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DMA Docket No. 3808

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AUG 29 1955

Nevada Scheelite Corporation
430 South Maine Street
Fallon, Nevada

Re: Docket No. DMEA 3006 - Mercury
Glass Buttes Prospect
Lake County, Oregon

Gentlemen:

Your application for aid for an exploration project and other data available to us in Washington relative to the above property have been carefully 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 our information indicates that although mercury mineralization occurs on the property, 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. Such denial, however, is made without prejudice. In the event further work on your part discloses new and more favorable evidence of ore deposition on the property, we shall be pleased to consider a new application, amply supported by geological mapping, sampling, and assaying.

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

SPH/fce 8-22-55
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG.I - NW Dist.
H. M. Meyer, USBM
T. H. Killsgaard, USGS

Sincerely yours,

C. O. Mittendorf

Administrator

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $20,000.
Docket No. DMEA No. 3808 - Mercury
Nevada Scheelite Corporation
Glass Buttes Prospect
Lake County, Oregon

The denial of the subject application is recommended by this Division based on the following information.

1. The applicant, Nevada Scheelite Corporation, 430 South Maine Street, Fallon, Nevada, requested exploration assistance in the amount of $20,000 for churn drilling, drifting and cross-cutting on and in the Glass Buttes mercury prospect.

2. The applicant controls, by sub-lease from Philip M. McKenna, who holds by lease from owners, E. W. Pringle, Elizabeth Pringle, Harold E. Olsson and Vida Olsson, the following unpatented mining claims situated in Sections 3 and 34, Townships 23 and 24 South, Range 23 East, in the Glass Buttes Mining District, Lake County, Oregon:

Vida 1; Vida 2; Beth 3; Beth 4; Harold 5; Harold 6; Jack 7; Bill 8; Bill 9; Harold 10; Bill 11; Harold 12; Vida 13; Beth 14; Bill 15; Bill 16; Harold 17; Harold 18; Bill 19; Beth 20; Vida 21.

3. The proposed program is to explore the property by approximately 2,000 feet of churn drilling from the surface and 125 feet of drifting, westerly from a new 30 foot level to be cut in the shaft, with 75 feet of crosscutting from the new drift.

4. Although scattered mineralization with mercury is found over the area proposed to be explored, various attempts, over a period of years, to find commercial mercury ore bodies have not been successful. The only production reported from the property is a 50 ton test lot which was processed in a small custom furnace.

5. The Field Team concludes that there is little probability of making a significant discovery, and recommends denial. The Commodity Divisions of the Geological Survey and the Bureau of Mines concur in this recommendation.

6. If the applicant, by further trenching and prospecting, discloses favorable indications for ore, a new application for exploration assistance would be in order.

T. L. Chapman, Acting Chief
Iron and Ferro-Alloys Division

SPHOLT/fcc
8-22-55
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.

400

AUG - 8 1955

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

Re: Docket No. DMEA 3801 - Mercury
Nevada Scheelite Corporation
Glass Buttes Prospect
Lake County, Oregon

Dear Mr. Weissenborn:

We have reviewed the Field Team's letter of July 14, 1955, and the enclosed report of Willard F. Puffett, Geologist, Geological Survey, dated June 14, 1955, covering the above referenced property.

From Mr. Puffett's report we note the following:

Page 2 - Recommendations. "It is recommended that this application be denied because of the inadequacy of the proposed program. Whether there is a suitable target in the area or not is not known, and it does not seem to be up to the Field Team to do the extensive mapping needed to determine whether a project is feasible."

Page 9 - Last paragraph. "Undoubtedly the Glass Buttes property is worthy of additional exploration. The applicant reports that he has spent $30,000.00 this spring in bulldozing and driving underground workings. Although he has retained the services of at least one and perhaps two engineers, it is disconcerting to note that most of the trenching has been parallel to the strike of the mineralized breccia zone. A few short trenches at right angles to the strike of the zone would have obtained more information regarding its extension. Also, the inadequacy of the maps and other information submitted with the application leads one to believe that despite the fact that the work was supervised by apparently competent personnel only scant useful information has been obtained, and much of the work could have been efficiently planned if more detailed geologic information had been recorded."

As the property apparently has some merit and it is possible that minable ore bodies of strategic importance may be developed, would it not be advisable to suggest to the applicant that he send in a new application with Stage 1 set up for cross-trenching and geological mapping.

Stage II would be dependent on the results obtained from Stage 1. Please send us your suggestions on the subject and comment on the probable attitude of the applicant. toward such a program.

Sincerely yours,

W. S. Martin,

ACTING Chairman, Operating Committee

APPROVED:

/s/ Robert W. Geehan

Member, Bureau of Mines

/s/ N. E. Nelson

Member, Geological Survey

TLCHAPMAN:fee
8-3-55
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG. I - NM DIST.
H. M. Mayer, USBM
T. H. Kiilsgaard, USGS

400

RECEIVED
AUG 11 1955

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

August 11, 1955

Re: DMEA-3808
(Mercury)
Nevada Sheelite Corp.
Glass Buttes Prospect,
Lake County, Oregon

Memorandum

Copy retained 400

To: W. S. Martin, DMEA

From: Acting Chief,
Branch of Base Metals

Subject: Review of application and Field Team report

I have reviewed the application, the memorandum report by William P. Puffett (USGS), and the recommendations for denial made by the Field Team, and concur with the latter that the applicant's proposal is not wholly sound, could be improved, and should be denied in its present form.

In reviewing the material, I conclude on the basis of USGS Bulletin 931-B and Mr. Puffett's report that mercury mineralization on the Glass Buttes prospect is extensive, that ore controls are but partially understood, and that the area is inadequately prospected. The mercury analyses while low are definitely of interest at a time such as this when mercury is selling in excess of $3 a pound.

Although the applicant's present exploration program is not wholly sound it would appear that it could be modified to make a very acceptable program consisting of surface trenching along the strike of the structure and normal to it, and of drilling to test at depth. The relative advantages and disadvantages of churn drilling versus diamond drilling should be carefully weighed should the proposal be amended to make it acceptable. I would note that if the structure dips no more than 60 to 65 degrees there are many advantages to the large sample and normally lower costs of churn drilling, particularly when water is 2 miles distant.

Helena M. Meyer

Helena M. Meyer

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

400

August 15, 1955

Memorandum

To: The Files

From: George C. Selfridge, Chairman
Operating Committee

Subject: Docket DMEA-3808 (Mercury), Nevada Scheelite Corporation, Glass Buttes Prospect, Lake County, Oregon.

Mr. Fryklund, acting for Mr. Weisenborn, Executive Officer, DMEA Field Team, Region I, Northwest District, telephoned the writer today with regard to the Operating Committee's letter dated August 8, 1955, and the examination report on the property. As the writer had no background on either, he noted Mr. Fryklund's comments and advised him that it would not be necessary for the Region to act further until it had heard from Washington.

Mr. Fryklund explained that the Field Team had considerably toned down Mr. Puffett's criticism of the applicant's technical representative. He explained that the man was a metallurgist with little or no mapping experience, and was not considered as a competent exploration engineer. The Region believed that, while the property seemingly had some merit, it was dubious that the government would receive reliable results if a Stage I program of trenching and mapping were participated in by the government because of the inexperience of the applicant's representative. The property is two days' distant from Spokane and to be sure of the results the Region would almost have to station a man at the property, a thing obviously it could not do. Under the circumstances the Region felt that further trenching and/or prospecting should be done by the company, and when favorable indications were disclosed then the company should resubmit its application. The writer informed Mr. Fryklund he would look into the matter at once and advise the Region with regard to further action.

George C. Selfridge

George C. Selfridge

GCS/hb (8/15/55)
Copy to: Docket
Admr. R. File
Mr. Selfridge
Mr. Johnson
Mr. Martin ✓

400

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

RECEIVED
JUL 19 1955

July 14, 1955

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

WSM

Re: Docket No. DMA-3803 (mercury)
Nevada Scheelite Corporation
Glass Buttes Prospect
Lake County, Oregon

Dear Mr. Selfridge:

Enclosed are four copies of a memorandum by Willard P. Puffett, Geological Survey, recommending denial of the Nevada Scheelite Corporation application.

We are in agreement with Puffett that the plan of exploration proposed by the company is not a feasible one. We are also in agreement with him that there might possibly be a project in this area but the work done by the company to date has not been sufficient to define just what this project might be, even though the company has spent a considerable sum of money. Unfortunately, as Puffett points out, the work did not cross the possible ore-bearing structures and did not reveal very much. To work out a suitable project would require a rather extensive program of geologic mapping, and we feel that it is the responsibility of the Nevada Scheelite Corporation rather than of DMEA to do the necessary work and come up with an adequate proposal.

For these reasons, the Field Team concurs with Puffett and recommends denial of this application. We think, however, that the denial should be rather carefully worded so as to indicate to them that if more work is done and a more appropriate project submitted, the proposal could be resubmitted.

By Field Team, Reg. I, NW District

Wing G. Agnew, Acting Exec. Officer
U. S. Bureau of Mines

Verne C. Fryklund, Jr., Member
U. S. Geological Survey

Enclosure
cc: DSBM (2)
DGS (SPO)

UNITED STATES
Department of the Interior
Geological Survey
157 So. Howard Street
Spokane 4, Washington

RECEIVED
JUL 19 1955

June 14, 1955

Memorandum

To: DMEA Field Team, Region I, Northwest District

From: Willard P. Puffett, Geologist, Geological Survey

Subject: Docket No. DMEA-3808 (mercury), Application examination report, Nevada Scheelite Corporation, Glass Buttes prospect, Lake County, Oregon

APPLICANT
Nevada Scheelite Corporation, a Nevada Corporation
430 South Maine Street
Fallon, Nevada

SUMMARY

Mercury minerals, mainly cinnabar with minor amounts of mercury chloride, have been found in an area near Glass Buttes, Oregon, that measures about 1 mile in a north-south direction, and is about a third of a mile wide. The mercury minerals are apparently confined to zones within opalized and somewhat argillized rhyolite which has been brecciated. In general the cinnabar forms a very low percentage of the rock, averaging less than 5 pounds of mercury per ton.

Although cinnabar has been found at different localities over a large area, only one occurrence has been sufficiently explored to determine the apparent controls on its location. This occurrence has been explored by a few surface trenches and 862 feet of adit, from which have been driven a vertical winze about 50 feet deep and a raise 105 feet long to the surface. The underground work has exposed a breccia zone, ranging from 5 to 30 feet wide, for 270 feet. This breccia zone strikes about N. 65° W. and dips 55°-85° NE. Numerous narrower breccia zones occurring in the hanging wall area of the main breccia zone are exposed within the first 130 feet of the adit.

With the exception of two small remnants of glassy rhyolite, the underground workings have been driven through white to light buff "opalite" that has been generally somewhat argillized. The flow banding strikes in a general east-west direction and dips flatly to the north southwest of the main breccia zone, and flatly to the south northeast of the main breccia zone.

The cinnabar has formed as fracture fillings and as disseminations within the "opalite" in the breccia zones. Faint wisps of cinnabar "paint" line fractures at random locations not definitely related to any major fracture zone. Within the main breccia zone, the applicant reports mine car and channel samples that range from 1 to 9 pounds of mercury per ton on the adit level and from 1 to 14 pounds of mercury per ton in the raise. In the trench near the collar of the raise, mine car samples averaged 7 pounds of mercury per ton from an area measuring 8 feet wide and 45 feet long. In general it appears that the higher grade rock has been found near the surface. The winze from the adit level has not been completely rehabilitated, but it is known that the cinnabar persists to at least 20 feet below the level. Although the cinnabar occurs within a broad definite zone, the higher grade samples are quite erratic in distribution, and there appears to be no location within the zone where one can expect to find a definitely higher grade "shoot."

The applicant desires to test for the downward extension of the breccia zone by churn drilling. The churn drill holes will be placed at definite intervals along the strike and northeast of the main breccia zone. The churn drill holes will, of necessity, be vertical, and as the breccia zone has an average dip of about 60°, the intersection between the holes and the down-dip projection of the breccia zone will be at too small an angle to furnish satisfactory results for interpretative purposes; if the dip of the breccia zone steepens somewhat the drill holes might possibly miss it entirely. The applicant also proposes to drive a sublevel at a depth of only 30 feet below the middle trench. This is definitely in the nature of development.

The applicant is apparently financially able to carry out his part of the proposed program, but the exploratory work done so far at the property has been very poorly planned, and little useful information has been gained.

RECOMMENDATIONS

It is recommended that this application be denied because of the inadequacy of the proposed program. Whether there is a suitable target in the area or not is not known, and it does not seem to be up to the Field Team to do the extensive mapping needed to determine whether a project is feasible.

INTRODUCTION

The Glass Buttes property was examined on May 17 and 18, 1955, for DMEA by Willard P. Puffett and Donald F. Kellum, geologists, Geological Survey. Mr. John Gomes, exploration engineer for the applicant, accompanied the examiners to the property and furnished the examiners with all available information he had concerning the property. The information submitted with the application was relatively meager,

consisting mainly of a generalized outline map of the underground workings on which assay data were plotted plus a copy of a report and map of the area which had appeared in a U. S. Geological Survey Bulletin.

Mr. Gomes furnished very little new material, especially in the form of maps; consequently, it was necessary to make a much more accurate map of the outline of the underground workings and the nearby trenches and to map the details of the geology in both trenches and the underground workings. The trenches from which some production had been obtained contained much broken rock and dump material which obscured most of the bedrock exposures. No accurate map or other record had been kept of this work during the time it was being performed.

About 4 hours were spent in general reconnaissance of the area and 11 hours were spent in mapping the workings. The accompanying map (see plate 1) is the result of this work and shows the geology exposed in three trenches and the main adit. No samples were taken for assay purposes as it was believed that the assay information submitted by the applicant is fairly reliable and is sufficient on which to base an opinion regarding the mercury content of the mineralized areas.

LOCATION AND ACCESSIBILITY

The Glass Buttes property lies near the southeast end of a low range of hills trending in a general northwest direction, known as the Glass Buttes, in northeast Lake County, Oregon. The highest portion of this range reaches an altitude of about 4,900 feet, whereas the portal of the adit is approximately 4,590 feet. Although the area is quite hilly, the slopes are relatively gentle, there are no canyons, and abundant sagebrush with only an occasional small juniper grows on the thin mantle of soil. No water was encountered in any of the underground workings. The nearest available water supply for the camp and mining purposes is from a well in the valley about 2 miles north of the mine. It is reported that this well has been sunk to a depth of about 600 feet and apparently the water supply is adequate.

An unsurfaced road, traversable by passenger cars in dry weather, leads northward for about 3 miles from the mine to U. S. Highway 20, at a point about a quarter of a mile west of the 82 milepost east of Bend, Oregon.

PROPERTY

The property comprises 21 unpatented claims, which according to the application are listed on various pages of books 6 and 7 at the courthouse of Lake County, Lakeview, Oregon. The claims are

owned by E. W. Pringle and Harold Olsson of Ronan, Montana, and have been assigned to Philip M. McKenna, Greenburg, Pennsylvania. Mr. McKenna, in turn, has assigned his lease to Nevada Scheelite Corporation, Rawhide, Mineral County, Nevada, the present applicant. Copies of the legal documentation of the property transfers were submitted with the application.

The applicant submitted a map of his claims with the application. This map is not being reproduced for this report. However, the main adit, near which the applicant has proposed his exploration, has its portal near the east-central part of the Vida 1 claim.

The occurrence of cinnabar at Glass Buttes has been known for more than 20 years. Mr. Charles E. Miller of Bend, Oregon, located 48 claims in the area and presumably he excavated the score of prospect pits, plus two shafts and three adits on the property. During the summer of 1954, Mr. Pringle of Ronan, Montana, visited the area and found that assessment work had not been filed in the county courthouse and apparently the ground was open. Therefore he relocated 21 claims and subsequently leased the property to the present applicant. During the past winter several bulldozer trenches, and some underground work, including drifting and driving a raise from the drift to one of the trenches, were completed. In the spring of 1955, 50 tons of rock sorted from material taken from the underground workings and the trenches were furnaced in the Cottrell furnace at the Platner mine, Crook County, Oregon. The applicant reports the head sample of this material assayed 10 pounds of mercury per ton, although the recovery averaged much less, due to the lack of an adequate condensor system on the Cottrell furnace. Other than this furnacing of 50 tons, there is no record of any production from the property.

