but the southwesternmost limit of this productive segment had phyllite walls. Vein width is unknown for the most part, but 40 to 50 feet northeast of the shaft, exposures indicate a maximum possible width of not more than 30 inches. On the adit level, the applicant reports stoping for 80 feet on each side of the shaft, with very little drifting beyond the stope faces. Vein width here appears to have been 4 to 6 feet, but grade and wall rock type are unknown. Vein thickness at other points is not known with any certainty, but on one dump near the northeast end of the known vein extent blocks of vein matter suggest a 12-inch width; the amount and type of vein material seen on other dumps does not suggest a markedly thicker vein.

Throughout most of the known length the vein matter consists of white quartz, more or less limonite-stained from oxidized pyrite, containing streaks and scattered crystals of galena. Locally a little copper stain, presumably from minor amounts of tetrahedrite(?) is present; a small amount of barite was noted in some specimens. The only significant change observed along the strike is the occurrence of abundant barite near the northeast limit of the vein.

A second vein structure, parallel in strike to the first, and lying 190 feet to the southeast, is known only from a single exposure in a partially caved prospect working. This structure consists of a slip plane dipping 63° northwest in the middle of a zone 4 feet thick of partially silicified, copper-stained granodiorite. A white quartz pod, stained with copper, borders the slip and attains a thickness of 15 inches, but wedges out near the caved floor of the working about 14 feet below the surface. Nothing remotely approaching ore grade material was noted. This structure, or a similar one, was barren where cut by the adit, according to the applicant.

Galena-bearing vein quartz, referred to by the applicant as the "third vein", is exposed on the dumps of two inaccessible prospect shafts sunk in granodiorite and situated respectively at about 570 and 880 feet southwesterly from the main shaft. These shafts, 380 feet apart along a S. 23° W. bearing, represent the only information concerning this "third vein." No outcrops nor any mineralized quartz float were noted on the line of this structure either between or beyond the prospect shafts. On the unproven assumption that these shafts prospect a single vein, this assumed structure is subparallel to the main vein but not in line with it; the indicated extent of the "third vein" lies south as well as west of the known segment of the main vein. Although the extended trend of the assumed structure lies more than 300 feet northwest of the main vein, there is no overlap of the indicated extents of the veins. It is entirely possible either that the "third vein" dies out and does not extend northeastward to a point opposite the main shaft, or that it is a faulted segment of the main vein rather than a separate structure.

The mineralized quartz of the "third vein" is not distinguishable from that of the main vein; its width apparently is not great, a thickness of 12 inches is suggested from a block on the northeast shaft dump. Here several hundred pounds of better grade mineralized vein material had been hand sorted from perhaps a ton or two of vein quartz. Two samples, judged to contain as much galena as any of the vein quartz seen on the various dumps of the main vein, were taken from this pile. The results are tabulated below:

Samples of Quartz Vein, Prospect Shaft Dump
570 feet S. 68° W. of Queen of the Hills Shaft

Sample No.	Pb (%)	Zn (%)	Au (oz./ton)	Ag (oz./ton)
QOH No. 1*	6.4	0.8	0.15	1.1
QOH No. 2**	3.6	0.9	0.11	0.7

*Grab sample by W. B. Myers of hand-sorted pile of vein material.
**Chip sample by Cyrus Whittier and W. B. Myers, of 12-inch cross section of quartz vein on hand-sorted pile.

Applicant's Proposal

The applicant proposes to reopen the adit to the shaft. From this point, his original plan was to crosscut directly to the presumed extension of the "third vein". It was pointed out to him in the field that the "third vein" might well not extend to a point opposite the shaft. Thereupon he proposed that a better course of action might be to drive southwest along the main vein from the face of the stope drift for as far as the structure appeared promising. At the end of this drift, he proposed crosscutting to the "third vein".

Evaluation of Proposal

At the time of the examination, the applicant had succeeded in opening the adit for a distance of 220 feet. Much of this advance required spiling. Mapping indicated a distance of about 545 feet from the caved face to the bottom of the shaft. Nothing is known about the condition of the adit ahead of the caved face. However, the adit is thought to have been portaled near the point of a fault-bounded salient in the granodiorite-Belt complex. As the working is followed away from this salient, it seems expectable that the ground might become less broken and progress easier.

The targets for exploration, however, do not seem very attractive. The first target is a narrow quartz vein originally mined for gold and silver which nowhere on the surface dumps gives evidence of containing sufficient base metal to be minable. The second, and more favorable target in the eyes of the applicant, is the problematic continuation of a similar quartz vein assumed to extend between two, and only two, widely separated prospect shafts in a covered area. It is possible that this "third vein" continues to the northeast pa t the shaft, and even that it swings over to join the short S. 57° W. segment of the main vein near its northeast limit, to become an element of a braided vein system. There is, however, no positive evidence for this interpretation. Some negative evidence exists beyond the lack of prospect workings, exposures or mineralized float. The east-trending, longest, and latest train of shaft dump from the main shaft is made up of phyllite. Much of this is very fresh, in marked contrast to the rest of the dump. It is suggestive of the possibility that a considerable amount of crosscutting away from the vein, in all probability towards the northwest, has already been attempted on some intermediate level. From study of the dump, it appears that no vein matter was encountered in this prospecting.

