DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

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DMEA ~~DMA~~ Docket No. 2374

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EXPLORATION PROJECT

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

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ONE COPY TO USBM, USGS, & REGION III

To: CODE 500, RM. 2614 Date 2-15-52

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1/23/52 - Inactive and to be regarded as such until Applicant replies and sends requested information.

J.W.C.

Mr. Alf

I do not concur with the opinions of the commodity men and Field Team

[illegible]

FILE COPY
SURNAME:

140

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

Block Hoover

August 14, 1953

Memorandum

To: The Administrator
Through: W. S. Martin

From: Chief Counsel

Subject: Irving & Nelson - Docket No. DMEA-2374

There is attached, in satisfactory legal form for execution, a contract covering the above-described project, subject to the attachment of the map referred to in Exhibit "A".

Your attention is invited to the fact however, that this lease expires June 30, 1956. The Operator in addition to being the lessee is the owner of a one-fourth interest in the property. The Anaconda Copper Company and the National Bank of Commerce of Seattle together own a three-fourth interest but refuse to sign an Owner's Consent to Lien. The Operators have signed a Guaranty but it is not attached to the contract because it does not add to the Operator's obligations under the contract as the "proviso" in Article 7 has been stricken out. If you are satisfied with the financial responsibility of the Operators, an Owner's Consent to Lien will not be required.

J. L. Hofflund
Chief Counsel

Attachments

AEKane/ema
cc: Mails & Files
J. L. Hofflund
A. E. Kane
Chron.

HHR
8-14-53

500 FILE COPY
SURNAME:

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

DEC 10 1952

Mr. Glenn A. Smith, President
Glenn A. Smith and Associates
555 South Alexandria Avenue
Los Angeles 5, California

Re: Docket No. [illegible]A-2374 (Zinc-Lead)
Black Hawk Mining Company
Kern County, California

Dear Mr. Smith:

Receipt is acknowledged of your letter to this administration, dated December 3, 1952, in which you inform us that the Black Hawk Mining Company is unable to proceed with the development of their mine because of inability to procure a development loan from Defense Minerals Administration or private sources and, therefore, we may close our file on the subject.

Your application for exploration assistance is being placed in the inactive file. If at some future date you wish to submit a new application, the subject docket will be available for reference. Copies of your letter of December 3 and our reply to it are being sent to our regional office in San Francisco.

Your interest in the defense program is appreciated, and we wish to thank you for bringing your property to the attention of the Government.

Sincerely yours,

C. O. Mittendorf

Administrator

JWAlt/hmj (12-8-52)
Copy to: Adm. Reading File
Operating Committee
Docket Copy
Mr. Keller (2)
Mr. Alt
Mr. Kinkle
Mr. Bishop

GLENN A. SMITH
and Associates

INTERNATIONAL MERCHANTS SINCE 1921

555 SO. ALEXANDRIA AVE. • LOS ANGELES, CALIF. • TELEPHONE DUNKIRK 2-2155 -- CABLE, APEX

INDUSTRIAL MATERIALS DIVISION

Gas

December 3, 1952

AIRMAIL

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 4 1952

U.S. Department of The Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-2374 (Zinc-Lead)
Black Hawk Mining Company
Kern County, California

Attention: Mr. C. O. Mittendorf

Dear Mr. Mittendorf:

In response to your letter of November 28, we should have informed you some time ago that the Black Hawk Mining Company was unable to proceed with the development of their mine because of inability to procure a development loan from DMA or private sources. Therefore you may close your file on the subject.

Yours very truly,

Glenn A. Smith
President

GAS:CCJ

FILE COPY
SURNAME:

500

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

NOV 28 1952

Mr. Glenn A. Smith, President
Glenn A. Smith and Associates
555 South Alexandria Avenue
Los Angeles 5, California

Re: Docket No. DMEA-2374 (Zinc-Lead)
Black Hawk Mining Company
Kern County, California

Dear Mr. Smith:

On May 1, 1952, we wrote to you advising you that upon your request we would place your application for exploration assistance in our pending file until such time as the negotiations for the installation of a small smelter were concluded, and that we would appreciate your advising us as soon as possible as to the results of the negotiations so that final action may be taken on your application.