At the portal of the main adit a small shed has been erected which was used to protect the compressor. The camp consists of a cookhouse, a small assay office, and a bunkhouse. All mining equipment had been removed from the property at the time of the examination.

The main underground workings consist of an adit with 862 feet of drifts and crosscuts, a winze, reported to be nearly 50 feet deep at a point 175 feet inward from the portal, and an inclined raise, 105 feet long, driven to the surface from near the west end of the adit. The winze had been filled with debris and at the time of the examination had been cleared to a depth of 24 feet; it was not examined, however, as there were no ladders in it.

Two vertical shafts have been sunk on the hillslope a few hundred feet north of the portal of the adit. One shaft is about 60 feet deep and the other is less than 30 feet deep. These shafts appeared to be open to the bottom, but were not inspected as it was not certain how sound the timbers were.

Near the south end of the property, about 4,500 feet south of the adit, are two more adits. These adits are well timbered and are accessible for examination. Aside from the underground workings, there are many prospect pits and bulldozer trenches dotting the hillsides.

COMPETENCY OF THE APPLICANT

The Nevada Scheelite Corporation is a wholly owned subsidiary of Kennametal, Inc., Latrobe, Pennsylvania. This corporation is currently operating a tungsten property in Nevada, and apparently has a successful operation. There seems little doubt that the applicant is financially competent to participate in a DMEA exploration project for mercury ore.

The applicant has completed a reported $30,000 worth of exploration on the Glass Buttes property this spring. Presumably this work was supervised by relatively competent engineers, but much of the work, especially the trenching, could have been much more wisely planned, as nearly all the trenches have been excavated along lines parallel to the strike of the mineralized breccia zones; a series of short trenches across the zones would have given much more information. Mr. John Gowes, the engineer for the applicant, who accompanied the DMEA examiners, is a metallurgical engineer, and in this field there is no occasion to question his competence. Inspection of his maps of the workings and the complete lack of geologic detail, however, suggest that his understanding or appreciation of adequately recording the information obtained in trenches or in underground workings could be much improved. It is probably partly because of this that the relatively unsatisfactory exploration proposal has been outlined by the applicant.

GEOLOGY

Mercury minerals, mainly cinnabar with only minor amounts of mercury chlorides, have been deposited at the Glass Buttes property as fracture fillings and fine-grained disseminations in opalized rhyolite which locally has been moderately argillized. In numerous prospect pits, bulldozer trenches, two shafts, and three adits, it has been found that the higher concentrations of cinnabar have been localized in well-defined breccia zones which trend northwesterly and dip steeply to the northeast.

According to Waters (Waters, Aaron, A structural and petrographic study of the Glass Buttes, Lake County, Oregon: Jour. Geol., v. 35, p. 441-452, 1927), the acidic volcanic rocks represent an intermediate volcanic flow about 400 feet thick between two groups of basalt flows. These flows have been arched into an anticline forming the topographic prominence known as Glass Buttes. The anticline has been broken by a complicated system of normal faults, and the top of the anticlinal arch has been dropped into a graben, forming a valley in the central part of the Buttes. Many smaller transverse grabens intersect the main graben. Waters' paper did not mention the cinnabar present. Ross visited the Glass Buttes property in 1940 and briefly described the geology of the area with respect to the occurrences of cinnabar (Ross, C. P., Some quicksilver prospects in adjacent parts of Nevada, California, and Oregon: U. S. Geol. Survey Bull. 931-B, p. 33-36, 1941). He states that only members of the intermediate group of flows are exposed at the quicksilver property. Here these rocks are lavas consisting almost exclusively of flow-banded glass.

With the exception of two small unopalized remnants of rhyolite the rocks exposed in the trenches and in the adit and connected workings are white to light buff opalized rhyolite that locally has been moderately argillized. Flow banding has been fairly well preserved in the opalized rock. In the two adits near the south end of the property the opalized rhyolite is cut by bands of less altered grey perlite, which apparently has intruded the opalized material.

In general the flow banding of the rhyolite strikes in an east-west direction and dips flatly to the south in the area northeast of the main breccia zone and dips flatly to the north in the area southwest of the main breccia zone. Thus, it appears that the breccia zone follows the trough or bottom of a flat syncline in the graben which occupies the center of the main anticline. This slight syncline along the main breccia zone was observed both on the surface and in the underground workings (see sections on plate 1).

A persistent breccia zone, from 5 to 40 feet thick, is exposed in the middle trench and in the adit (see plate 1). It strikes about N. 65° W. and dips 60° to 85° NE. This breccia zone has also been explored both above and below the adit level. A winze, reportedly 50 feet deep, was sunk from the adit level near the eastern exposure of the zone, and 150 feet northwest of the winze an inclined raise has explored the breccia zone to the surface.

This raise holed out near the central part of the middle trench about 100 feet higher in altitude than the adit level. Coarsely brecciated opalized rhyolite persists both to the southeast

and northwest of the collar of the raise. Broken rock and dump material prohibited a complete examination of the extensions of the zone in the trench, but evidence suggested that the breccia zone persists along strike for at least 100 feet and attains a width of more than 10 feet.

Four narrower breccia zones, ranging from 3 to 10 feet thick, have been crosscut by the adit in an area just to the northeast of the larger breccia zone. These strike about N. 35° W. and dip northeasterly. Some of these are poorly exposed in the north trench. The extensions of these breccia zones to the northwest will project through the area in which the two shafts have been sunk. One small trench and a road have been constructed between the adit and these shafts, but no promising evidence of mercury ore has been exposed. If these narrow breccia zones are projected along strike to the southeast, they will intersect the southeast extension of the main breccia zone at an angle of about 30 degrees nearly 70 feet south of the adit.

Cinnabar occurs rather sporadically throughout the breccia zones, both as fracture fillings and as fine-grained disseminations. Elsewhere only widely scattered wisps of cinnabar have been found along fractures. Even in the breccia zones the cinnabar is extremely fine grained, and as the opalite is relatively transparent a small amount of the ore mineral tends to color the rock so much that it looks higher grade than it actually is. The coarsely brecciated opalized rhyolite of the main breccia zone contains moderate amounts of cinnabar, as is shown in the middle trench, in the adit, and in the raise connecting them. Plate 1 shows assay values as reported by the applicant.

The two adits near the south end of the property have been driven through brecciated zones in opalized rhyolite in which sparse amounts of cinnabar have been deposited. Inasmuch as these two adits are more than 4,000 feet south of the main adit, it is difficult to figure out what relation the cinnabar occurrences in this area have to those occurrences farther to the north until a more complete map of the geology of the area is available.

The DMEA examiners feel, after their brief study of the area, that there are several areas deserving more exploration which have not been touched by the exploration already done. No additional exploration has been completed to test for the northwest extension of the main breccia zone exposed in the adit and part of the middle trench. An inspection of the topographic sheet submitted with the application shows a relatively steep-walled valley to the northwest of the adit which trends in the same direction as the breccia zone. No trenching has been completed along the margins of this valley, but it does seem a reasonable possibility that the

location of the valley has been controlled by a fracture zone that may well represent the northwest extension of the mineralized breccia zone. In addition the projected intersection of the N. 35° W. breccia zones exposed in the adit with the main breccia zone in an area 40 to 80 feet south of the adit is a possible exploration target for an ore shoot.

Grade and ore reserves

The erratic grade of the cinnabar-bearing rock can be seen in plate 1.

The assay values from the mineralized portion of the breccia zone on the adit level range from 1 to 9 pounds, whereas the values in the raise, though erratic, appear to increase in the upper part. The applicant had opened the winze to a depth of 24 feet beneath the sill level of the adit, and his assay data from this part of the mine ranged from 4 to 11 pounds. The applicant reports that in the area to the west of the trench some production has been obtained, car samples from an area measuring 8 feet by 45 feet averaging 7 pounds of mercury per ton. By far the highest grade appearing rock is at the collar of the raise, and assay data indicate that this material contains from 9 to 14 pounds of mercury per ton.

An arithmetical average of all the assays (car, channel, and miscellaneous samples, except one of selected material) submitted by the applicant gives a grade of 4 pounds to the ton. This figure is used in the calculation of ore reserves given below.

An inspection of plate 1 shows that the mineralized portion of the breccia zone in the adit is about 270 feet long and averages 10 feet thick, assuming the mineralization is persistent between the winze and the raise, and the mineralized portion in the middle trench is about 100 feet long and averages 10 feet thick. The following rough calculation of tonnage can then be made, assuming a tonnage factor of 13 cubic feet per ton.

$$\frac{270+100}{2} \times 120 \times 10 \times \frac{1}{13} = 17{,}000 \text{ tons}$$

If it is assumed that the average mercury content of the above tonnage is 4 pounds of mercury per ton, then the total mercury content of such a block of ground is about 900 flasks.

Actually, the evidence exposed at the property suggests that the above figure is most optimistic, and it seems probable that the potential of the property in the area between the adit and the middle trench is only one-third to one-half of the calculated 900 flasks.

APPLICANT'S PROPOSAL

Although not too definitely outlined in his application, the following are believed to be the main features of the applicant's proposal for additional exploration at the Glass Buttes property:

1. Drill a series of churn drill holes from the surface along lines parallel to the strike and dip of the main breccia zone exposed in the main adit and the middle trench. The first hole will be in line with a vertical plane through the raise that extends from the adit to the middle trench. These holes will be planned to intersect the projection of the breccia zone 200 feet beneath the surface. Each new hole in section at right angles to the strike of the zone will be planned to give 100 feet additional depth.

2. Drive a sublevel from the raise for 125 feet along the strike of the breccia zone at an elevation about 30 feet below the floor of the middle trench. Crosscut a total of 75 feet from various locations in the drift to determine the thickness of the breccia zone.

An inspection of the vertical sections drawn through the breccia zone (see plate 1) shows that the breccia zone dips from 60° to 85°. There is also a suggestion of a steepening of the breccia zone near the adit level. Thus it seems improbable that churn drilling is the best method to test for deeper extensions of this zone. The churn holes will of necessity be vertical, and even if the breccia zone persists at a dip of 60°, the angle of intersection between churn drill hole and the zone will be very small and will be difficult to interpret. Should the breccia steepen in dip with depth, the drill hole might never intersect it.

Driving a sublevel from the raise at an elevation of only 30 feet beneath the bottom of the middle trench is definitely in the nature of development. Therefore, this particular feature of the applicant's proposal cannot be approved as part of a DMEA exploration project.

Undoubtedly the Glass Buttes property is worthy of additional exploration. The applicant reports that he has spent $30,000 this spring in bulldozing and driving underground workings. Although he has retained the services of at least one and perhaps two engineers, it is disconcerting to note that most of the trenching has been parallel to the strike of the mineralized breccia zone. A few short trenches at right angles to the strike of the zone would have obtained much more information regarding its extension. Also, the inadequacy of the maps and other information submitted with the application leads one to believe that despite the fact that the work

was supervised by apparently competent personnel only scant useful information has been obtained, and much of the work could have been more efficiently planned if more detailed geologic information had been recorded.

As a result of the few hours of mapping the DMEA examiners completed at the property, it is believed that a more satisfactory plan of exploration can be outlined than the one submitted by the applicant. For example, the area near the projected intersection between the two diverging breccia zones should be explored. Also, trenching at right angles to the strike of the main breccia zone in the valley northwest of the adit can be justified. As to testing for deeper extensions of the main breccia zone, diamond drilling appears to be a much more satisfactory method of exploration than churn drilling.

In view of the above considerations, it is believed that the application should be denied. If the applicant should present a modified exploration proposal, such as additional trenching and diamond drilling, supported by adequate geologic maps, a new application should be given consideration.

Enclosure

Distribution:
DMEA (4)
USBM (2)
USGS (SRO)
Docket
Puffett
Kellum

400

JUN - 6 1955

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

Re: Docket No. DMEA 3808 - Mercury
Nevada Scheelite Corporation
Glass Buttes prospect
Lake County, Oregon

Dear Mr. Weissenborn:

This will acknowledge your letter of May 6, 1955, transmitting the above-docketed application for exploration assistance at the Glass Buttes property and a copy of your letter of the same date to Mr. E. M. Colwell, vice-president, Nevada Scheelite Corporation.

We note from your letter to Mr. Colwell that a field examination of the property will be scheduled when certain requested data have been furnished. Therefore, we will hold the subject docket in abeyance pending the Field Team's report and recommendations.

In the event the recommendations of the Field Team are favorable, it is suggested that new consent to lien forms listing the property as recorded and as leased are required from the Olssons and Pringles. The reason is that the claims listed under "3.f." of the application are shown as the Glass Butte Association Nos. 1 through 21, inclusive, whereas the lease dated November 16, 1954, between the owners and Philip M. McKenna, and assigned by the latter to the applicant, lists the claims as the Vida 1, Vida 2, Beth 3, etc. The lists in the lease and the owner's consent to lien must correspond. In addition, a subordination agreement from Philip M. McKenna will be needed.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Approved:

J. H. Hedges

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

cc: Docket
FT, Reg.I-Spokane
Code 400
Oper. Comm.
Thor Kiilsgaard, USGS
H. M. Meyer, USBM
Adm. Reading File

FARutledge/ls
6/2/55

IN REPLY REFER TO:

407

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

RECEIVED
JUN - 6 1955

June 3, 1955

Re: DMEA-3908
Nevada Scheelite Corp.
Glass Butte Prospect
Lake County, Oregon
$20,000 - Mercury

Copy retained 400

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of application

The report of C. P. Ross (U.S.G.S. 931-B, 1941) probably contains the most information on this property available at this time unless the property has recently been visited by members of the field staff.

The application does not say so, but apparently the work done by the applicant has confirmed Ross' conclusions, ..."It seems improbable that more than a small part of the deposit could be mined profitably at the prices that prevail under normal circumstances, but as the deposit is very large and certainly contains some fairly rich ore, further work may show that it could serve as a source of quicksilver under emergency conditions."

If the plan of #1 Adit is read aright and the numbers denote the pounds of mercury in the samples, the concentrations of ore grade material are not numerous. Perhaps the applicant is disappointed in the results and is very ready to share the chances of finding better material below the zone of opalization.

An inspection of the recent work should be made. If experience shows the character of the opalite zone may be expected to change for the better at moderate depth the drilling proposed is probably warranted.

A referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

NENelson:hlm
G-6/3/55
CC: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Meyer, 2623 Interior

400

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 1, Washington

DEPARTMENT OF THE INTERIOR
Minerals Administration
RECEIVED
MAY 1 8 1953

May 5, 1953

3808

Mr. J. F. Colwell, Vice-President
Nevada Scheelite Corp.
430 South Main Street
Fallon, Nevada

Re: Application for exploration aid (mercury)
Glass Buttes mercury prospect
Lake County, Oregon

Dear Mr. Colwell:

Your application for Government aid in exploring your Glass Buttes property was received in this office May ., 1953. A preliminary appraisal has raised several important questions about the geology of the property and the method you propose to use in the exploration which we cannot resolve from the data you have submitted.

The work of Clyde P. Ross in this area is sufficient for an understanding of the general geologic relations of the area, but we must have additional information in order to make a fair appraisal of the property and of the proposed plan of exploring it. As you know, we must appraise exploration proposals primarily on the basis of data submitted by the applicant; unfortunately, the geologic and other data submitted in your application is not sufficient to permit a complete appraisal.

What is particularly needed is a geologic map of the property showing the mineralized area, including both the "north" and the "south" areas. This map should present the usual pertinent geologic data, particularly the geology of the recent bulldozer trenches and should show any samples taken from there or elsewhere on the surface and the assays. A complete and detailed geologic map of the underground workings should also be submitted along with sampling results and appropriate sections that correlate surface and underground geology. On both maps the position of faults, fractures, and zones enriched in quicksilver should be plotted; also the locations of your proposed churn drill holes and the proposed underground work should be plotted on these maps.

As soon as we receive this information, we will be glad to schedule an examination of the property at a date convenient to your engineers.

By Field Team, Region [illegible], [illegible] District

[illegible] Weissenborn, Exec. Officer
(U. S. Geological Survey)

King J. Agnew, Member
(U. S. Bureau of Mines)

cc: DWA(2)
[illegible](2)
Files

402

NEVADA SCHEELITE CORP.

SUBSIDIARY OF KENNAMETAL INC.