As has been stated before, the disposition of the known extent of the main vein and the so-called "third vein" suggests that the latter is nothing more than a faulted segment of the mined structure. A wide range of fault orientations might result in this pattern, including dislocations parallel to the mapped N. 32° W. fault which bounds the complex. Postmineral faulting of sufficient magnitude to accomplish this result has been recognized in the 15-minute quadrangle to the south.

In the writer's view, the probability of finding commercial amounts of base metal ore is not sufficiently high to warrant exploration where the principal target requires such a high percentage of interpretation. This is especially true in the light of the large amount of effort needed to reach the target site. The high transportation costs consequent to the relatively remote location of the claims would require an offsetting relatively high grade of ore which further diminishes the probability of success.

Attachment 1

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

August 27, 1954

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

Re: New application (zinc-lead-copper)
Cyrus Whittier
Queen of the Hills Mining Claim
Beaverhead County, Montana

Dear Mr. Selfridge:

Enclosed are three copies of a map which shows the location of the Queen of the Hills Group, the original of which has been returned to the Operator.

Also enclosed are three copies of a memo on the Queen of the Hills Group. The original of this also has been returned to the Operator.

The map and memo are, of course, to be used in connection with the cited application.

Sincerely,

A. E. Weissenborn

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

Enclosures

cc: USBM (2)
Quinlan

xxxxxxxxxxxxxxxxxx
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Spokane 4, Washington

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Executive Officer, DMEA
Field Team, Region II

Enclosures

cc: USBM (2)
Quinlan

XXXXXXXXXXXXXXXXX
So. 157 Howard Street
Spokane 4, Washington

August 27, 1954

Mr. Cyrus Whittier
1219 East First Street
Butte, Montana

Re: DMEA application (zinc-lead-copper)
Queen of the Hills Mining Claim
Beaverhead County, Montana

Dear Mr. Whittier:

Enclosed are the original copies of the map and memo on the Queen of the Hills mining claim which you recently sent to us.

This is to inform you that copies of the map and memo have been sent to Washington, D. C., to further substantiate your application.

Sincerely yours,

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

Enclosures (2)

cc: DMEA (2)
USBM (2)
Quinlan

xxxxxxxxxxxxxxxxx
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Spokane 4, Washington

August 27, 1954

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Sincerely yours,

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

Enclosures (2)

cc: DMEA (2)
USBM (2)
Quinlan

Memo on Queen of the Hills Group
for Messrs Whitterier & Lemire. Meme details only.

The Vipond district occupies a park or plateau-like region lying about 2000 feet above Wise River, Big Hole River and Canyon Creek, which nearly surround it. It is not a true plateau, for it is hemmed in by higher land in several directions— to the East and South by mountains that rise 1000 feetm or more above the town of Vipond (now extinct); Canyon Creek occupies a narrow and very deep gorgre in these mountains, but has not eroded back far enough to drain the Vipond district.

Its gorge, like that of Trapper Creek, is lined by glacial moraines. South of Vipond a loraine forms a ridge, resting upon and rising 50 to 100 feet above the solid rock on the north side of the gorge.

The first mining claim in the district was located in 1867 by two brothers named Vipond (after which the area has been named).

The Benton Mining and Milling Co. was reported to have been active in 1909.

Some of the geology and ore deposits of the district.

The veins of the area commonly strike North and dip deeply to the West
The ore is in shoots in a gangue of quartz and silicious limestones
The metals or ores present are chiefly lead, silver with a little copper and gold
The materials in the oxidized zone include cerrusite; wulfenite; cerargyrite; native silver;malachite;azurite; and cryeocolla; and in the sulphide zone galena; argentite, pyrargyrite and sphalerite; Silver-copper glance or stromeyerite has been found in the district
The country rock in the northeastern part of the district is a bluish gray Paleozoic limestone. Much of the park is covered with glacial gravel probably derived from the mountains west of Vipond, locally called Sheep Mountain (which lies above the Queen group) Along the the northeastern base and slope of this mountain are the outcrops of slates and limestones which probably belong to the cambrian and which also may include a part of the precambrian Belt series. they are overlain by shales and these by limestones which are probably Cambrian. The northern slope of this mountain is occupied partly by gneiss, which also appears again near the southern base.

"Queen of the Hills mine"

The Queen group lies just south of Sheep Mountain and tunnel adit is at an alt. of 8200 feet in gneiss and schist cut by aplitic dikes. Its ore, unlike most of the ores of the district is valued chiefly for its gold though it also contains native silver, argentite, cerrusite, Galena, pyrity and calcopyrite.

"The vein of the 'RICH HILL' mine strikes East or East-Southeast and dips NW"

About 3 miles NE of Vipond groups of silver bearing veins occur along the s summit of Quartz Mtn.

Newspaper report; "Queen of the Hills Group at the head of Wise River and Canyon Ck. located by Rabdau & Jennings were reported under ~~bond for one year for $75,000 with a substantial cash payment;~~ from the surface to the present bottom of the shaft there has been unbroken ore for a 4 ft. thickness"

New Boarding house will be erected by a crew of surface men and for other surface improvements (1900).