Will you please advise us at your earliest convenience whether you are still interested in the application or whether you wish it withdrawn from the active files.

Sincerely yours,

C. O. Mittendorf
Administrator

(for) S.H.
11-28-52

JWAlt/bjl (written 11/26/52)

Copy to: Docket
Admr. R. File
Op. Committee
Mr. Keller (2)
Mr. Alt
Mr. Bishop
Mr. Kinkle
Reg. III (2)
Chron.

IN REPLY REFER TO:

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

July 9, 1952

Memorandum

Re: DMEA-2374
Black Hawk Mine
Caliente District
Kern County, California
$24,905
Zinc - lead

To: Mr. H. F. Keller

From: E. L. Newcomb, USGS
E. O. Bishop, USBM

Subject: Review of application

The applicant requests Government assistance to explore the Black Hawk mine by core drilling and drifting between 2 adit levels on a zone of oxidized mineralization. The application does not give the amount of each type of work which would be included in the project. More information about the applicant's proposal has been requested, but to date he has failed to supply this information.

A field examination has been made of the property. Low grade zinc mineralization, with a little associated lead, occurs as a replacement of a bedded zone about 15 feet thick in a series of metamorphosed sedimentary rocks dipping 50-60° SE. The zone is developed by short drifts (100 ft., 75 ft.) off of two short adits about 250 feet apart and at different levels. The field team states that the applicant proposes to drift 400 feet southwesterly from the No. 2 adit level and to drive 4 raises on possible mineralization from the new drift; and to core drill 2 holes between the portals of the No. 1 and No. 2 adit levels to a depth of 100-200 feet below the proposed drift. Because previous drilling on the property resulted in poor core recovery, the field team does not recommend the proposed core drilling. They also consider the amount of raising is excessive for exploration purposes.

The field team reports sulfide zinc mineralization through about half of the 100 feet of drift on the No. 1 level, the rest of the drift showing highly oxidized material. Mineralization over the 40 feet or so exposed on the ore zone in the No. 2 level is largely oxidized, containing only sparse sulfide. Other outcrops on the extension of the ore zone show oxidized zinc minerals. The field team concludes, after extensive sampling, that any ore opened up by the proposed exploration will average about 5 per cent zinc and will probably be largely oxidized.

It is worth noting that the applicant's consultant, Wm. O. Jenkins, Jr. writes in his Conclusion "Assuming that the problems involved in concentration, smelting or other treatment of the mined ore

can be overcome, the mine itself could be developed rapidly to the point where a steady production of 50 tons (of ore) per day could be maintained. Production of no more than 50 tons daily is recommended at this time because of the present lack of working faces from which to mine a greater tonnage." Also the applicant in his statement attached to MF-100, item 7 (a) writes, "This mine can be profitably operated only if the ore is smelted in a smelter adjacent or near to the mine, as planned by the Black Hawk Mining Company."

In other words, both the applicant and his consultant, Mr. Jenkins, recognize the difficulties of reduction, and well they might. An ore of the apparent grade and oxidized nature of this orebody cannot be profitably beneficiated or marketed.

No smelter could be erected at the property to smelt ores or concentrate of the indicated character for there would be no margin of operating profit. We know of no smelter which would accept ore of this grade gratis.

Conclusion:

In face of the submarginal nature of the ore under present metallurgical technology, we see no alternative to a denial.

E. L. Newcomb
E. L. Newcomb
Geologist

O. M. Bishop
O. M. Bishop
Mining Engineer

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

July 9, 1952

Memorandum

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Black Hawk Mine
Caliente District
Kern County, California
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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

Office of
Executive Officer
DMEA Field Team
Region III

1012 Flood Building
870 Market Street
San Francisco 2, Calif.

June 3, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 9 1952

Memorandum

To: Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Black Hawk Mining Company, Docket DMEA-2374 (Lead-Zinc)

Attached are the original and three copies of a report, "DMEA-2374, Black Hawk Mine, Kern County, California", by C. D. Rinehart and D. B. Tatlock, Geologists, U. S. Geological Survey, dated May 29, 1952.