TELEPHONE HARRISON 3-3322
430 SOUTH MAINE STREET
FALLON, NEVADA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 16 1955

April 22, 1955

The Defense Minerals Exploration Administration
South 157 Howard Street
Spokane 4, Washington

3608

Gentlemen:

Enclosed are four completed applications for an exploration loan on the Glass Buttes Mercury prospect.

We hope that the enclosures are complete but if there is any further data that you desire please write to Mr. E.M. Colwell at the above address and he will ssee that it is put into the right hands for completion.

Thanking you for your kindness in this matter, we remain,

Very truly yours,
Nevada Scheelite Corporation
Subsidiary of Kennametal Inc.

Ray Henricksen

Ray Henricksen
Consulting Engineer

RECEIVED
MAY 4 1955
U.S.G.S.
SPOKANE, WASH.

DOCKET
SURNAME
Holt
Chapman
Nelson
Kiilsgaard
Yoe
Selfridge

400

AUG 2 9 1955

Nevada Scheelite Corporation
430 South Maine Street
Fallon, Nevada

Re: Docket No. DMEA 3808 - Mercury
Glass Buttes Prospect
Lake County, Oregon

Gentlemen:

Your application for aid for an exploration project and other data available to us in Washington relative to the above property have been carefully 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 our information indicates that although mercury mineralization occurs on the property, 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. Such denial, however, is made without prejudice. In the event further work on your part discloses new and more favorable evidence of ore deposition on the property, we shall be pleased to consider a new application, amply supported by geological mapping, sampling, and assaying.

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

SPH/fec 8-22-55
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG.I - NW Dist.
H. M. Meyer, USBM
T. H. Kiilsgaard, USGS

Sincerely yours,

C. O. Mittendorf (for)

Administrator

R.G.S.

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

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $20,000.
Docket No. DMEA No. 3808 - Mercury
Nevada Scheelite Corporation
Glass Buttes Prospect
Lake County, Oregon

The denial of the subject application is recommended by this Division based on the following information.

1. The applicant, Nevada Scheelite Corporation, 430 South Maine Street, Fallon, Nevada, requested exploration assistance in the amount of $20,000 for churn drilling, drifting and cross-cutting on and in the Glass Buttes mercury prospect.

2. The applicant controls, by sub-lease from Philip M. McKenna, who holds by lease from owners, E. W. Pringle, Elizabeth Pringle, Harold E. Olsson and Vida Olsson, the following unpatented mining claims situated in Sections 3 and 34, Townships 23 and 24 South, Range 23 East, in the Glass Buttes Mining District, Lake County, Oregon:

Vida 1; Vida 2; Beth 3; Beth 4; Harold 5; Harold 6; Jack 7; Bill 8; Bill 9; Harold 10; Bill 11; Harold 12; Vida 13; Beth 14; Bill 15; Bill 16; Harold 17; Harold 18; Bill 19; Beth 20; Vida 21.

3. The proposed program is to explore the property by approximately 2,000 feet of churn drilling from the surface and 125 feet of drifting, westerly from a new 30 foot level to be cut in the shaft, with 75 feet of crosscutting from the new drift.

4. Although scattered mineralization with mercury is found over the area proposed to be explored, various attempts, over a period of years, to find commercial mercury ore bodies have not been successful. The only production reported from the property is a 50 ton test lot which was processed in a small custom furnace.

5. The Field Team concludes that there is little probability of making a significant discovery, and recommends denial. The Commodity Divisions of the Geological Survey and the Bureau of Mines concur in this recommendation.

6. If the applicant, by further trenching and prospecting, discloses favorable indications for ore, a new application for exploration assistance would be in order.

Thos. L. Chapman

T. L. Chapman, Acting Chief
Iron and Ferro-Alloys Division

DOCKET
SURNAME

Chapman
Hoff
Nelson
Yogo

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of request for exploration assistance in the amount of $20,000.
Docket No. DMEA No. 3806 - Mercury
Nevada Scheelite Corporation
Glass Buttes Prospect
Lake County, Oregon

The denial of the subject application is recommended by this Division based on the following information.

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T. L. Chapman, Acting Chief
Iron and Ferro-Alloys Division

SPWOLF/foc
8-22-55
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.

PRC.

August 15, 1955

Memorandum

To: The Files

From: George C. Selfridge, Chairman
Operating Committee

Subject: Docket DMEA-3808 (Mercury), Nevada Scheelite Corporation, Glass Buttes Prospect, Lake County, Oregon.

Mr. Fryklund, acting for Mr. Weissenborn, Executive Officer, DMEA Field Team, Region I, Northwest District, telephoned the writer today with regard to the Operating Committee's letter dated August 8, 1955, and the examination report on the property. As the writer had no background on either, he noted Mr. Fryklund's comments and advised him that it would not be necessary for the Region to act further until it had heard from Washington.

Mr. Fryklund explained that the Field Team had considerably toned down Mr. Puffett's criticism of the applicant's technical representative. He explained that the man was a metallurgist with little or no mapping experience, and was not considered as a competent exploration engineer. The Region believed that, while the property seemingly had some merit, it was dubious that the government would receive reliable results if a Stage I program of trenching and mapping were participated in by the government because of the inexperience of the applicant's representative. The property is two days' distant from Spokane and to be sure of the results the Region would almost have to station a man at the property, a thing obviously it could not do. Under the circumstances the Region felt that further trenching and/or prospecting should be done by the company, and when favorable indications were disclosed then the company should resubmit its application. The writer informed Mr. Fryklund he would look into the matter at once and advise the Region with regard to further action.

George C. Selfridge

George C. Selfridge

GCS/hb (8/15/55)
Copy to: Docket ✓
Admr. R. File
Mr. Selfridge
Mr. Johnson
Mr. Martin

Docket

RECEIVED
AUG 11 1955

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

August 11, 1955

Re: DMEA-3808
(Mercury)
Nevada Sheelite Corp.
Glass Buttes Prospect,
Lake County, Oregon

Copy retained 400

Memorandum

To: W. S. Martin, DMEA

From: Acting Chief,
Branch of Base Metals

WSM

Subject: Review of application and Field Team report

I have reviewed the application, the memorandum report by William P. Puffett (USGS), and the recommendations for denial made by the Field Team, and concur with the latter that the applicant's proposal is not wholly sound, could be improved, and should be denied in its present form.

In reviewing the material, I conclude on the basis of USGS Bulletin 931-B and Mr. Puffett's report that mercury mineralization on the Glass Buttes prospect is extensive, that ore controls are but partially understood, and that the area is inadequately prospected. The mercury analyses while low are definitely of interest at a time such as this when mercury is selling in excess of $3 a pound.

Although the applicant's present exploration program is not wholly sound it would appear that it could be modified to make a very acceptable program consisting of surface trenching along the strike of the structure and normal to it, and of drilling to test at depth. The relative advantages and disadvantages of churn drilling versus diamond drilling should be carefully weighed should the proposal be amended to make it acceptable. I would note that if the structure dips no more than 60 to 65 degrees there are many advantages to the large sample and normally lower costs of churn drilling, particularly when water is 2 miles distant.

Helena M. Meyer

Helena M. Meyer

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

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

RECEIVED
AUG 11 1955

August 11, 1955

Re: DMEA-3808
(Mercury)
Nevada Sheelite Corp.
Glass Buttes Prospect,
Lake County, Oregon

Memorandum

To: W. S. Martin, DMEA

From: Acting Chief,
Branch of Base Metals

Subject: Review of application and Field Team report

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Division of Minerals
Mr. Kiilsgaard, Room 5222
Files

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

RECEIVED
AUG 11 1955

August 11, 1955

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(Mercury)
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Helena M. Meyer
Helena M. Meyer

Copy to - H. M. Meyer
O. M. Bishop
Division of Minerals
Mr. Killagaard, Room 5222
Files

DOCKET
SURNAME
Chapman
Martin
Meyer
Nelson
Yeferman
Wittenberg

400

AUG - 8 1955

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

Re: Docket No. DMEA 3808 - Mercury
Nevada Scheelite Corporation
Glass Buttes Prospect
Lake County, Oregon

Dear Mr. Weissenborn:

We have reviewed the Field Team's letter of July 14, 1955, and the enclosed report of Willard F. Puffett, Geologist, Geological Survey, dated June 14, 1955, covering the above referenced property.

From Mr. Puffett's report we note the following:

Page 2 - Recommendations. "It is recommended that this application be denied because of the inadequacy of the proposed program. Whether there is a suitable target in the area or not is not known, and it does not seem to be up to the Field Team to do the extensive mapping needed to determine whether a project is feasible."

Page 9 - Last paragraph. "Undoubtedly the Glass Buttes property is worthy of additional exploration. The applicant reports that he has spent $30,000.00 this spring in bulldozing and driving underground workings. Although he has retained the services of at least one and perhaps two engineers, it is disconcerting to note that most of the trenching has been parallel to the strike of the mineralized breccia zone. A few short trenches at right angles to the strike of the zone would have obtained more information regarding its extension. Also, the inadequacy of the maps and other information submitted with the application leads one to believe that despite the fact that the work was supervised by apparently competent personnel only scant useful information has been obtained, and much of the work could have been efficiently planned if more detailed geologic information had been recorded."

As the property apparently has some merit and it is possible that minable ore bodies of strategic importance may be developed, would it not be advisable to suggest to the applicant that he send in a new application with Stage 1 set up for cross-trenching and geological mapping.

R.C.K.

Stage II would be dependent on the results obtained from Stage 1. Please send us your suggestions on the subject and comment on the probable attitude of the applicant. toward such a program.

Sincerely yours,

W. S. Martin

ACTING Chairman, Operating Committee (HB)

APPROVED:

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

/s/ N. E. Nelson (HB)
Member, Geological Survey

TLCHAPMAN:fos
8-3-55
cc to: Docket
Code 400
Adm. Read. File
Operating Comm.
FT. REG. I - NW DIST.
H. M. Meyer, USBM
T. H. Kiilsgaard, USGS

IN REPLY REFER TO:

Docket

RECEIVED
JUL 26 1955

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

July 25, 1955

Re: DMEA 3808
Nevada Scheelite Corp.
Glass Buttes Prospect
Lake Co., Oregon
$20,000 - Mercury

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of Field Team report.

The field examiners have rendered an exceptionally informative and well prepared report. The applicant may have been shown the way to a more considered project.

I concur with the conclusions of the examiners and the recommendations of the Field Team.

N. E. Nelson

N. E. Nelson

Copy retained 400

IN REPLY REFER TO:

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

RECEIVED
JUL 26 1955

July 25, 1955

Re: DMEA 3808
Nevada Scheelite Corp.
Glass Buttes Prospect
Lake Co., Oregon
$20,000 - Mercury

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N. E. Nelson

N. E. Nelson

NENelson:iml
G-7/25/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Meyer, 2623

IN REPLY REFER TO:

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

RECEIVED
JUL 26 1955

July 25, 1955

Re: DMEA 3808
Nevada Scheelite Corp.
Glass Buttes Prospect
Lake Co., Oregon
$20,000 - Mercury

Memorandum

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NENelson:iml
G-7/25/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Meyer, 2623

Docket

IN REPLY REFER TO:

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

RECEIVED
JUN - 6 1955

June 3, 1955

Copy retained 400

Re: DMEA-3808
Nevada Scheelite Corp.
Glass Buttes Prospect
Lake County, Oregon
$20,000 - Mercury

WSM

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of application

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The application does not say so, but apparently the work done by the applicant has confirmed Ross' conclusions, ..."It seems improbable that more than a small part of the deposit could be mined profitably at the prices that prevail under normal circumstances, but as the deposit is very large and certainly contains some fairly rich ore, further work may show that it could serve as a source of quicksilver under emergency conditions."

If the plan of #1 Adit is read aright and the numbers denote the pounds of mercury in the samples, the concentrations of ore grade material are not numerous. Perhaps the applicant is disappointed in the results and is very ready to share the chances of finding better material below the zone of opalization.

An inspection of the recent work should be made. If experience shows the character of the opalite zone may be expected to change for the better at moderate depth the drilling proposed is probably warranted.

A referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
JUN - 6 1955

June 3, 1955

Re: DMEA-380S
Nevada Scheelite Corp.
Grass Buttes Prospect
Lake County, Oregon
$20,000 - Mercury

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of application

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N. E. Nelson

N. E. Nelson

NENelson:hlm
G-6/3/55
CC: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Meyer, 2623 Interior

IN REPLY REFER TO:

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

RECEIVED
JUN - 6 1955

June 3, 1955

Re: DMEA-3808
Nevada Scheelite Corp.
Chinese Buttes Prospect
Lake County, Oregon
$20,000 - Mercury

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of application

The report of C. F. Ross (U.S.G.S. 931-B, 1941) probably contains the most information on this property available at this time unless the property has recently been visited by members of the field staff.

The application does not say so, but apparently the work done by the applicant has confirmed Ross' conclusions, ..."It seems improbable that more than a small part of the deposit could be mined profitably at the prices that prevail under normal circumstances, but as the deposit is very large and certainly contains some fairly rich ore, further work may show that it could serve as a source of quicksilver under emergency conditions."

If the plan of #1 Adit is read aright and the numbers denote the pounds of mercury in the samples, the concentrations of ore grade material are not numerous. Perhaps the applicant is disappointed in the results and is very ready to share the chances of finding better material below the zone of opalization.

An inspection of the recent work should be made. If experience shows the character of the opalite zone may be expected to change for the better at moderate depth the drilling proposed is probably warranted.

A referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

NENelson:hlm
G-6/3/55
CC: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Meyer, 2623 Interior

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

RECEIVED
JUL 1 1955

~~JUL 19 1955~~

July 14, 1955

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

Re: Docket No. DMEA-3808 (mercury)
Nevada Scheelite Corporation
Glass Buttes Prospect
Lake County, Oregon

WSM

Dear Mr. Selfridge:

Enclosed are four copies of a memorandum by Willard P. Puffett, Geological Survey, recommending denial of the Nevada Scheelite Corporation application.

We are in agreement with Puffett that the plan of exploration proposed by the company is not a feasible one. We are also in agreement with him that there might possibly be a project in this area but the work done by the company to date has not been sufficient to define just what this project might be, even though the company has spent a considerable sum of money. Unfortunately, as Puffett points out, the work did not cross the possible ore-bearing structures and did not reveal very much. To work out a suitable project would require a rather extensive program of geologic mapping, and we feel that it is the responsibility of the Nevada Scheelite Corporation rather than of DMEA to do the necessary work and come up with an adequate proposal.

For these reasons, the Field Team concurs with Puffett and recommends denial of this application. We think, however, that the denial should be rather carefully worded so as to indicate to them that if more work is done and a more appropriate project submitted, the proposal could be resubmitted.

By Field Team, Reg. I, NW District

Wing G. Agnew, Acting Exec. Officer
U. S. Bureau of Mines

Verne C. Fryklund, Jr., Member
U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
7-22-55
(date)

Enclosure
cc: USBM (2)
USGS (SRO)
Puffett

UNITED STATES
Department of the Interior
Geological Survey
157 So. Howard Street
Spokane 4, Washington

RECEIVED
JUL 19 1955

June 14, 1955

Memorandum

To: DMEA Field Team, Region I, Northwest District

From: Willard P. Puffett, Geologist, Geological Survey

Subject: Docket No. DMEA-3808 (mercury), Application examination report, Nevada Scheelite Corporation, Glass Buttes prospect, Lake County, Oregon

APPLICANT
Nevada Scheelite Corporation, a Nevada Corporation
430 South Maine Street
Fallon, Nevada

SUMMARY

Mercury minerals, mainly cinnabar with minor amounts of mercury chloride, have been found in an area near Glass Buttes, Oregon, that measures about 1 mile in a north-south direction, and is about a third of a mile wide. The mercury minerals are apparently confined to zones within opalized and somewhat argillized rhyolite which has been brecciated. In general the cinnabar forms a very low percentage of the rock, averaging less than 5 pounds of mercury per ton.

Although cinnabar has been found at different localities over a large area, only one occurrence has been sufficiently explored to determine the apparent controls on its location. This occurrence has been explored by a few surface trenches and 862 feet of adit, from which have been driven a vertical winze about 50 feet deep and a raise 105 feet long to the surface. The underground work has exposed a breccia zone, ranging from 5 to 30 feet wide, for 270 feet. This breccia zone strikes about N. 65° W. and dips 55°-85° NE. Numerous narrower breccia zones occurring in the hanging wall area of the main breccia zone are exposed within the first 130 feet of the adit.