T.F.Hopkins has secured a lease on the Queen of the Hills group and has purchased the Vipond Mill. Mill will be put in order and other machinery and equipment will be added for proper treatment of the ore. Quality of ore has been increasing. (1900)

Joe Rabdau reports that the "Queen" which is operating under lease to Hopkins, McFarland & Chas. W. Clark , that the shaft had reached water and a pump installed.

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

August 30, 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-3465 Cyrus Whittier

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

August 30, 1954
Subject: DMEA-3465
Re: Exploration Assistance
Queen of the Hills

Mr. Cyrus Whittier
1219 East First St.
Butte, Montana

Dear Sir:

The receipt of your application dated August 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-3465 and referred to the Base Metals Division.

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

Sincerely yours,

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

August 24, 1954

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

Re: New application (zinc-lead-copper)
Queen of the Hills Mining Claim
Beaverhead County, Montana

Dear Mr. Selfridge:

Enclosed are 3 copies of MF-103 submitted by Cyrus Whittier, 1219 East First Street, Butte, Montana. One copy is being retained for our files. Also enclosed is a copy of a mining lease between George D. Curtis, Leino Syren and M. R. Cooper, and the applicant. Owner's Consent to Lien has been requested and will be forwarded as soon as possible.

The application is deficient in many respects; geologic justification is sketchy and the map finally submitted at our special request leaves much to be desired. It may simplify things considerably if field men can discuss the proposed project with the applicant in person; therefore, a field examination will be scheduled.

Sincerely yours,

Verne C. Fryklund

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

Enclosure

cc: USBM (2)
Quinlan

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

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Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

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Queen of the Hills Mining Claim
Beaverhead County, Montana

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

enclosure

cc: USBM (2)
Quinlan

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
AUG 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. 3465
Metal or Mineral Lead-Zinc-Cu.
Date Received
Estimated Cost $11,952
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: Cyrus Whittier
1219 East First Street
Butte, 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
Section Nine(9) Township Two(2) South, Range Eleven(11) West of the Montana Meridian Beaverhead County, Montana.

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

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

(*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 attached.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Dillon Beaverhead County, Montana. Queen of the Hills Mining Claim Book 108, Page 69-73; #2 Book 108, Page 74-78; #3 Book 108, Page 113-115.

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. A, B, C, D, E attached.

(*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 Zinc, Lead, Copper.

(*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. Map attached. Also, B, C, D, ~~E, F, G, H~~, Attached.

(*c*) The work will start within ..... days and be completed within 4 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.). A, B, C, D, E, F, G., H. attached.

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

attached

CERTIFICATION

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

Dated August 13, 4, 195..

Cyrus Whittier
(Applicant)

By Cyrus Whittier

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

Cyrus Whittier
1219 East First Street, Butte, Montana

4. (a). This mine was located in the late 1880's to the best of my knowledge. The first claim in the district was located in 1867 by the Vipond Bros. However, these claims are known as the "Queen of the Hills Group". The "Queen Group" lies just south of Sheep Mt. and the adit is at an altitude of 8200 feet in gneiss and schist cut by aplitic dikes.

Its ores were mined from surface for its gold and silver values, to the depth of 185' where it struck the sulphide zone where the lead and zinc ores predominated. At this point sinking was stopped and sometime later the 900' drift was driven to intersect the vein at the bottom of the shaft.

Following is a newspaper report:

"Queen of the Hills Group at the head of Wise River and Canyon Ck. located by Rabdau & Jennings were reported under bond for one year for $75,000 with a substantial cash payment; from surface to the present bottom of the shaft there has been unbroken ore for a 4' thickness."

New boarding house will be erected by a crew of surface men and for other surface improvements (1900).

T. F. Hopkins has secured a lease on the Queen of the Hills Group and has purchased the Vipond Mill. Mill will be put in order and other machinery and equipment will be added for proper treatment of the ore.

Quality of ore has been increasing. (1900)

Joe Rabdau reports that the "Queen" which is operating under lease to Hopkins, McFarland & Chas. W. Clark, that the shaft had reached water and a pump installed.

Since the time of this newspaper report, this mine has been inoperative excepting for assessment work. In 1953, I secured a lease for a period of 5 years with an option for extending it an additional 5 years under the same terms. In 1942, I was in at the bottom of the shaft, at that time the 900' adit was open. The vein had been drifted a short ways, each way from the shaft. I could see the sump, but couldn't sample the bottom of it. I sampled one heading, which looked favorable, however I took a channel sample all the way across and wasn't too careful with it. I have lost the assayer's report, but I remember that the values were chiefly in lead with some silver and gold, but not of shipping grade. This description is of what is known as the main vein, however there are two separate parallel veins. The first one is a white quartz outcrop on surface with strong indications of copper. A shaft was sunk approximately 60' with no further development on it. The third vein parallels the main or center vein approximately 200' farther to the north.

At present, we are re-opening the 900' adit by a spiling operation. For examination purposes, there is outcrop on all three veins and some lead, zinc, silver ore on one of the dumps of the several shafts on the third vein.

(B) Of the past production, I have no data except for newspaper report. As for ore reserves, I know definitely there has been no work below the 185' level of any one of the three veins. (These are definitely veins-not bedding)

(C) Will forward in a few days map furnished me by the owner of the property describing the geological features of the property.

(D) Forest Service Road in fair condition. 20 miles to shipping point. 45 miles to supply point. Residence on property.

(E). Manpower, materials, supplies, equipment, water and power are all available.

#5. (B). Re-opening of 900' adit and then cross-cutting 200' to the third ore lead vein.

Cyrus Whittier
1219 East First Street, Butte, Montana

5 (C) Work was started in the Fall of 1953. We were shut down during the winter. In the Spring of 1954, I engaged Lawrence Lemire of Clarkston, Washington as a working partner. We have worked four months on the re-opening project this year and expect it to take four months more to re-open the adit to the shaft. From which point or near which point, we can cross-cut to the third vein.

(D) The applicant has had approximately 15 years experience underground in various capacities for the A C M, Sunshine Mining Co. and Howe Sound Co.
In addition to 2 years on lead-zinc flotation for the Little Pittsburgh Mine, Kellogg, Idaho and 6 mos. Ball Mill operator for Howe Sound.

6. (A) None.
Estimate of costs:

Compressor rental 4 mos. @ $175.00			
(1st 3 mos. to apply on purchase)			700.00
R-48 Stoper used IR			400.00
50'-1" Air Hose Coupled			37.75
50'-½" Water hose Coupled			26.50
1100'-2" pipe line, used		@.26	286.00
400'-1" pipe line, used		@.13	52.00
Drill Steel			36.00
Receiver			100.00
Submarine			35.00
Powder @ $12.00 a box	70 boxes		840.00
Fuse	m. ft.		13.70
Caps	m.		22.90
Jackhammer used			250.00
Mine Rail	3 Ton @ $110.00		330.00
Carbide	200 # @ .25		50.00

(B) Labor. Estimated Total fo Re-opening of 900' adit and 200' of crosscut.
400 man shifts @ $15.00 — 6000.00

(C) Estimated Engineering and Lab. reports — 500.00
Fuel 1000 gal. @ .33 — 330.00
(Make exclusion of equipment under $50.)

(D) Rental on Compressor $700.(listed once)
Mileage on Service truck estimated at — 300.00

(E) 10 days labor on housing @ $15.00 — 150.00

(F) Questionable-Compressor room and shower

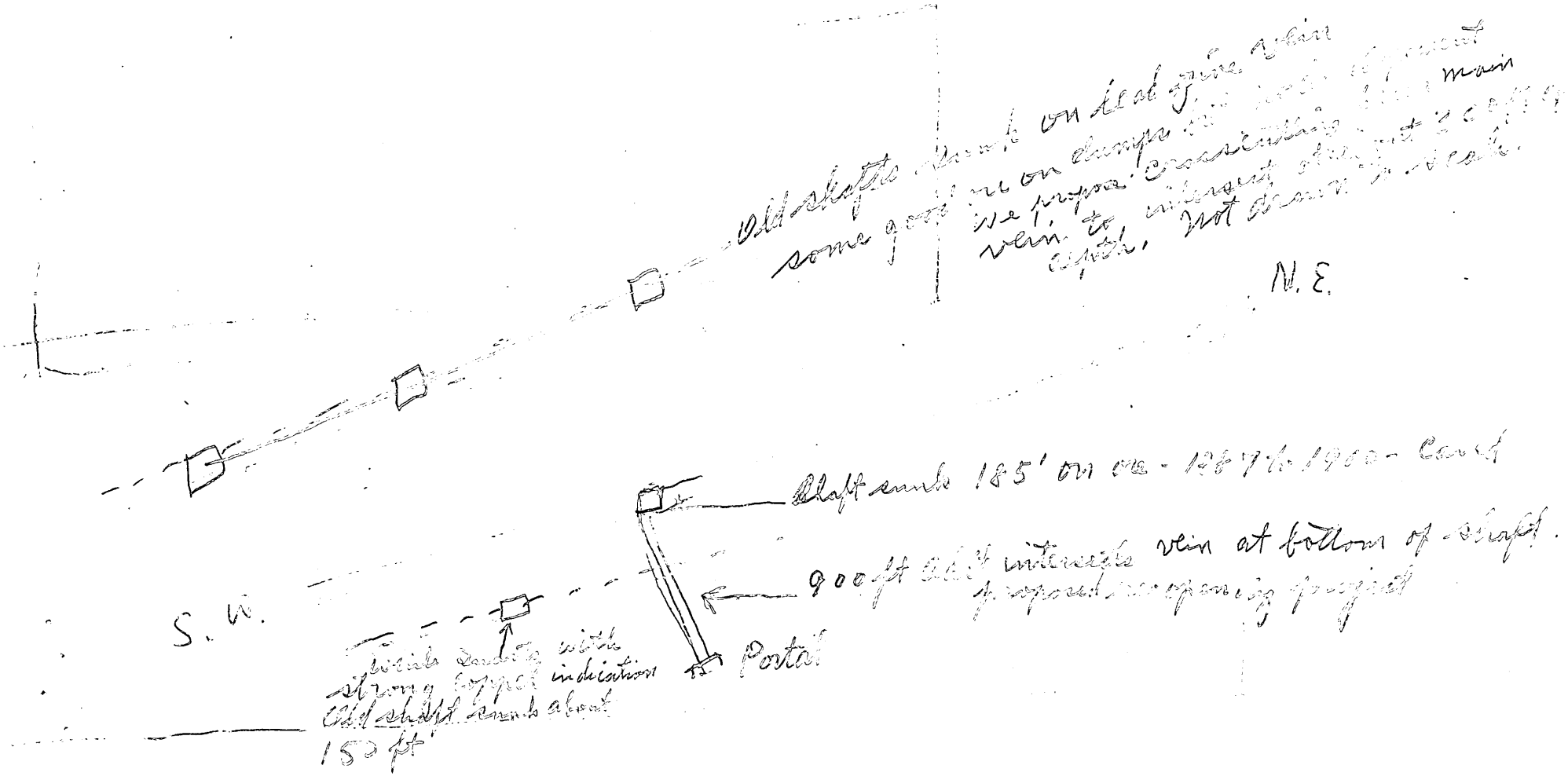
2 pcs. 2x6-14 #1 Con	@ 1.51	3.02
820' 2x4	113.00	92.66
2000 ' # 3 Pine Boards	118.00	236.00
6 Rolls Slatepote	5.90	35 .40
15# 16 D Con Nails	.16	2.40
15# 8 D Con Nails	.16	2.40
2 doors & 2 windows		30.00
Shower and water tank		150.00