With the exception of two small remnants of glassy rhyolite, the underground workings have been driven through white to light buff "opalite" that has been generally somewhat argillized. The flow banding strikes in a general east-west direction and dips flatly to the north southwest of the main breccia zone, and flatly to the south northeast of the main breccia zone.

Reviewed by
DMEA OPERATING COMMITTEE
7-22-55
(date)

The cinnabar has formed as fracture fillings and as disseminations within the "opalite" in the breccia zones. Faint wisps of cinnabar "paint" line fractures at random locations not definitely related to any major fracture zone. Within the main breccia zone, the applicant reports mine car and channel samples that range from 1 to 9 pounds of mercury per ton on the adit level and from 1 to 14 pounds of mercury per ton in the raise. In the trench near the collar of the raise, mine car samples averaged 7 pounds of mercury per ton from an area measuring 8 feet wide and 45 feet long. In general it appears that the higher grade rock has been found near the surface. The winze from the adit level has not been completely rehabilitated, but it is known that the cinnabar persists to at least 20 feet below the level. Although the cinnabar occurs within a broad definite zone, the higher grade samples are quite erratic in distribution, and there appears to be no location within the zone where one can expect to find a definitely higher grade "shoot."

The applicant desires to test for the downward extension of the breccia zone by churn drilling. The churn drill holes will be placed at definite intervals along the strike and northeast of the main breccia zone. The churn drill holes will, of necessity, be vertical, and as the breccia zone has an average dip of about 60°, the intersection between the holes and the down-dip projection of the breccia zone will be at too small an angle to furnish satisfactory results for interpretative purposes; if the dip of the breccia zone steepens somewhat the drill holes might possibly miss it entirely. The applicant also proposes to drive a sublevel at a depth of only 30 feet below the middle trench. This is definitely in the nature of development.

The applicant is apparently financially able to carry out his part of the proposed program, but the exploratory work done so far at the property has been very poorly planned, and little useful information has been gained.

RECOMMENDATIONS

It is recommended that this application be denied because of the inadequacy of the proposed program. Whether there is a suitable target in the area or not is not known, and it does not seem to be up to the Field Team to do the extensive mapping needed to determine whether a project is feasible.

INTRODUCTION

The Glass Buttes property was examined on May 17 and 18, 1955, for DMEA by Willard P. Puffett and Donald F. Kellum, geologists, Geological Survey. Mr. John Gomes, exploration engineer for the applicant, accompanied the examiners to the property and furnished the examiners with all available information he had concerning the property. The information submitted with the application was relatively meager,

consisting mainly of a generalized outline map of the underground workings on which assay data were plotted plus a copy of a report and map of the area which had appeared in a U. S. Geological Survey Bulletin.

Mr. Gomes furnished very little new material, especially in the form of maps; consequently, it was necessary to make a much more accurate map of the outline of the underground workings and the nearby trenches and to map the details of the geology in both trenches and the underground workings. The trenches from which some production had been obtained contained much broken rock and dump material which obscured most of the bedrock exposures. No accurate map or other record had been kept of this work during the time it was being performed.

About 4 hours were spent in general reconnaissance of the area and 11 hours were spent in mapping the workings. The accompanying map (see plate 1) is the result of this work and shows the geology exposed in three trenches and the main adit. No samples were taken for assay purposes as it was believed that the assay information submitted by the applicant is fairly reliable and is sufficient on which to base an opinion regarding the mercury content of the mineralized areas.

LOCATION AND ACCESSIBILITY

The Glass Buttes property lies near the southeast end of a low range of hills trending in a general northwest direction, known as the Glass Buttes, in northeast Lake County, Oregon. The highest portion of this range reaches an altitude of about 4,900 feet, whereas the portal of the adit is approximately 4,590 feet. Although the area is quite hilly, the slopes are relatively gentle, there are no canyons, and abundant sagebrush with only an occasional small juniper grows on the thin mantle of soil. No water was encountered in any of the underground workings. The nearest available water supply for the camp and mining purposes is from a well in the valley about 2 miles north of the mine. It is reported that this well has been sunk to a depth of about 600 feet and apparently the water supply is adequate.

An unsurfaced road, traversable by passenger cars in dry weather, leads northward for about 3 miles from the mine to U. S. Highway 20, at a point about a quarter of a mile west of the 82 milepost east of Bend, Oregon.

PROPERTY

The property comprises 21 unpatented claims, which according to the application are listed on various pages of books 6 and 7 at the courthouse of Lake County, Lakeview, Oregon. The claims are

owned by E. W. Pringle and Harold Olsson of Ronan, Montana, and have been assigned to Philip M. McKenna, Greenburg, Pennsylvania. Mr. McKenna, in turn, has assigned his lease to Nevada Scheelite Corporation, Rawhide, Mineral County, Nevada, the present applicant. Copies of the legal documentation of the property transfers were submitted with the application.

The applicant submitted a map of his claims with the application. This map is not being reproduced for this report. However, the main adit, near which the applicant has proposed his exploration, has its portal near the east-central part of the Vida 1 claim.

The occurrence of cinnabar at Glass Buttes has been known for more than 20 years. Mr. Charles E. Miller of Bend, Oregon, located 48 claims in the area and presumably he excavated the score of prospect pits, plus two shafts and three adits on the property. During the summer of 1954, Mr. Pringle of Ronan, Montana, visited the area and found that assessment work had not been filed in the county courthouse and apparently the ground was open. Therefore he relocated 21 claims and subsequently leased the property to the present applicant. During the past winter several bulldozer trenches, and some underground work, including drifting and driving a raise from the drift to one of the trenches, were completed. In the spring of 1955, 50 tons of rock sorted from material taken from the underground workings and the trenches were furnaced in the Cottrell furnace at the Platner mine, Crook County, Oregon. The applicant reports the head sample of this material assayed 10 pounds of mercury per ton, although the recovery averaged much less, due to the lack of an adequate condensor system on the Cottrell furnace. Other than this furnacing of 50 tons, there is no record of any production from the property.

At the portal of the main adit a small shed has been erected which was used to protect the compressor. The camp consists of a cookhouse, a small assay office, and a bunkhouse. All mining equipment had been removed from the property at the time of the examination.

The main underground workings consist of an adit with 862 feet of drifts and crosscuts, a winze, reported to be nearly 50 feet deep at a point 175 feet inward from the portal, and an inclined raise, 105 feet long, driven to the surface from near the west end of the adit. The winze had been filled with debris and at the time of the examination had been cleared to a depth of 24 feet; it was not examined, however, as there were no ladders in it.

Two vertical shafts have been sunk on the hillslope a few hundred feet north of the portal of the adit. One shaft is about 60 feet deep and the other is less than 30 feet deep. These shafts appeared to be open to the bottom, but were not inspected as it was not certain how sound the timbers were.

Near the south end of the property, about 4,500 feet south of the adit, are two more adits. These adits are well timbered and are accessible for examination. Aside from the underground workings, there are many prospect pits and bulldozer trenches dotting the hillsides.

COMPETENCY OF THE APPLICANT

The Nevada Scheelite Corporation is a wholly owned subsidiary of Kennametal, Inc., Latrobe, Pennsylvania. This corporation is currently operating a tungsten property in Nevada, and apparently has a successful operation. There seems little doubt that the applicant is financially competent to participate in a DMEA exploration project for mercury ore.

The applicant has completed a reported $30,000 worth of exploration on the Glass Buttes property this spring. Presumably this work was supervised by relatively competent engineers, but much of the work, especially the trenching, could have been much more wisely planned, as nearly all the trenches have been excavated along lines parallel to the strike of the mineralized breccia zones; a series of short trenches across the zones would have given much more information. Mr. John Gomes, the engineer for the applicant, who accompanied the DMEA examiners, is a metallurgical engineer, and in this field there is no occasion to question his competence. Inspection of his maps of the workings and the complete lack of geologic detail, however, suggest that his understanding or appreciation of adequately recording the information obtained in trenches or in underground workings could be much improved. It is probably partly because of this that the relatively unsatisfactory exploration proposal has been outlined by the applicant.

GEOLOGY

Mercury minerals, mainly cinnabar with only minor amounts of mercury chlorides, have been deposited at the Glass Buttes property as fracture fillings and fine-grained disseminations in opalized rhyolite which locally has been moderately argillized. In numerous prospect pits, bulldozer trenches, two shafts, and three adits, it has been found that the higher concentrations of cinnabar have been localized in well-defined breccia zones which trend northwesterly and dip steeply to the northeast.

According to Waters (Waters, Aaron, A structural and petrographic study of the Glass Buttes, Lake County, Oregon: Jour. Geol., v. 35, p. 441-452, 1927), the acidic volcanic rocks represent an intermediate volcanic flow about 400 feet thick between two groups of basalt flows. These flows have been arched into an anticline forming the topographic prominence known as Glass Buttes. The anticline has been broken by a complicated system of normal faults, and the top of the anticlinal arch has been dropped into a graben, forming a valley in the central part of the Buttes. Many smaller transverse grabens intersect the main graben. Waters' paper did not mention the cinnabar present. Ross visited the Glass Buttes property in 1940 and briefly described the geology of the area with respect to the occurrences of cinnabar (Ross, C. P., Some quicksilver prospects in adjacent parts of Nevada, California, and Oregon: U. S. Geol. Survey Bull. 931-B, p. 33-36, 1941). He states that only members of the intermediate group of flows are exposed at the quicksilver property. Here these rocks are lavas consisting almost exclusively of flow-banded glass.

With the exception of two small unopalized remnants of rhyolite the rocks exposed in the trenches and in the adit and connected workings are white to light buff opalized rhyolite that locally has been moderately argillized. Flow banding has been fairly well preserved in the opalized rock. In the two adits near the south end of the property the opalized rhyolite is cut by bands of less altered grey perlite, which apparently has intruded the opalized material.

In general the flow banding of the rhyolite strikes in an east-west direction and dips flatly to the south in the area northeast of the main breccia zone and dips flatly to the north in the area southwest of the main breccia zone. Thus, it appears that the breccia zone follows the trough or bottom of a flat syncline in the graben which occupies the center of the main anticline. This slight syncline along the main breccia zone was observed both on the surface and in the underground workings (see sections on plate 1).

A persistent breccia zone, from 5 to 40 feet thick, is exposed in the middle trench and in the adit (see plate 1). It strikes about N. 65° W. and dips 60° to 85° NE. This breccia zone has also been explored both above and below the adit level. A winze, reportedly 50 feet deep, was sunk from the adit level near the eastern exposure of the zone, and 150 feet northwest of the winze an inclined raise has explored the breccia zone to the surface.

This raise holed out near the central part of the middle trench about 100 feet higher in altitude than the adit level. Coarsely brecciated opalized rhyolite persists both to the southeast

and northwest of the collar of the raise. Broken rock and dump material prohibited a complete examination of the extensions of the zone in the trench, but evidence suggested that the breccia zone persists along strike for at least 100 feet and attains a width of more than 10 feet.

Four narrower breccia zones, ranging from 3 to 10 feet thick, have been crosscut by the adit in an area just to the northeast of the larger breccia zone. These strike about N. 35° W. and dip northeasterly. Some of these are poorly exposed in the north trench. The extensions of these breccia zones to the northwest will project through the area in which the two shafts have been sunk. One small trench and a road have been constructed between the adit and these shafts, but no promising evidence of mercury ore has been exposed. If these narrow breccia zones are projected along strike to the southeast, they will intersect the southeast extension of the main breccia zone at an angle of about 30 degrees nearly 70 feet south of the adit.

Cinnabar occurs rather sporadically throughout the breccia zones, both as fracture fillings and as fine-grained disseminations. Elsewhere only widely scattered wisps of cinnabar have been found along fractures. Even in the breccia zones the cinnabar is extremely fine grained, and as the opalite is relatively transparent a small amount of the ore mineral tends to color the rock so much that it looks higher grade than it actually is. The coarsely brecciated opalized rhyolite of the main breccia zone contains moderate amounts of cinnabar, as is shown in the middle trench, in the adit, and in the raise connecting them. Plate 1 shows assay values as reported by the applicant.

The two adits near the south end of the property have been driven through brecciated zones in opalized rhyolite in which sparse amounts of cinnabar have been deposited. Inasmuch as these two adits are more than 4,000 feet south of the main adit, it is difficult to figure out what relation the cinnabar occurrences in this area have to those occurrences farther to the north until a more complete map of the geology of the area is available.

The DMEA examiners feel, after their brief study of the area, that there are several areas deserving more exploration which have not been touched by the exploration already done. No additional exploration has been completed to test for the northwest extension of the main breccia zone exposed in the adit and part of the middle trench. An inspection of the topographic sheet submitted with the application shows a relatively steep-walled valley to the northwest of the adit which trends in the same direction as the breccia zone. No trenching has been completed along the margins of this valley, but it does seem a reasonable possibility that the

location of the valley has been controlled by a fracture zone that may well represent the northwest extension of the mineralized breccia zone. In addition the projected intersection of the N. 35° W. breccia zones exposed in the adit with the main breccia zone in an area 40 to 80 feet south of the adit is a possible exploration target for an ore shoot.

Grade and ore reserves

The erratic grade of the cinnabar-bearing rock can be seen in plate 1.

The assay values from the mineralized portion of the breccia zone on the adit level range from 1 to 9 pounds, whereas the values in the raise, though erratic, appear to increase in the upper part. The applicant had opened the winze to a depth of 24 feet beneath the sill level of the adit, and his assay data from this part of the mine ranged from 4 to 11 pounds. The applicant reports that in the area to the west of the trench some production has been obtained, car samples from an area measuring 8 feet by 45 feet averaging 7 pounds of mercury per ton. By far the highest grade appearing rock is at the collar of the raise, and assay data indicate that this material contains from 9 to 14 pounds of mercury per ton.

An arithmetical average of all the assays (car, channel, and miscellaneous samples, except one of selected material) submitted by the applicant gives a grade of 4 pounds to the ton. This figure is used in the calculation of ore reserves given below.

An inspection of plate 1 shows that the mineralized portion of the breccia zone in the adit is about 270 feet long and averages 10 feet thick, assuming the mineralization is persistent between the winze and the raise, and the mineralized portion in the middle trench is about 100 feet long and averages 10 feet thick. The following rough calculation of tonnage can then be made, assuming a tonnage factor of 13 cubic feet per ton.

$$\frac{270+100}{2} \times 120 \times 10 \times \frac{1}{13} = 17{,}000 \text{ tons}$$

If it is assumed that the average mercury content of the above tonnage is 4 pounds of mercury per ton, then the total mercury content of such a block of ground is about 900 flasks.

Actually, the evidence exposed at the property suggests that the above figure is most optimistic, and it seems probable that the potential of the property in the area between the adit and the middle trench is only one-third to one-half of the calculated 900 flasks.

APPLICANT'S PROPOSAL

Although not too definitely outlined in his application, the following are believed to be the main features of the applicant's proposal for additional exploration at the Glass Buttes property:

1. Drill a series of churn drill holes from the surface along lines parallel to the strike and dip of the main breccia zone exposed in the main adit and the middle trench. The first hole will be in line with a vertical plane through the raise that extends from the adit to the middle trench. These holes will be planned to intersect the projection of the breccia zone 200 feet beneath the surface. Each new hole in section at right angles to the strike of the zone will be planned to give 100 feet additional depth.

2. Drive a sublevel from the raise for 125 feet along the strike of the breccia zone at an elevation about 30 feet below the floor of the middle trench. Crosscut a total of 75 feet from various locations in the drift to determine the thickness of the breccia zone.

An inspection of the vertical sections drawn through the breccia zone (see plate 1) shows that the breccia zone dips from 60° to 85°. There is also a suggestion of a steepening of the breccia zone near the adit level. Thus it seems improbable that churn drilling is the best method to test for deeper extensions of this zone. The churn holes will of necessity be vertical, and even if the breccia zone persists at a dip of 60°, the angle of intersection between churn drill hole and the zone will be very small and will be difficult to interpret. Should the breccia steepen in dip with depth, the drill hole might never intersect it.

Driving a sublevel from the raise at an elevation of only 30 feet beneath the bottom of the middle trench is definitely in the nature of development. Therefore, this particular feature of the applicant's proposal cannot be approved as part of a DMEA exploration project.

Undoubtedly the Glass Buttes property is worthy of additional exploration. The applicant reports that he has spent $30,000 this spring in bulldozing and driving underground workings. Although he has retained the services of at least one and perhaps two engineers, it is disconcerting to note that most of the trenching has been parallel to the strike of the mineralized breccia zone. A few short trenches at right angles to the strike of the zone would have obtained much more information regarding its extension. Also, the inadequacy of the maps and other information submitted with the application leads one to believe that despite the fact that the work

was supervised by apparently competent personnel only scant useful information has been obtained, and much of the work could have been more efficiently planned if more detailed geologic information had been recorded.

As a result of the few hours of mapping the DMEA examiners completed at the property, it is believed that a more satisfactory plan of exploration can be outlined than the one submitted by the applicant. For example, the area near the projected intersection between the two diverging breccia zones should be explored. Also, trenching at right angles to the strike of the main breccia zone in the valley northwest of the adit can be justified. As to testing for deeper extensions of the main breccia zone, diamond drilling appears to be a much more satisfactory method of exploration than churn drilling.

In view of the above considerations, it is believed that the application should be denied. If the applicant should present a modified exploration proposal, such as additional trenching and diamond drilling, supported by adequate geologic maps, a new application should be given consideration.

Enclosure

Distribution:
DMEA (4)
USBM (2)
USGS (SRO)
Docket
Puffett
Kellum

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

IN REPLY REFER TO:

400

RECEIVED
JUL 26 1955

July 25, 1955

Re: DMEA 3608
Nevada Scheelite Corp.
Glass Buttes Prospect
Lake Co., Oregon
$20,000 - Mercury

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

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

Subject: Review of Field Team report.

The field examiners have rendered an exceptionally informative and well prepared report. The applicant may have been shown the way to a more considered project.

I concur with the conclusions of the examiners and the recommendations of the Field Team.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-7/25/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Meyer, 2623

400

DOCKET
Surname:

Rutledge
Martin
Selfridge
Bjornson
Wittendorf

JUN - 6 1955

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

Re: Docket No. DMRA 3808 - Mercury
Nevada Scheelite Corporation
Glass Buttes prospect
Lake County, Oregon

Dear Mr. Weissenborn:

This will acknowledge your letter of May 6, 1955, transmitting the above-docketed application for exploration assistance at the Glass Buttes property and a copy of your letter of the same date to Mr. E. M. Colwell, vice-president, Nevada Scheelite Corporation.

We note from your letter to Mr. Colwell that a field examination of the property will be scheduled when certain requested data have been furnished. Therefore, we will hold the subject docket in abeyance pending the Field Team's report and recommendations.

In the event the recommendations of the Field Team are favorable, it is suggested that new consent to lien forms listing the property as recorded and as leased are required from the Olssons and Pringles. The reason is that the claims listed under "3.f." of the application are shown as the Glass Butte Association Nos. 1 through 21, inclusive, whereas the lease dated November 16, 1954, between the owners and Philip M. McKenna, and assigned by the latter to the applicant, lists the claims as the Vida 1, Vida 2, Beth 3, etc. The lists in the lease and the owner's consent to lien must correspond. In addition, a subordination agreement from Philip M. McKenna will be needed.

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

cc: Docket
FT, Reg.I-Spokane
Code 400
Oper. Comm.
Thor Kiilsgaard, USGS
H. M. Meyer, USBM
Adm. Reading File

FARutledge/ls
6/2/55

R.S.S.

May 16, 1955

Subject: DMEA-3808
Re: Exploration Assistance

Nevada Sheelite Corp.
430 South Maine St.,
Fallon, Nevada

Gentlemen:

The receipt of your application dated April 20, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3808 and referred to the Iron Ferro-Alloys 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

May 16, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region I (NM)

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

DMEA-3808 Nevada Sheelite Corp.

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

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

Dorbert
3888

May 6, 1955

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

Re: Transmittal of application for exploration aid (mercury)
Nevada Scheelite Corp.
Glass Buttes mercury prospect
Lake County, Oregon

Dear Mr. Selfridge:

Enclosed are three copies of the following documents: (1) MF-103, (2) financial statement, (3) Agreement dated November 16, 1954, between E. W. Pringle and Harold Olsson, lessors, and Philip M. McKenna, lessee, (4) Assignment of Lease Agreement dated April 25, 1955, from Philip M. McKenna to Nevada Scheelite Corp., (5) MF-203 dated April 16, 1955, signed by E. W. and Elizabeth Pringle and Harold E. and Vida Olsson, (6) Quit Claim Deed dated September 7, 1954, between Jack and Evelyn L. Olsson and Harold E. Olsson covering the Glass Butte Association Mining Claim No. 7, and (8) report by Cylde P. Ross (1941) entitled "Glass Buttes Prospect, Northeastern Lake County, Oregon", U. S. Geol. Survey Bulletin 931-B.

As you can see from the attached letter to the applicant, we are not satisfied with the application and are attempting to get more information to substantiate this proposal.

Sincerely yours,

A. E. Weissenborn
A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I
Northwest District

Enclosures
cc: USBM

Docket

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

Defense Minerals Administration
RECEIVED
MAY 18 1955

May 6, 1955

3808

Mr. L. R. Colwell, Vice-President
Nevada Scheelite Corp.
430 South Main Street
Fallon, Nevada

Re: Application for exploration aid (mercury)
Glass Buttes mercury prospect
Lake County, Oregon

Dear Mr. Colwell:

Your application for Government aid in exploring your Glass Buttes property was received in this office May 4, 1955. A preliminary appraisal has raised several important questions about the geology of the property and the method you propose to use in the exploration which we cannot resolve from the data you have submitted.

The work of Clyde P. Ross in this area is sufficient for an understanding of the general geologic relations of the area, but we must have additional information in order to make a fair appraisal of the property and of the proposed plan of exploring it. As you know, we must appraise exploration proposals primarily on the basis of data submitted by the applicant; unfortunately, the geologic and other data submitted in your application is not sufficient to permit a complete appraisal.

What is particularly needed is a geologic map of the property showing the mineralized area, including both the "north" and the "south" areas. This map should present the usual pertinent geologic data, particularly the geology of the recent bulldozer trenches and should show any samples taken from there or elsewhere on the surface and the assays. A complete and detailed geologic map of the underground workings should also be submitted along with sampling results and appropriate sections that correlate surface and underground geology. On both maps the position of faults, fractures, and zones enriched in quicksilver should be plotted; also the locations of your proposed churn drill holes and the proposed underground work should be plotted on these maps.

DMER

As soon as we receive this information, we will be glad to schedule an examination of the property at a date convenient to your engineers.

By Field Team, Region 1, MD District

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

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

cc: [illegible] A(2)
[illegible] (2)
Duffeth

Dorhet

NEVADA SCHEELITE CORP.

SUBSIDIARY OF KENNAMETAL INC.

TELEPHONE HARRISON 3-3322
430 SOUTH MAINE STREET
FALLON, NEVADA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 16 1955

April 30, 1955

3808

The Defense Minerals Exploration Administration
South 157 Howard Street
Spokane 4, Washington

Gentlemen:

Some of the enclosed papers have not had all the signatures notarized. If this should be necessary, please let us know at your earliest convenience.

The "Assignment of Lease Agreement" as well as the "Owner's Consent to Lien" will be recorded at the County Seat of Lake County within the next two weeks.

Thanking you, we remain,

Very truly yours,

NEVADA SCHEELITE CORP.
Subsidiary of Kennametal Inc.

E. M. Colwell

E. M. Colwell
Vice-President

RECEIVED
MAY 4 1955
U. S. G. S.
SPOKANE, WASH.

EMC:m

NEVADA SCHEELITE CORP.
SUBSIDIARY OF KENNAMETAL INC.
TELEPHONE HARRISON 3-3322
430 SOUTH MAINE STREET
FALLON, NEVADA

Doubet

April 22, 1955

The Defense Minerals Exploration Administration
South 157 Howard Street
Spokane 4, Washington

3808

Gentlemen:

Enclosed are four completed applications for an exploration loan on the Glass Buttes Mercury prospect.

We hope that the enclosures are complete but if there is any further data that you desire please write to Mr. E.M. Colwell at the above address and he will ssee that it is put into the right hands for completion.

Thanking you for your kindness in this matter, we remain,

Very truly yours,
Nevada Scheelite Corporation
Subsidiary of Kennametal Inc.

Ray Henricksen

Ray Henricksen
Consulting Engineer

RECEIVED
MAY 4 1955
U.S.G.S.
SPOKANE, WASH.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
MAY 4 1955

RECEIVED
MAY 16 1955

U. S. G. S.
SPOKANE, WASH.

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

Not to be filled in by applicant

Docket No. 3808
Metal or Mineral Mercury
Date Received 5-16-55
Estimated Cost 20,000.
Participation (Government %) 75

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: See Attached Sheets

(*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

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

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

(*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 .....

.....

(*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 ..... days and be completed within ..... 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?

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated April 20, 1955

Nevada Scheelite Corporation
430 South Maine Street, Fallon, Nevada
(Applicant)

By Donald C McKenna

President, Nevada Scheelite Corporation

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

1. Name off applicant.

Nevada Scheelite Corporation, a Nevada Corporation, 430 South Maine Street, Fallon, Nevada. (Whooly-owned by Kennametal, Inc., Latrobe, Pa.)

Donald C. McKenna, President, Nevada Scheelite Corporation. Vice President Kennametal Inc., 4611 Live Oak Drive, Claremont, California

E.M. Colwell, Vice President, Nevada Scheelite Corporation, 430 South Maine Street, Fallon, Nevada. Telephone Harrisson 3-3322,

George Kearns, Secretary - Treasurer, Latrobe, Pa.

Please address all correspondence to Mr. E.M. Colwell, 430 South Maine Street, Fallon, Nevada

NEVADA SCHEELITE CORP.

SUBSIDIARY OF KENNAMETAL INC.

STATEMENT OF INCOME

	March 1955	March 31,1955	Six Months to March 31,1954*
SALES OF PRODUCED CONCENTRATES	157 417.27	1 072 574.73	1 144 924.01
Less Royalties	7 870.87	53 628.72	57 246.20
Net Sales	149 546.40	1 018 946.01	1 087 677.81
COST OF SALES			
Mining	67 143.56	391 083.01	265 835.41
Reduction-Mine	18 634.53	115 559.29	107 151.25
Reduction-Tailings Mill	5 093.87	5 093.87	
General Plant	17 225.07	102 023.12	90 688.47
Power	13 884.26	73 382.02	62 117.96
Water	2 344.20	17 537.70	15 612.93
Commissary	3 693.04	17 274.56	14 210.13
Administrative	5 736.33	38 443.71	7 018.33
Total	133 754.86	760 397.28	562 634.48
(Increase) Decrease Inventories of Produced Concentrates	(33 576.80)	(42 922.97)	63 902.03
Cost of Sales	100 178.06	717 474.31	656 536.51
Net Profit from Operations	49 368.34	301 471.70	461 141.30
OTHER INCOME (EXPENSE)			
Profit on Purchased Concentrates & Ore	720.44	2 794.65	2 541.03
Other (Net)	164.94	1 472.32	878.95
Total other Income (Expense)	885.38	4 266.97	3 419.98
Net Income before Federal Income Taxes	50 253.72	305 738.67	464 561.28
PROVISION FOR FEDERAL INCOME TAXES	11 500.00	79 100.00	155 600.00
Net Income for the Period	38 753.72	226 638.67	308 961.28

*Operations of the Nevada Scheelite Division of Kennametal Inc.

NEVADA SCHEELITE CORP.

SUBSIDIARY OF KENNAMETAL INC.

BALANCE SHEET — MARCH 31, 1955

ASSETS

CURRENT ASSETS:		
Cash	226 396.75	
Accounts Receivable	167 046.42	
Inventories	84 614.69	
Total Current Assets		478 057.86
PREPAID EXPENSES, DEFERRED CHARGES, ETC.		35 682.38

FIXED ASSETS:

	Cost	Reserve	Net	
Buildings and Structures	172 341.71	116 131.75	56 209.96	
Machinery-Mining	105 772.86	58 626.05	47 146.81	
Machinery-Milling	149 659.07	91 315.88	58 343.19	
Water System	125 036.61	86 761.16	38 275.45	
Power System	161 315.04	64 025.11	97 289.93	
Communications System	8 467.03	5 348.47	3 118.56	
General Plant Equipment	38 494.65	23 747.07	14 747.58	
Automobiles and Tractors	18 367.35	13 210.08	5 157.27	
Furniture and Fixtures	5 585.32	2 265.16	3 320.16	
Commissary Equipment	9 119.93	5 880.81	3 239.12	
	794 159.57	467 311.54	326 848.03	
Construction in Process	53 181.15		53 181.15	
Mining Claims	109 255.94	87 762.70	21 493.24	
	956 596.66	555 074.24	401 522.42	
				401 522.42
				915 262.66

LIABILITIES AND STOCKHOLDERS' EQUITY

CURRENT LIABILITIES:			
Accounts Payable			
Trade		32 061.31	
Kennametal Inc.		2 126.55	
Salaries and Wages		22 839.32	
Taxes other than Federal Income Taxes		30 995.90	
Provision for Federal Income Taxes		79 100.00	
Other		22 000.91	
Total Current Liabilities			189 123.99
STOCKHOLDERS' EQUITY:			
Capital Stock, $1 par value-Authorized 750,000 Shares			
Issued and Outstanding, 499,500 Shares		499 500.00	
Earned Surplus			
Balance, October 1, 1954			
Net Income for the Six Months Ended March 31, 1955	226 638.67	226 638.67	
			726 138.67
			915 262.66

A G R E E M E N T

THIS AGREEMENT OF LEASE, made and entered into this 16th day of ~~October~~ Nov., 1954, between E.W. PRINGLE and HAROLD OLSSON, of the City of Ronan, State of Montana, hereinafter called the Lessors, and PHILIP M. McKENNA, of the City of Greensburg, State of Pennsylvania, hereinafter called the Lessee,

W I T N E S S E T H:

That the Lessors, for and in consideration of the sum of One Dollar ($1.00) cash in hand paid, receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained on the part of the Lessee to be paid, kept and performed, do hereby grant, demise and let unto the Lessee those certain mining claims situated in the Glass Buttes District in Lake County, State of Oregon, to-wit:

All those certain mining claims named and called Vida 1; Vida 2; Beth 3; Beth 4; Harold 5; Harold 6; Jack 7; Bill 8; Bill 9; Harold 10; Bill 11; Harold 12; Vida 13; Beth 14; Bill 15; Bill 16; Harold 17; Harold 18; Bill 19; Beth 20; Vida 21:

Situated in Sections 3 and 34, in Townships 23 and 24 S and Range 23E:

for the sole purpose of exploring for, operating, mining, extracting and removing therefrom Mercury and other minerals and selling the same, for the term of twenty (20) years, commencing with the date hereof.

As rental or royalty for the said term, the Lessee promises and agrees to pay to the Lessors ten (10) per cent of the gross proceeds of all minerals mined, extracted and removed from said premises, said ten (10) per cent rental or royalty to be paid from time to time as sales are made, but in no event later than fifteen (15) days after Lessee has received the proceeds from such sale. All royalty and rental payments to be made to The Ronan State Bank, Ronan, Montana.

However, at the election of either party, ten (10) per cent of the Mercury or other minerals produced can be turned over to the Lessees in lieu of the cash rental or royalty payment referred to in the foregoing paragraph.

A copy of all Mercury or other mineral sales transactions will be attached to the rental or royalty settlements. Lessee agrees that an adequate set of books on the operation will be kept and will be open to inspection by the Lessors at all reasonable times.

It is also mutually agreed that Lessors or their duly appointed agent may inspect the property at any reasonable time so long as such inspection does not curtail the operation.

The Lessee shall have the right and privilege to assign this lease or any interest thereunder to any qualified person or persons or corporation.

The Lessee agrees that should he locate and operate other mining claims on public domain within a radius of two (2) miles from said mill or furnace, that the Lessors shall receive the same rental or royalty payments either in money or in kind as had the Lessors located such claims themselves.

The Lessee agrees that he will at all times during the term of this lease, or until the sooner termination thereof as herein provided, carry on with all reasonable diligence the said work of exploring, mining, processing, removing and selling any and all Mercury or other minerals that may be found by him in or on said premises, and that he will do all of said work in a minerlike manner and protect the said Lessors and their interest in said real property in every fair and reasonable way.