(G) Bookeeping and secretarial work @ $1.25 per hr. 512 hrs. — 640.00
(H) Bulldozer work estimated — 300.00 -
Total — $11951.73

Cyrus Whittier
1219 East First Street, Butte, Montana

7 (B)

We have spent slightly over $1000. already for rail, car, tools, transportation and supplies. Labor already amounts to an excess of $1500. and the balance of the work will be done by my partner and me. Engineering, Bookeeping and Secretarial will amount to $1140. of which amount we will furnish the major portion. We will be able to furnish in cash, labor and materials about $7000. of the estimated amount necessary to re-open the old adit and drive 200' of new crosscut to the third vein.



This is not drawn to scale but shows approximately what the [illegible] are. There are 4 claims located at present.

Cyrus Whittier
1219 East First St.
Butte, Montana

(5.B.)

30. Kindly Return

Cyrus Whittier
1219 East First St. Butte, Montana

M I N I N G L E A S E

THIS AGREEMENT, made and entered into this 22nd day of August 1953, by and between George D. Curtis, Leino Syren and M. R. Cooper, all of Butte, Montana parties of the first part, and Cyrus Whittier of Butte, Montana, party of the second part;

WITNESSETH: That for and in consideration of the sum of One ($1.00) Dollar, lawful money of the United States, in hand paid, the receipt whereof is hereby acknowledged, and for other good and valuable considerations and the performance of the agreements hereinafter specified to be performed by the party of the second part, the parties of the first part have leased, demised and let, and by these presents do lease, demise and let unto the said party of the second part, his heirs and assigns, the following described mining claim or claims, situated in the Upper Vipond Park, unorganized, mining district, County of Beaverhead, State of Montana, to-wit:

Queen of the Hills Quartz Lode Mining Claim (Recorded)

Queen of the Hills No. 2. Quartz Lode Mining Claim (Recorded)

Queen of the Hills No. 3. Quartz Lode Mining Claim (Recorded)

Queen of the Hills Mill Site (Recorded)

Queen of the Hills No. 4. Quartz Lode Mining Claim (Unrecorded)

Queen of the Hills No. 5. Quartz Lode Mining Claim (Unrecorded)

and all situate in approximately Section Nine (9) Township Two (2) South, Range Eleven (11) West of the Montana Meridian Beaverhead County, Montana.

TO HAVE AND TO HOLD, all and singular, the property rights hereinbefore mentioned, for a period of Five (5) years from and after the date hereof.

Said party of the second part covenants and agrees with the party of the first part as follows:

THAT he will begin mining, or exploratory operations on said premises on or before October 1st, 1953 and continuously thereafter during the existence of this lease, will do and perform or cause to be done or performed the necessary labor necessary to be done for the use and benefit of the aforesaid mentioned mining claims, perform at least 200 man shifts of labor during each calendar year.

THAT all work done upon said premises will be performed in a good workmanlike and minerlike manner and in accordance with good mining practice and that all new workings will be safely and properly timbered where required and all old workings requiring timbering to be safely worked hereunder will be properly timbered and cared for.

THAT he will, at his own expense, apply for and obtain Industrial Accident Insurance covering indemnity in the event of injury to any person employed in or about said premises.

THAT he will, at his own expense, apply for and pay for all Federal Social Security taxes, and all State Unemployment Compensation (or Pay Roll) taxes, which may be levied during the term of this lease.

THAT he will not do, or permit to be done, anything which will in any manner subject the parties of the first part to any liability as the result of mining and/or milling operations carried on hereunder; and that he will not suffer, nor permit, the placing of any leins against said premises as the result of failure on his part to pay for all labor expended and equipment or materials used upon said premises.

THAT he will cause to be posted upon said premises a notice to the effect that he is solely responsible for the operations of said premises and responsible for all operations carried on therein.