The Lessee agrees to pay any additional tax upon said premises which may be levied or assessed on account of said mining operations, or as a result of any increased value of said premises due to said mining developments and operations.

The Lessors assume no liability or responsibility for wages, workmen's compensation or other damage claims of whatsoever nature which may be incurred or may accrue or arise by reason of any mining or development work carried on by the Lessee hereunder.

The Lessee agrees to keep said premises free and clear of all costs, liens and encumbrances done, made or suffered by said Lessee, and to permit the Lessors to place and maintain in a conspicuous place upon said premises such notice as shall be lawfully necessary to protect the Lessors against such claims.

All machinery and improvements placed upon said premises by the Lessee may be removed by him within 180 days after the termination of this lease.

Upon the expiration or sooner termination of this lease, or upon the abandonment thereof, or any portion thereof, as herein provided, the Lessee agrees to quit and surrender peaceable possession of all of said premises, or the part thereof so abandoned, and also, and upon the request of the Lessors, the Lessee agrees upon such termination or abandonment to execute and deliver to the Lessors a quitclaim deed of all of said premises, or the part so abandoned, as the case may be, unless a deed shall have theretofore been executed and delivered to the Lessee by the Lessors.

It is expressly understood and agreed that, notwithstanding any other provision of this lease to the contrary, the Lessee may at any time surrender and abandon to the Lessors the whole or any part of said premises, and upon such surrender and abandonment thereof and the execution of a quitclaim by the Lessee to the Lessors of the portion so surrendered or abandoned, the Lessee shall thereupon be released from all the obligations of this lease as to the portion of said premises so abandoned and quitclaimed.

This agreement shall apply to and bind the heirs, executors, administrators and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the Lessors and Lessee have hereunto set their hands the day and year herein first above written.

E.W. Pringle
Elizabeth Pringle

Harold E. Olsson
Vida Olsson

Lessors

Philip M. McKenna
Lessee

ASSIGNMENT OF LEASE AGREEMENT

For the sum of ONE ($1.00) DOLLAR and other considerations, I, Philip M. McKenna, of R. D. #3, Greensburg, Pennsylvania, hereby assign to NEVADA SCHEELITE CORP., a Nevada Corporation, having its principal place of business at Rawhide, Mineral County, Nevada,

ALL of my right, title, and interest (except as hereinafter provided) in that certain Agreement of Lease made and entered into by me the 16th day of November, 1954 with E. W. Pringle and Harold Olsson, a copy of which is hereto attached as a part hereof.

RESERVING unto myself, my heirs or assigns a TWENTY-FIVE (25%) PER CENT. interest in the gross profits, if any, realized by the NEVADA SCHEELITE CORP. from operations under the above-described lease, until such time as a total of FORTY THOUSAND ($40,000.00) DOLLARS has thus been paid over to me, at which time my entire interest in the above-described lease shall cease and determine.

IN WITNESS WHEREOF, I have hereunto set my hand and seal, at Latrobe, Pennsylvania, this 25th day of April, 1955.

Philip M. McKenna (SEAL)
Philip M. McKenna

Subscribed and sworn to before me this 25th day of April, 1955.

Margaret B. Klingensmith
Notary Public

MARGARET B. KLINGENSMITH, Notary Public
LATROBE, WESTMORELAND CO., PA.
My Commission expires Jan. 7, 1959

A G R E E M E N T

THIS AGREEMENT OF LEASE, made and entered into this 16th day of November, 1954, between E. W. PRINGLE and HAROLD OLSSON, of the City ofRonan, State of Montana, hereinafter called the Lessors, and PHILIP M. McKENNA, of the City of Greensburg, State of Pennsylvania, hereinafter called the Lessee,

W I T N E S S E T H:

That the Lessors, for and in consideration of the sum of One Dollar ($1.00)cash in hand paid, receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained on the part of the Lessee to be paid, kept and performed, dohereby grant, demise and let unto the Lessee those certain mining claims situated in the Glass Buttes District in Lake County, State of Oregon, to-wit:

All those certain mining claims named and called
Vida 1; Vida 2; Beth 3; Beth 4; Harald 5; Harald 6;
Jack 7; Bill 8; Bill 9; Harald 10; Bill 11; Harald 12;
Vida 13; Beth 14; Bill 15; Bill 16; Harald 17; Harald
18; Bill 19; Beth 20; Vida 21:
Situated in Sections 3 and 34, in Townships 23 and 24 S
and Range 23 E:

for the sole purpose of exploring for, operating, mining, extracting and removing therefrom Mercury and other minerals and selling the same, for the term of twenty (20) years, commencing with the date hereof.

As rental or royalty for the said term, the Lessee promises and agrees to pay to the Lessors ten (10) per cent of the gross proceeds of all minerals mined, extracted and removed from said premises, said ten (10) per cent rental or royalty to be paid from time to time as sales are made, but in no event later than fifteen (15) days after Lessee has received the proceeds from such sale. All royalty and rental payments to be made to The Ronan State Bank, Ronan, Montana.

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A copy of all Mercury or other mineral sales transactions will be attached to the rental or royalty settlements. Lessee agrees that an adequate set of books on the operation will be kept and will be open to inspection by the Lessors at all reasonable times.

It is also mutually agreed that Lessors or their duly appointed agent may inspect the property at any reasonable time so long as such inspection does not curtail the operation.

The Lessee shall have the right and privilege to assign this lease or any interest thereunder to any qualified person or persons or corporation.

The Lessee agrees that should he locate and operate other mining claims on public domain within a radius of two (2) miles from said mill or furnace, that the Lessors shall receive the same rental or royalty payments either in money or in kind as had the Lessors located such claims themselves.

The Lessee agrees that he will at all times during the term of this lease, or until the sooner termination thereof as herein provided, carry on with all reasonable diligence the said work of exploring, mining, processing, removing and selling any and all Mercury or other minerals that may be found by him in or on said premises, and that he will do all of said work in a minerlike manner and protect the said Lessors and their interest in said real property in every fair and reasonable way.

The Lessee agrees to pay any additional tax upon said premises which may be levied or assessed on account of said mining operations, or as a result of any increased value of said premises due to said mining developments and operations.

The Lessors assume no liability or responsibility for wages, workmen's compensation or other damage claims of whatsoever nature which may be incurred or may accrue or arise by reason of any mining or development work carried on by the Lessee hereunder.

The Lessee agrees to keep said premises free and clear of all costs, liens and encumbrances done, made or suffered by said Lessee, and to permit the Lessors to place and maintain in a conspicuous place upon said premises such notice as shall be lawfully necessary to protect the Lessors against such claims.

All machinery and improvements placed upon said premises by the Lessee may be removed by him within 180 days after the terminationof this lease.

Upon the expiration or sooner termination of this lease, or upon the abandonment thereof, or any portion thereof, as herein provided, the Lessee agrees to quit and surrender peaceable possession of all of said premises, or the part thereof so abandoned, and also, and upon the request of the Lessors, the Lessee agrees upon such termination or abandonment to execute and deliver to the Lessors a quitclaim deed of all of said premises, or the part so abandoned, as the case may be, unless a deed shall have theretofore been executed and delivered to the Lessee by the Lessors.

It is expressly understood and agreed that, notwithstanding any other provision of this lease to the contrary, the Lessee may at any time surrender and abandon to the Lessors the whole or any part of said premises, and upon such surrender and abandonment thereof and the execution of a quitclaim by the Lessee to the Lessors of the portion so surrendered or abandoned, the Lessee shall thereupon by released from all the obligations of this lease as to the portion of said premises so abandoned and quitclaimed.

This agreement shall apply to and bind the heirs, executors, administrators and assigns of therespective parties hereto.

IN WITNESS WHEREOF, the Lessors and Lessee have hereunto set their hands the day and year herein first above written.

STATE OF _____

COUNTY OF _____

Sworn before me this ____ day of December, 1954, by E. W. Pringle and Harold Olsson.

_____
Notary Public
My commission expires_____

E W Pringle
Harold Olsson
Lessors

Philip M McKenna
Lessee

STATE OF PENNSYLVANIA)
) SS.
COUNTY OF WESTMORELAND)

Sworn before me this 15th day of December, 1954 by Philip M. McKenna.

Mrs M B Kleinsmith
Notary Public
My commission expires 1/7/55

3.f.

Name		Locator	Recorded				
Glass Butte Association	No. 1	Vida Olsson	9/2/54	Book	6	Page	513
	No.e2	Vida Olsson	9/2/54		6		511
	3	Elizabeth Pringle	9/1/54		6		503
	4	Elizabeth Pringle	9/1/54		6		505
	5	Harold E.Olsson	9/1/54		6		507
	6	Harold Olsson	11/10/54		7		1
	7	Jack Olsson	9/1-54		6		509
	8	E.W.Pringle	11/10/54		7		3
	9	E.W.Pringle	11/10/54		7		5
	10	Harold Olsson	11/10/54		7		7
	11	E.W.Pringle	11/10/54		7		9
	12	Harold Olsson	11/10/54		7		11
	13	Vida Olsson	11/10/54		7		13
	14	Elizabeth Pringle	11/10/54		7		15
	15	E.W. Pringle	11/10/54		7		17
	16	E.W. Pringle	11/10/54		7		19
	17	Harold Olsson	11/10/54		7		21
	18	Harold Olson	11/10/54		7		23
	19	E.W. Pringle	11/10/54		7		25
	20	Elizabeth Pringle	11/10/54		7		27
	21	Vida Olsson	11/10/54		7		28

All of the above claims are Records of Lake Couty, Oregon.

Nevada Scheelite Corporation, 430 South Maine Street, Fallon, Nevada

Name		Locator	Recorded			
Glass Butte Association	No. 1	Vida Gleason	9/2/54	Book 6	Page	513
	No.e2	Vida Gleason	9/2/54	6		511
	3	Elizabeth Pringle	9/1/54	6		503
	4	Elizabeth Pringle	9/1/54	6		505
	5	Harold E.Gleason	9/1/54	6		507
	6	Harold Gleason	11/10/54	7		1
	7	Jack Gleason	9/1-54	6		509
	8	E.W.Pringle	11/10/54	7		3
	9	E.W.Pringle	11/10/54	7		5
	10	Harold Gleason	11/10/54	7		7
	11	E.W.Pringle	11/10/54	7		9
	12	Harold Gleason	11/10/54	7		11
	13	Vida Gleason	11/10/54	7		13
	14	Elizabeth Pringle	11/10/54	7		15
	15	E.W. Pringle	11/10/54	7		17
	16	E.W. Pringle	11/10/54	7		19
	17	Harold Gleason	11/10/54	7		21
	18	Harold Gleson	11/10/54	7		23
	19	E.W. Pringle	11/10/54	7		25
	20	Elizabeth Pringle	11/10/54	7		27
	21	Vida Gleason	11/10/54	7		28

All of the above claims are Records of Lake County, Oregon.

NO. 14—QUIT CLAIM DEED STATE PUBLISHING CO., HELENA, MONT.

THIS INDENTURE, Made the 7th *day of* September *in the year of our Lord one thousand nine hundred and* fifty four *between* Jack Olsson, also known as Jack W. Olsson, and Evelyn L. Olsson, his wife, *the part*ies *of the first part and* Harald E. Olsson of Ronan, Montana *the part*y *of the SECOND PART;*

*WITNESSETH: That the said part*ies *of the FIRST PART for and in consideration of the sum of* Ten and No/100 *Dollars, ($*10.00*) to* them *in hand paid by the said part*y *of the SECOND PART, receipt of which is hereby acknowledged; do hereby convey, remise, release and forever quitclaim unto the said part*y *of the second part, and to* his *heirs, and assigns, the following described real estate, situated in the* Oregon *County of* Lake *and State of* ~~Montana~~, *to-wit:*

Glass Butte Association Mining Claim No. 7,
recorded on the 1st day of September, 1954,
at 2:00 o'clock P. M., in Book 6, on page 509
records of Mining Claims, Lake County, Oregon.

together with all the tenements, hereditaments, and appurtenances thereto belonging, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof; and also all the estate, right, title, interest in and to said *property, possession, claim and demand whatsoever as well in law as in equity, of the said part*ies *of the first part, of in or to the said premises and every part and parcel thereof.*

*TO HAVE AND TO HOLD, all and singular the said premises, with the appurtenances unto the said part*y *of the second part* his *heirs and assigns forever.*

*IN WITNESS WHEREOF, the said part*ies *of the first part h*ave *hereunto set* their *hand*s *and seal*s *the day and year first above written.*

Signed, Sealed and Delivered in the Presence of

Jack W. Olsson (SEAL)

Evelyn L. Olsson (SEAL)

STATE OF MONTANA,
County of Lake } ss.

On this 7th day of September nineteen hundred and fifty four before me G. W. Leighton, a Notary Public for the State of Montana, personally appeared Jack W. Olsson, also known as Jack Olsson and Evelyn L. Olsson, his wife,

known to me personally

(or proved to me on oath of .....)

to be the person s whose name s are subscribed to the within instrument, and acknowledged to me that t he y executed the same.

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

((SEAL)) G. W. Leighton
Notary Public for the State of Montana,

Residing at Ronan, Montana My Commission expires September 20, 19 54

QUIT CLAIM DEED

TO

STATE OF MONTANA,
County of ..... } ss.

Filed for Record this ..... day of ..... A. D. 19 ..... at ..... o'clock ..... M., and Recorded in Book ..... of Deeds Page ..... of the Records of ..... County, State of .....

County Recorder.

By ..... Deputy.

Fees $ .....

UM—QU-YE

GLASS BUTTES PROSPECT, NORTHEASTERN LAKE COUNTY, OREG.
(By Clyde P. Ross - 1941)
USGS 931-B

The Glass Buttes prospect is on the isolated hills of that name in the northeast part of Lake County, Oreg. It is about 3.5 miles by road south of the highway between Bend and Burns, in Tps. 23 and 24 S., R. 23 E. (pl. 6). The property is owned by Charles E. Miller, of Bend, Oreg., and comprises 48 claims, as shown on plate 8. Quicksilver has been known for several years to occur here.5/ Test pits and short tunnels are scattered over the property, but so far there has been no production. The part of the Miller property from No. 1 tunnel to about 2,000 feet to the north was visited by the writer August 23, 1940.

According to Waters,6/ the buttes are composed of three groups of lava flows. The highest and lowest of these groups are basaltic. The intermediate group, which is more than 400 feet thick and forms the greater part of the Glass Buttes, includes dacite and several other kinds of andesite, as well as perlite, obsidian, and vitrophyre. Only these glassy lavas are exposed at the quicksilver prospects. According to Waters, the volcanic rocks of the Glass Buttes form a broad anticline broken by many normal faults of diverse trends and magnitudes.

The property, which has an area of about 1.5 square miles, is underlain by lava that originally consisted almost exclusively of flowObanded glass. This lava has been extensively opalized along broad zones of northwesterly trend that extend beyond the limits of the area shown on plate 8. Halloysite, a clay mineral, is mixed with the opal, locally in some abundance. Cracks and holes in the opaline material are lined with fine-grained quartz. Other and presumably later cracks are lined with cinnabar grains. The opaline material locally has horizontal bands that may represent the flow bands of the lava which it has replaced. Most of the pits and other excavations seen by the writer show cinnabar but generally in very small amounts. The cinnabar darkens on exposure, and it can therefore be detected only by chipping the surface of the opaline material.

In several places the opaline material is broken by fractures and breccia zones that are comparatively rich in cinnabar. These trend N.55° -65° W. and most of them dip rather steeply northeastward, though a few dip toward the southwest. The largest ones thus far exposed--in No. 1 tunnel and in the bottom

of a 43-foot shaft 850 feet northeast of the portal of that tunnel--are 2 to 5 feet wide and have been followed only short distances along the strike.

The quicksilver content of a few representative samples is shown on plate 8. The samples designated by G. O. and a number were taken by the writer; the others were furnished by Mr. Miller, who also reports two samples not recorded on plate 8. One of these, from a "broken zone" 1 foot wide, contained 0.675 percent of quicksilver; the other, from a "brecciated seam," contained 0.550 percent of quicksilver. Sample G.O.2, from the bottom of the 44-foot shaft, contained 0.10 percent of mercuric chloride. As the total amount of quicksilver in this sample was only 0.22 percent, a large proportion of the metal was present as chloride, and this may be true of other parts of the deposit. This possibility should be taken into account in planning the reduction plant, and other samples should be tested for chloride. On the other hand, sample G.O.7, which

5/ Schuette, C.N., Quicksilver in Oregon: Bull. 4, State of Oregon, Dept. Geology and Min. Industries, p. 168, 1938.

6/ Waters, Aaron, A structural and petrographic study of the Glass Buttes, Lake County, Oreg.: Jour. Geology, vol. 35, No. 5, pp. 441-452, 1927.

is from a comparatively rich band 2 feet wide in No. 1 tunnel, yielded only 0.05 percent of mercuric chloride. This sample contained 0.68 percent of quicksilver.

The assays, together with observations on the ground, indicate that the quicksilver content of the opalized material ranges from a trace to about 15 pounds to the ton. Most of the samples recorded on plate 8 are from the richer parts of the deposit, so that the assays probably do not fairly represent the average tenor. It seems improbable that more than a small part of the deposit could be mined profitably at the prices that prevail under normal circumstances, but as the deposit is very large and certainly contains some fairly rich ore, further work may show that it could serve as a source of quicksilver under emergency conditions.

CONCLUSION

The deposits described in this paper include only the principal ones revealed by prospects along the route of the reconnaissance (pl. 6), but they probably are representative of others scattered over this region. Other deposits are known to occur in the region, and it is probable that still others would be revealed by careful prospecting. The region has, in the past, con-

ributed little to quicksilver production, partly because many of the deposits re not rich enough to be profitable when quicksilver prices are normal and artly because many prospectors are unfamiliar with quicksilver lodes; but the ecent abnormally high prices have aroused interest in quicksilver deposits of ll kinds and have induced many prospectors to learn how to look for them. he scanty available information is inadequate but suggests that, on the whole, he deposits within the limits of the present reconnaissance will be mainly of ow grade and profitable only during periods when the price of quicksilver is igh.

Each of the deposits described above differs from the others, and it is o be expected that distinctly different types will be found in other parts of he region. As cinnabar deposits rarely contain abundant sulphides of other etals, their outcrops are less deeply colored, in general, than those of other etalliferous deposits; they tend, rather, to be paler than the surrounding ocks. This is not an invariable rule, but it applies to many of the deposits n and near the region here considered. Any area of conspicuously light-olored rocks should therefore be examined, especially if opal and other fine-rained forms of silica are abundant in them; and it should be remembered that innabar darkens so readily as rarely to be recognizable on the surface of an utcrop. Rock that seems likely to contain cinnabar should therefore be ex-mined on freshly chipped surfaces.

(Copied from USGS Bulletin 931-B, 1941, by Clyde P. Ross)

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 Oregon, County of Lakeview, described as follows:1/

See separate listing 3 f.

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/ Nevada Scheelite Corporation
430 South Maine Street
Fallon, Nevada

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 In paragraph 2 the words "the period fixed in the contract or any amendment thereof has" are substituted for "ten years have."

Dated this 16 day of April, 1955.

E W Pringle [Seal]

Elizabeth Pringle [Seal]

Arnold E Olesson [Seal]

Vida Olesson

Note: Please give below the addresses of signers of this form.

The above all resdie at Ronan, Montana

MF-203
(Revised July 1, 1954)

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See separate listing 3.f.

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Dated this 16 day of April, 1955.

E W Pringle [Seal]

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Harold E Olesen [Seal]

Vida Olesen

Note: Please give below the addresses of signers of this form.

The above all reside at Ronan, Montana

MF-203
(Revised July 1, 1954)

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430 South Maine Street
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4. a. Philip M. McKenna, the assigner, in the past six months has rehabilitated Tunnel No.1, (retimbered and installed track, etc) and has also driven approximately 350 feet of drift and x-cuts , an incline 115 foot raise has been driven to the surface from the tunnel as shown on the attached sketch. Some $7500.00 worth of Bulldozing work in surface trenching and road building was done. A total of over $30,000.00 was expanded by Mr. McKenna.The old workings are described in USGS Bulletin 931-B, a copy of which is also attached. There appears to be two areas of mineralization within the boundries of the claims in question. The first referred to as the north section where there are ore sections or exposures cut by Tunnel No.1 and a 44 foot shaft. There is a vertical winze in Tunnel No.1 approximately 40 feet deep and in 160 feet from the portal. The south area has 2 tunnels which have not been rehabilitated but are accessable for examination.

b. There has been no production except one pilot run of about 50 tons in a small custom furnace in which the condensor system was far too small for this type of ore. The head sample for this run assayed about 10 pounds per ton of Mercury. Samples of the ore in place have run from 1 to 312 pounds per ton.

c. The ore occurance is Cinnabar in a brecciated opalite formation, the enrichments occuring in faults, which are numerous and vary from vertical to a dip of 54 degress to the north. Because of the numerous faults and the brecciated character of the opalite the ascending solutions were so disseminated that the commercial areas, at least, to the depth of the present workings are small, with sections of high grade ore. The purpose of the exploration program covered in this application is to first determine if the mineralization below the opalized zone is more restricted resulting in better commercial occurences.

Nevada Scheelite Corporation, 430 South Maine, St., Fallon, Nevada

4.c cont'd We understand that this condition prevails at the Cordero Mine, operated by the Sun Oil Company. located about 12 miles west of McDermitt, Nevada. Second: if the first condition cannot be proven, to determine the extent of the existing exposures to see if they will justify the installation of a furnace. It is proposed to first explore the north occurence and if the results are satisfactory to explore the south area in the same manner.

d. The property is easily accessable by all means of transportation and is served by a paved highway (US 20) running between Burns and Bend, a bladed desert road for 3½ miles from the highway to the mine running in a southerly direction. The turn off is between the 81 and 82 mile posts on the highway, Burns is about 53 miles easterly from the mine while Bend is about 85 miles in the opposite direction.

e. Work on the property was conducted by Mr. McKenna continuously from October 1954 thru March 1955 and no difficulties were encountered in obtaining supplies or labor, and climatic conditions were not severe enough to halt work. Currently water is hauled from a well about a mile and a half distance, gasoline was used for power for the compressor while butane was used for heating and cooking.

5.a. Cinnabar

b. It is proposed to first churn drill the poperty, starting on the slope below the main outcrop and in line with the raise section, so that the first hole will cut the ore section at a depth of 200 feet, then moving out the slope so each new hole will give an additional depth of 100 feet, the number of holes and depth will be dependent upon the findings. It is also proposed to drive a sublevel about 30 feet down from the collar of the shaft in a westerly direction to ascertain the value and width of this orebody. As stated earlier the amount of future work will be dependent upon these first findings.

c. It is hoped to start the work within 15 days and to be completed within 6 months from the date of an exploration project contract.

d. The entire staff of the Nevada Scheelite Corporation will be available for consultation purposes and the direct supervision will be handled by John Gomes who is a graduate of the Mackay School of Mines , University of Nevada and has spent the last 44 months working for the Codero Mining Company, Nevada's LARGEST quicksilver mine.

6.a. In estimating the cost and extent of the proposed exploration it would appear that any cost estimates should be flexible enough to allow for conditions which maybe met but that cannot be accurately predicated, such as, the casing of drill holes thru broken formation and extent of timbering where same conditions prevail in drifting, sinking or x-cutting. In the later case the cost of timbering is somewhat offset by the limited amount of drilling and explosives required. Likewise the extent of the program especially in regard to the drilling is dependent on the depth of the opalite, therefore in this inital application on gross expenditures of $20,000.00 is set up with distributed costs it is anticipated that they can be changed to conform to the recommendations of the Bureau Engineers. Underground work, 125 feet of drifting on a westerly sublevel and say 75 feet of x-cutting to determine width of ore. 200 feet @ $35.00 $7000.00

6.a. $8000.00 for churn drilling and $5000.00 for sampling, assaying, equipment rental, supervision, etc.

Part of the churn drilling will be contracted, the driller at a rate of $1.50 per foot for his labor, and the rent of a drill at $100 per foot. With misc. costs in addition it should be done for $4.00 per foot.

b. Superintendent @ $700.00 per month
Consulting @ 300.00 " "
2 Miners @ 1.75 per hour
2 Helpers @ 1.70 " "
1 Cook @ 1.50 " "

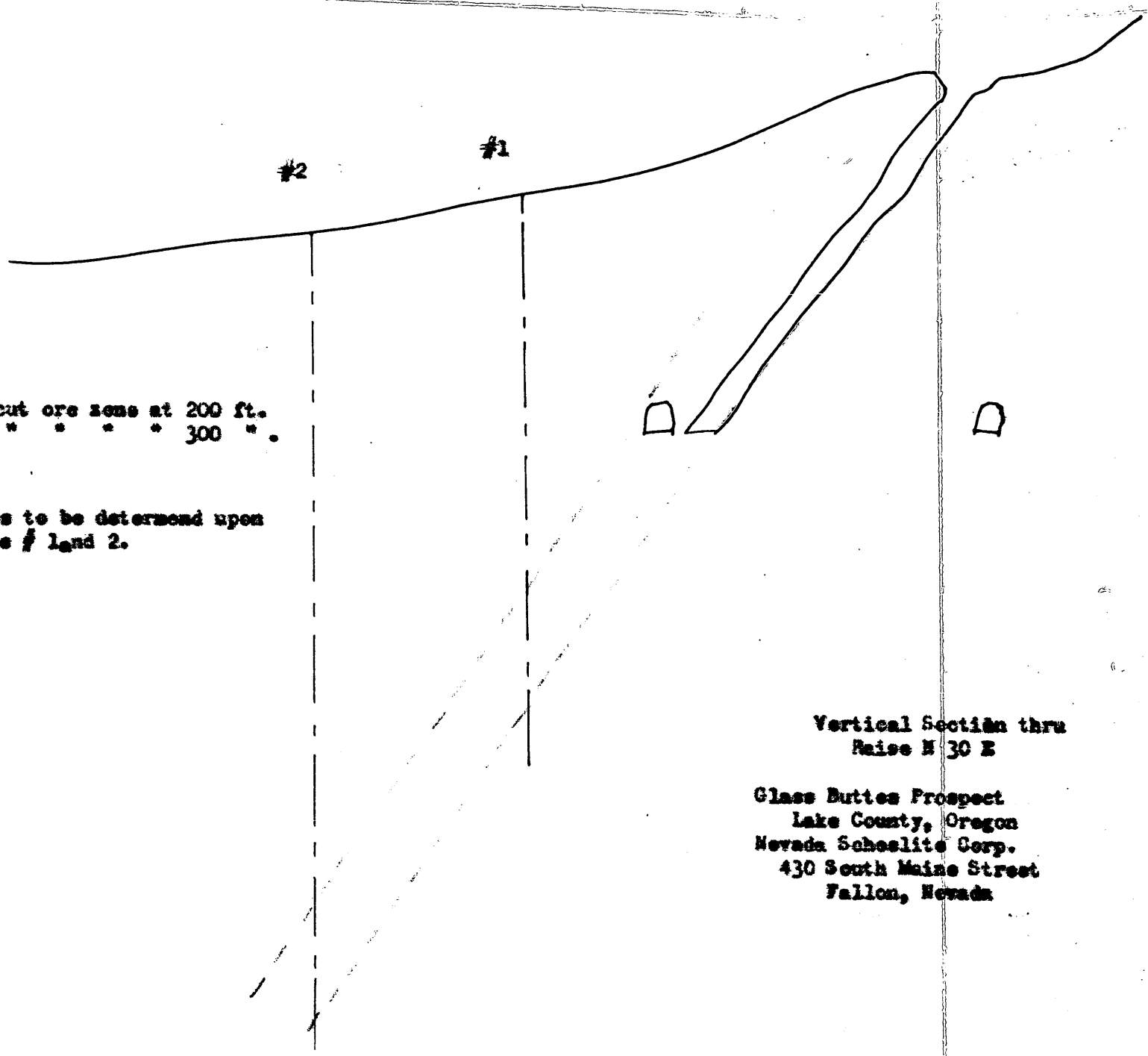
d. 1 Jackhammer @ $75.00 per month
Steel & Bits 100.00 " "
1 Air Compressor @ $400.00 per month
Pipe and fitting are on the job, also small tools.

d. 50 gallons Gasoline per day @ 30¢
20 " Butane " " @ 20¢
Lub. oil " " $1.50
Food for 8 men per day @ $2.00 , $16.00,
Powder, fuse and Caps while x-cutting $15.00 per day
Misc. Supplies @ $5.00 per day.

e. The buildings and plant have all been rehabilitated.
f. If any new living quarters should be needed we will rent suitable house trailers which may be rented in Bend at $45. per month.

g. Bookkeeping $100.00 per month
Assaying supplies $300.00 per month
State Insurance as listed for different types of employment.
2 % payroll tax.

7.a Yes
b. To defray the monthly expenses and bill the goverment agency for their proportional share of the cost, evidenced by adequate receipts of expenditures.



Drill Hole #1 to cut ore zone at 200 ft.
" " #2 " " " " " 300 ".

Other Drill Holes to be determond upon results of Holes # 1 and 2.

Vertical Section thru
Raise N 30 E

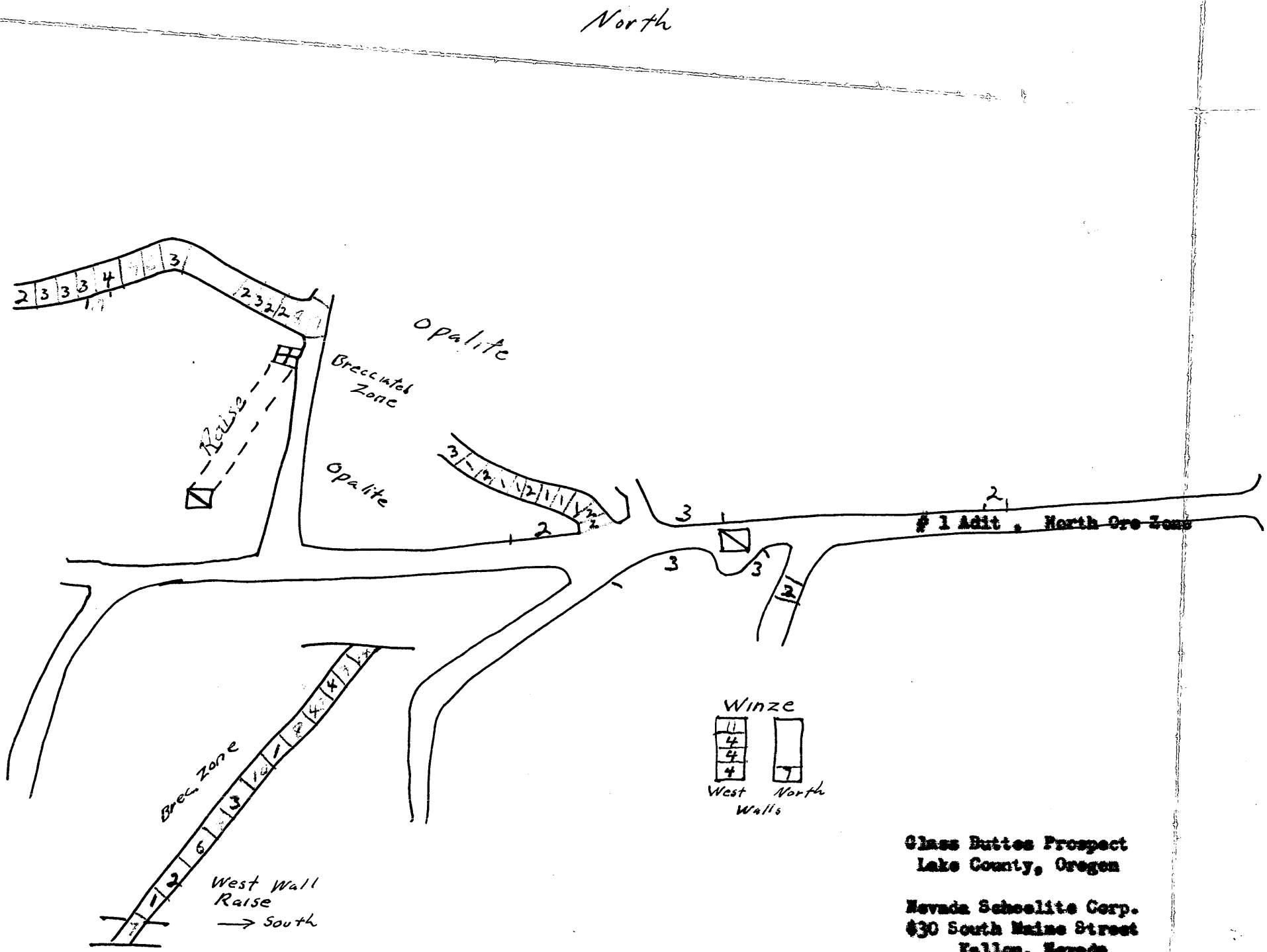
Glass Buttes Prospect
Lake County, Oregon
Nevada Scheelite Corp.
430 South Maine Street
Fallon, Nevada

Drill hole #1 to cut ore zone at 200 ft.
" " #2 " " " " 300 " .