TO PERMIT the said parties of the first part, or their authorized agent or agents, at any and all reasonable times and/or hours, to enter upon said premises and inspect the same, and for that purpose hereby grants them the right to use any and all drifts, tunnels, shafts or passageways, and also any and all equipment upon said premises

necessary for said purpose, provided however that such inspections and use of equipment will not interfere with the regular working of the property.

IT IS FURTHER AGREED by and between the parties hereto, that any and all buildings which may be constructed during the term of this lease, shall at the expiration of this lease remain intact and become the property of the parties of the first part.

THAT any mining equipment as may be purchased and used in mining or milling on the property and placed in operation by the lessee during the term of this lease sahll remain the property of the lessee and may be removed by him at the termination of this lease.

THAT any financing which may be done by the lessee shall be his own responsibility and no financial obligation or liability of any kind to the lessors.

THAT such timber as is available and suitable for mining purposes as now on the claims may be used for mining purposes and it is expressly agreed that timber from the claims shall be used for no other purpose.

THAT all assessment work required to be done by both the Federal Government and the State Government shall be done by the party of the second part and duly recorded as required by law on any and all claims covered by this lease and/or subsequently located as hereinafter provided.

THAT the terms and conditions of this lease will apply to any/or all claims subsequently located in approximate Sect 9-T23, R11W.

THAT any and all claims subsequently located in connection with this original group of claims shall be located in the names of the parties of the first part and so recorded in the proper recorders office.

IT IS FURTHER AGREED by the parties hereto that the following scale of royalties shall govern;

Ten (10%) percent on all ores which net up to Fifty ($50) dollars per ton, (excepting development ores which are subject to the terms hereinafter provided.

Fifteen (15%) percent on all ores which net between Fifty ($50.) dollars and One Hundred ($100.) dollars per ton.

Twenty five (25%) percent on all ores which net between One Hundred ($100.) dollars and Three Hundred ($300) dollars per ton.

And upon all ores which net over Three Hundred ($300.) dollars per ton the royalty shall not exceed Fifty (50%) percent at any time.

A royalty of Ten (10%) percent on all net returns derived from development work with this exception, does not apply to ~~scrap~~ waste or winge and that there shall be no royalty paid unless the net smelter returns are in excess of the actual cost of mining and shipping such ores and in this connection a complete set of books shall be kept showing such costs of development operation with smelter returns and are to be available to the parties of the first part and any net returns above such costs are subject to the Ten (10%) percent above noted. Notarized copy in file initialed

It is further agreed by the parties hereto that in case that a mill or concentrator be built and concentrates are shipped that the clauses covering royalties are to be subject to a revision and/or adjustment, which adjustment or revision shall be made prior to any such construction. That the party of the second part shall cause to be paid by the mill or smelter to which ore has been shipped for refining into the Metals Bank & Trust Co. Bank at Butte, Montana for the use and benefit and to the credit of the parties of the first part, the royalties hereinbefore set out, based upon the net mill or smelter returns of the ores, mineral or non-mineral substances or products mined hereunder.

By "net mill or smelter returns" is meant the amount received for such ores after deducting therefrom the cost of milling, smelting, and freight or haulage charges from the mine to the mill or smelter. Provided however, that if the mill or smelter, or other refining or treating plant to which the ores, mineral, non-mineral, substances

or products of said claims are transmitted, is on said claims, or any part thereof, or, is in the immediate vicinity of said claims (that is to say, within ten (10) miles of said claims by straight line measurement) and is owned or operated in whole or in part by the party of the second part, then, and in such event, carriage charges of all kinds shall not be deducted in arriving at the net mill or smelter returns in computing royalty to be allowed the party of the first part hereunder.

IT IS HEREBY OPTIONALLY AGREED by the parties hereto that an extension of the term of this lease for an additional five (5) years shall be granted upon the request in writing, of the party of the second part and it is further agreed that at any time during the life of this lease or its extension and it is in good standing, that if the party of the second part desires to make a purchase of the claims covered by this agreement that the parties of the first part will convey the title to this group of claims by means hereinafter mentioned, for the sum of Seventy five Thousand ($75,000.) dollars and upon terms which may be agreed upon by the parties hereto, except however that the down payment and the least annual payment shall not be less than Fifteen Thousand ($15,000) dollars annually until the purchase price shall have been made in full. In such case a deed to the property is to be placed in escrow until such final payment has been made at which time the escrow agent shall deliver deed to the party of the second part.

THAT failure on the part of the party of the second part to abide by his covenants and agreements herein contained shall confer upon the parties of the first part the right, at their election, to declare this agreement forfeited, and, within sixty (60) days after the service of written notice of their intention to so do, upon the party of the second part, to enter upon and take possession of the herein demised premises and personal property.

IT IS FURTHER AGREED by and between the parties hereto that the party of the second part, in addition to the payment of the royalties herein stipulated, shall pay before the same becomes delinquent all taxes and assessments which, during the term hereof, may be lawfully levied or assessed against said mining claims and premises, upon all structures and improvements, equipment and other property erected, constructed, installed and/or used by the party of the second part in connection with the exercise of the rights herein granted and shall also pay when due all occupation, license and output taxes upon all ores or minerals extracted from said premises or resulting or growing out of the mining operations of the party of the second part upon said premises. The party of the second part, upon the payment of such taxes and/or assessments, shall promptly furnish the parties of the first part with satisfactory evidence of such payment.