Other Drill Holes to be determined upon results of Holes # 1 and 2.

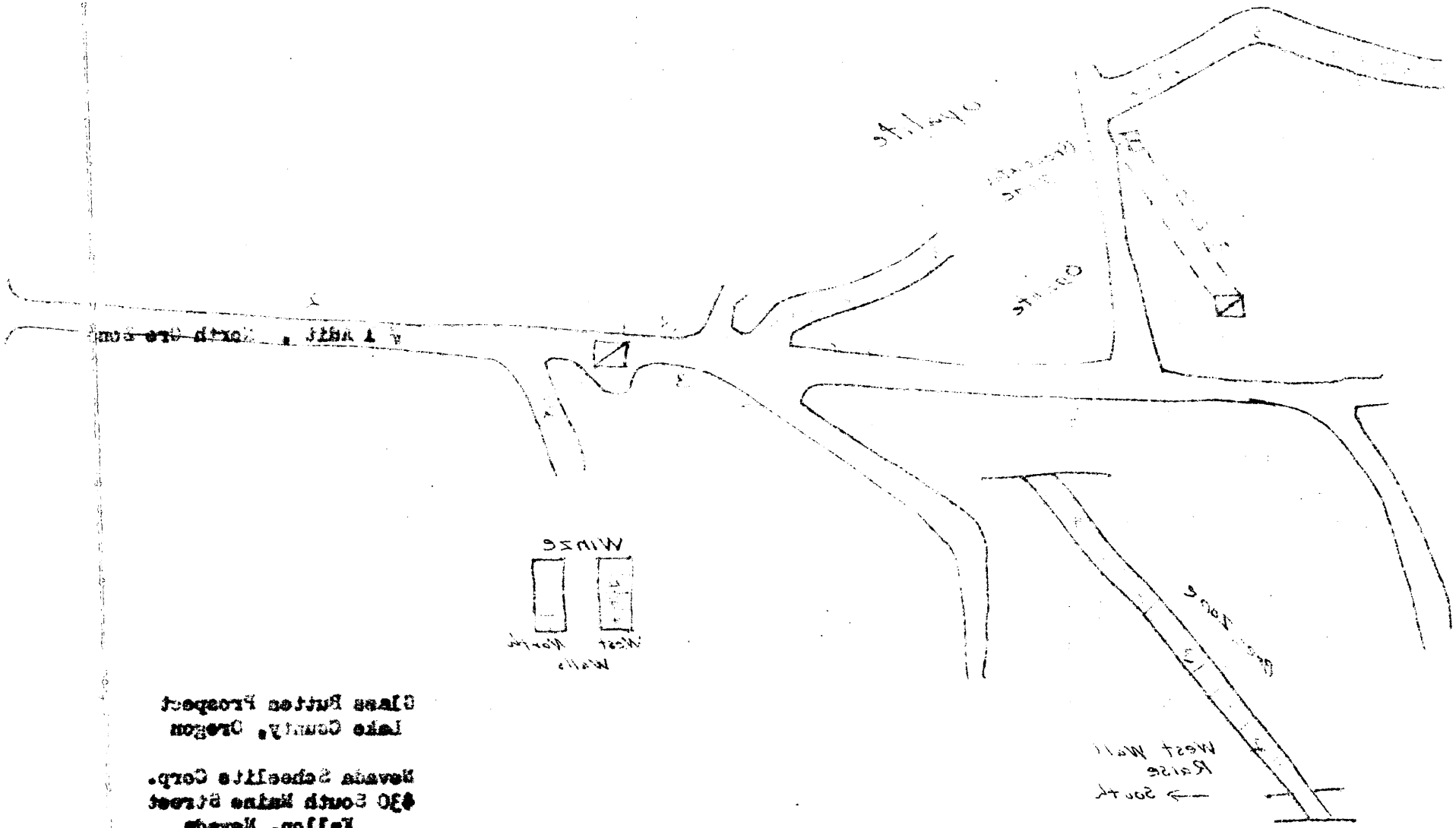
Vertical Section thru
Holes # 30 &

Glass Butte Prospect
Lake County, Oregon
Nevada Scheelite Corp.
420 South Main Street
Fallon, Nevada



Glass Buttes Prospect
Lake County, Oregon

Nevada Scheelite Corp.
830 South Maine Street
Fallon, Nevada



Glass Butte Prospect
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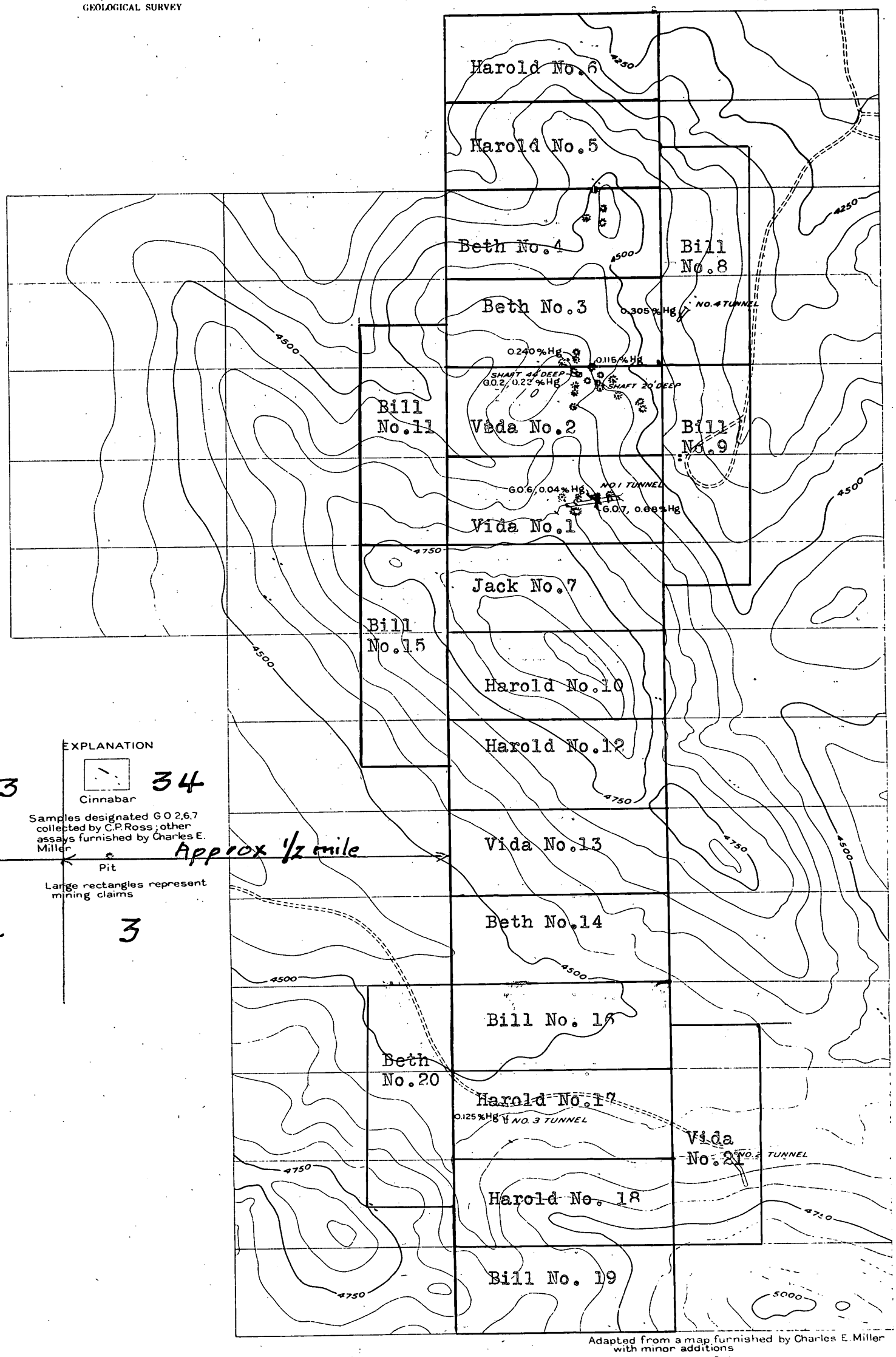


Adapted from a map furnished by Charles E. Miller with minor additions

TOPOGRAPHIC SKETCH MAP OF GLASS BUTTES PROSPECT, LAKE COUNTY, OREGON

1,000 0 2,000 Feet

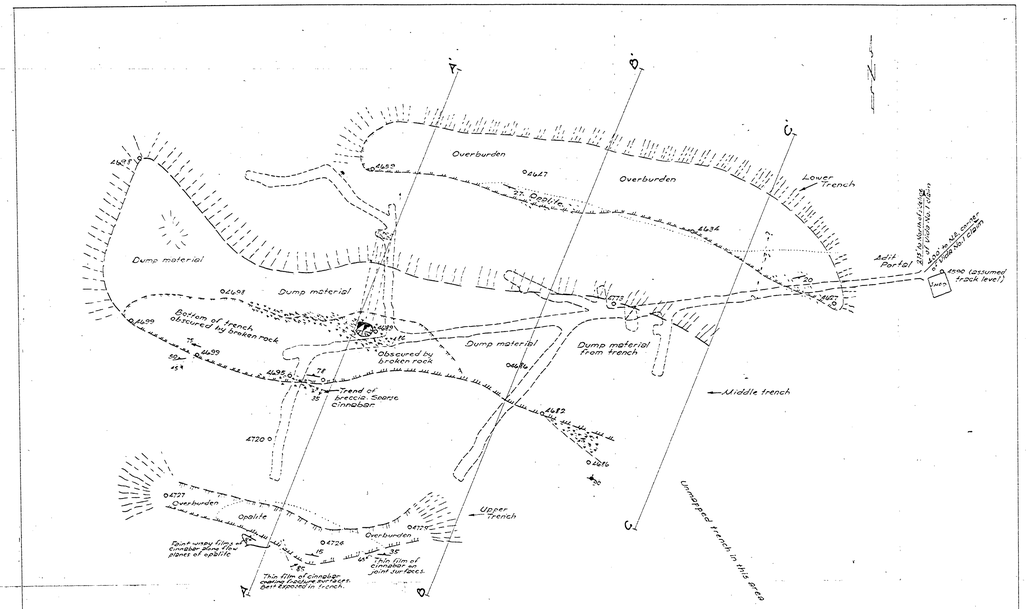
Contour interval 50 feet, datum mean sea level (approximate)

AUGUST 1940

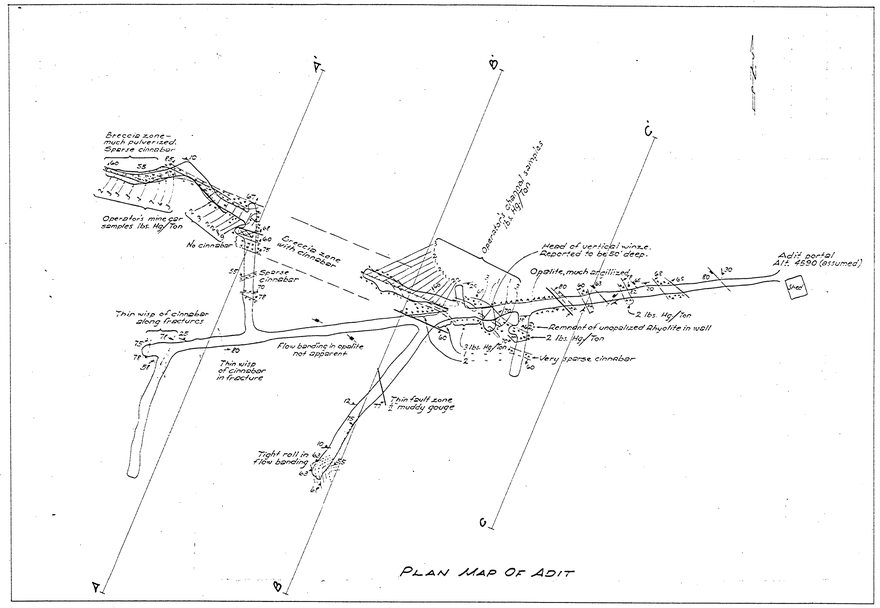
DEFENSE MINERALS
EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

Mr. Orland T. Huyck
Chief Clerk
House Committee on Interior
and Insular Affairs
House of Representatives
Washington 25, D. C.



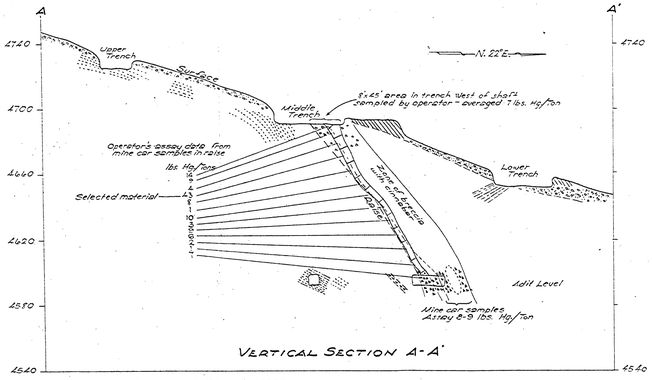
COMPOSITE PLAN MAP OF TRENCHES AND ADIT SHOWING GEOLOGY IN TRENCHES



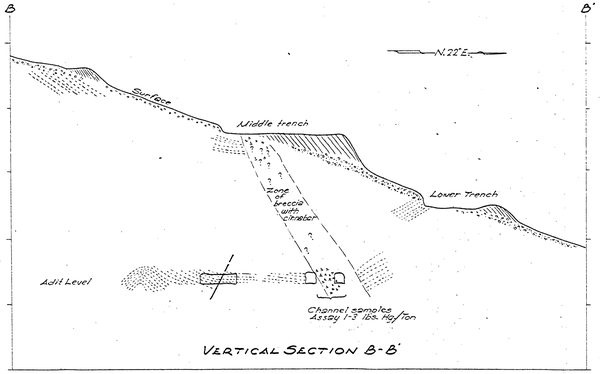
PLAN MAP OF ADIT

EXPLANATION

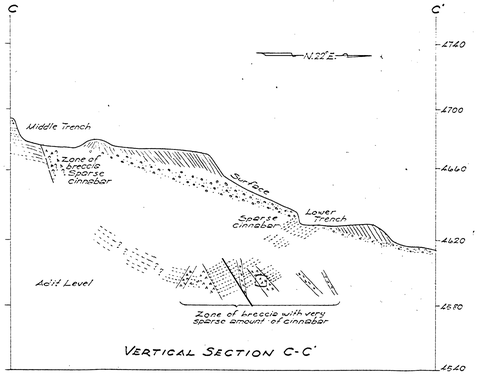
- Opalized rhyolite (opalite)
- Zone of brecciated opalite
- Area containing cinnabar
- Strike and dip of flow banding in rhyolite and opalite
- Fault, showing dip
- Fracture containing cinnabar
- Vertical joint
- Joint, showing dip
- Contact, showing dip
- Dump material in section
- Flow banding in section
- Overburden, in section
- Bottom of incline
- Head of incline
- Head of winze
- Outer limit of dump
- Margin of trench bottom
- Brunton and tape traverse station, showing altitude
- Line of vertical section



VERTICAL SECTION A-A'



VERTICAL SECTION B-B'



VERTICAL SECTION C-C'

ALL ASSAY DATA FROM COMPANY RECORDS
OUTLINE OF WORKINGS AND GEOLOGY 2-18-26
D.F. KELLUM, W.P. PUTNAM, U.S.G.S.

PLAN AND SECTION MAPS OF GEOLOGY
AT GLASS BUTTE MERCURY PROSPECT
SEC. 34 T. 23 S. R. 23 W.M.
LAKE COUNTY, OREGON

Scale 40 0 40 80 120 Feet