THAT any failure to abide by the terms hereof, on the part of the party of the second part if caused by strikes, floods, Acts of God, fires or any other means beyond the control of the party of the second part, shall not be grounds for declaring a forfeiture of this agreement.

THAT the covenants, agreements and conditions of this agreement shall be a continuing one, and any forbearance of the parties of the first part to enforce a forfeiture on the occasion of one or more breaches thereof shall not be construed as a waiver of the right to enforce such forfeiture for any subsequent breach.

THAT THIS IS THE BOND of this agreement, and all the terms and conditions or provisions of this agreement shall extend to and be binding upon the heirs, legal representatives, successors and assigns of the respective parties hereto subject to the condition that the lease may not be assigned without the consent of the parties of the first part.

IN WITNESS THEREOF, the said parties hereto have set their hands and seals to this instrument consisting of four pages, the day and year first above written.

Made in quadruplicate.

George D. Curtis.

Reine Byren

Party of the second part.

Cyrus Whittier

Party of the Second Part.

State of Montana

SS.

County of Silver Bow

On this 22nd day of August A. D. 1953, before me the undersigned, A Notary Public duly commissioned and residing at Butte, Montana personally appeared George D. Curtis, Laino Syren and M. E. Cooper; Parties of the First Part and Cyrus Whittier, Party of the Second Part, to me known to be the identical persons whose names are affixed to the above and foregoing as the identical persons whose names are affixed to the above and foregoing instrument consisting of three numbered pages preceding this one and acknowledged it to be their voluntary act and deed.

Witness my hand and official seal the day and year last above written.

Joe B. Zupan

A Notary Public in and for the State of Montana residing at Butte, Montana.

My commission expires Nov. 4, 1955

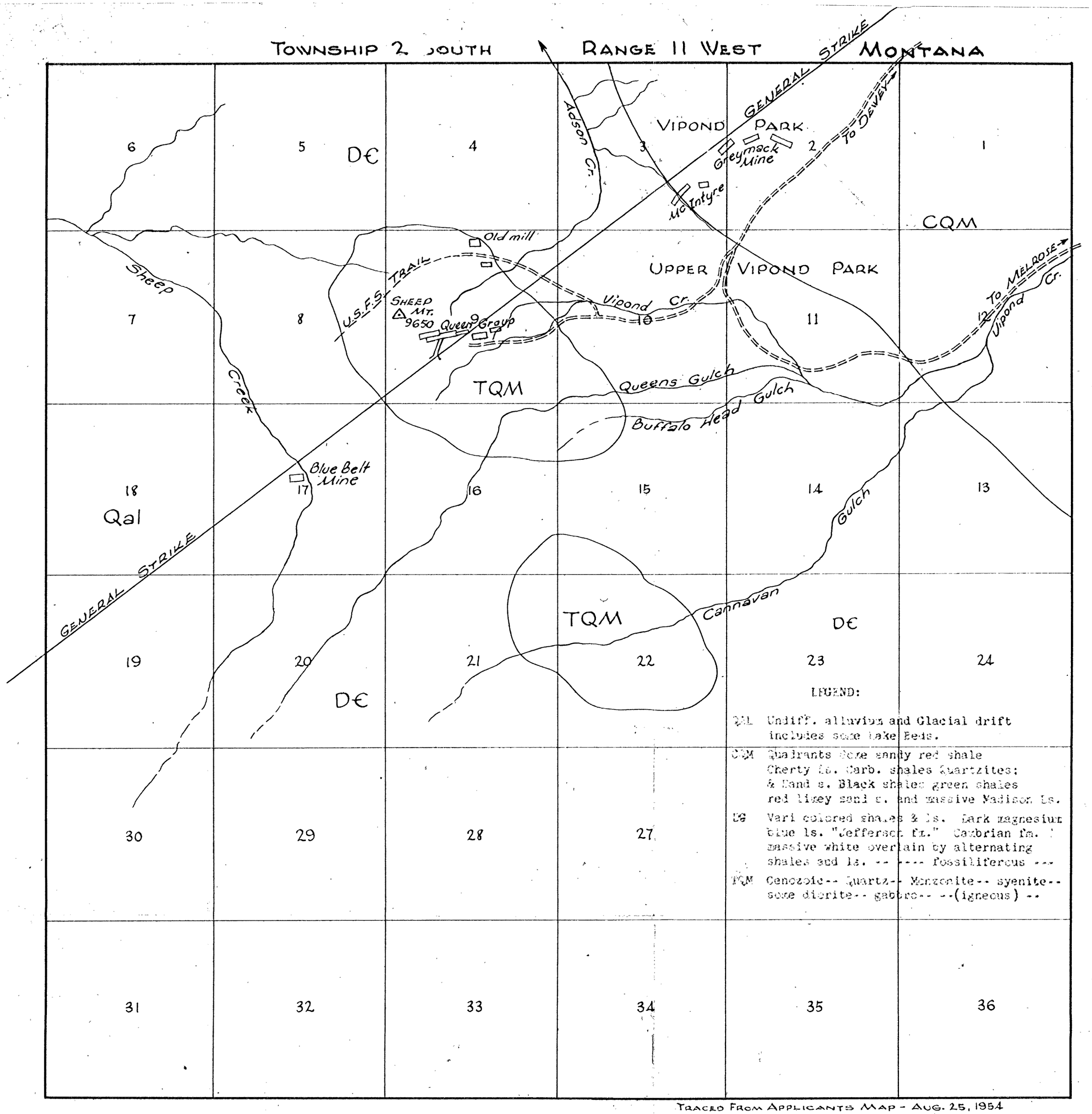
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

P. O. Box 560
Juneau, Alaska

VIA AIR MAIL

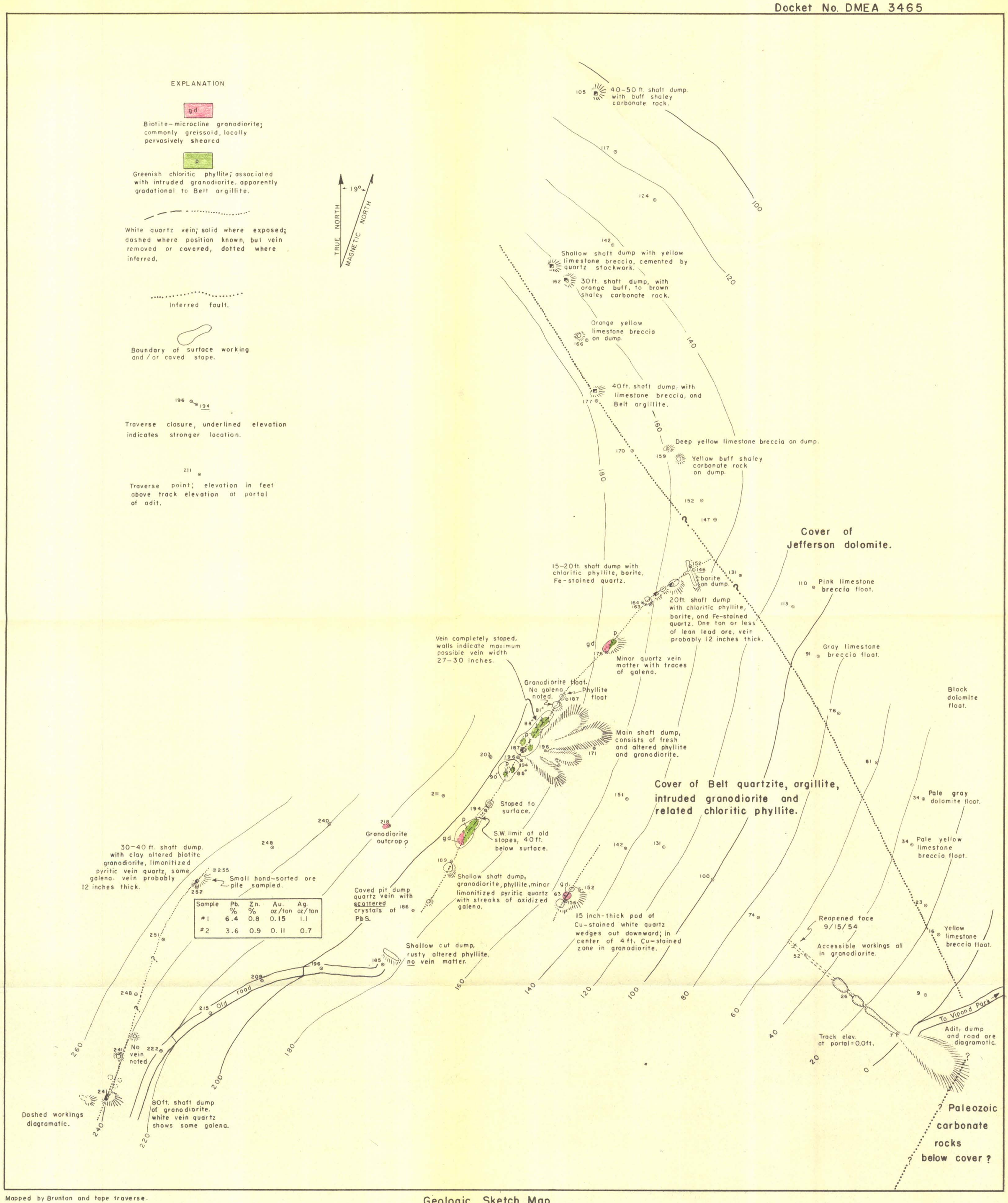
U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.



TRACED FROM APPLICANTS MAP - AUG. 25, 1954

MAP SHOWING LOCATION OF QUEEN OF THE HILLS GROUP

BEAVERHEAD COUNTY, MONT.



Sample	Pb. %	Zn. %	Au. oz/ton	Ag. oz/ton
#1	6.4	0.8	0.15	1.1
#2	3.6	0.9	0.11	0.7

Mapped by Brunton and tape traverse.
W.B. Myers and Cyrus Whittier

Geologic Sketch Map
Of

THE QUEEN OF THE HILLS GROUP

Beaverhead County, Montana. SW/4 10, T.2 S. R.11W.)

0 100 200 300 FEET

September 15, 1954

Sketch contour interval 20 feet