The Black Hawk zinc mine, contains a maximum of 90,000 tons of inferred ore containing 5 percent zinc in a block 350 feet long, 15 feet in horizontal width, and 180 feet in average height. In view of the low grade and the probability that most of the ore in this block is oxidized, thus creating a metallurgical problem, the ore is believed to be sub-marginal at the present time. However, the apparent continuity of the ore-bearing structure presents a possibility of developing an appreciable tonnage of low-grade zinc ore on the property. If it is in the interest of the Government to explore for ore of this character and grade the proposal of the applicant should be granted, except that the proposed drilling should be omitted. The applicant's cost estimates for the work are $24,905, which without the drilling might be reduced to about $20,000. This would cover 400 feet of drifting and about 400 feet of raises. It is recommended that if the program is approved an attempt be made to have the applicant agree to a per foot cost of $25, and a contract be drawn up on this basis of $25 per foot for drifting and raising.

Subject docket is being returned herewith.

H. C. Miller
Executive Officer
DMEA Field Team, Region III

Attachments

Copy to E. H. Bailey, USGS

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINSTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 2374, Black Hawk Zinc Mine

Kern County, California

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 9 1952

C. D. Rinehart, Geologist
D. B. Tatlock, Geologist
U. S. Geological
Survey

May 29, 1952

Summary and Conclusions

The Black Hawk zinc mine, Kern County, California contains a maximum of 90,000 tons of inferred ore containing 5 percent zinc in a block 350 feet long, 15 feet in horizontal width and 180 feet in average height. In view of the low grade and the probability that most of the ore in this block is oxidized, thus creating a metallurgical problem, the ore is believed to be submarginal at the present time. However, the apparent continuity of the ore-bearing structure presents a possibility of developing an appreciable tonnage of low-grade zinc ore on the property. If it is in the interest of the Government to explore for ore of this character and grade the proposal of the applicant should be granted, except that the proposed drilling should be omitted. The applicant's cost estimates for the work are $24,905, which without the drilling might be reduced to about $20,000. This would cover 400 feet of drifting and about 400 feet of raises. It is recommended that if the program is approved an attempt be made to have the applicant agree to a per foot cost of $25, and a contract be drawn up on this basis of $25 per foot for drifting and raising.

Introduction

The Black Hawk zinc mine was examined in connection with the application of the Black Hawk Mining Company for Government participation in a $28,000 program to explore a portion of the property. In examining the property, C. D. Rinehart and D. B. Tatlock of the Geological Survey spent May 2-5,1952, inclusive, in preparing geologic maps of the underground workings and the surface area, and in sampling the various showings of mineralized rocks. H. H. Records and R. B. Records, representatives of the Black Hawk Mining Company, were present during one day of the examination.

The property is in the SW¼, sec. 5, T. 31 S., R. 33 E., MDBM, in the Caliente mining district, Kern County, California, about 8.6 airline miles north of the town of Tehachapi and 9.8 airline miles east-southeast of Caliente, on the southwest flank of the Sierra Nevada. It is most easily accessible from Caliente by going east on a black-topped road up Caliente Creek Canyon 12.5 miles to Studhorse Creek, which flows north into Caliente Creek, and thence south up Studhorse Canyon on an unimproved dirt road 4 miles to the mine, at which the road ends.

The property was originally worked in the early 1930's for gold and silver ores, but no written records of this early work are available. Prior to 1946, only intermittent small-scale mining of zinc ore was carried on as, according to H. H. Records, the prevailing price of zinc was too low to support the cost of large-scale mining. The Black Hawk Mining Company, a partnership composed of H. N. Forman, H. H. Records, and R. B. Records, leased the property in 1951 from R. C. Hatton and V. E. Hatton. Work done by the company is reported to consist of 160 feet of core-drilling, and a small amount of maintenance work in the south workings. The company also reports that 67 tons of ore was mined from the north workings and was shipped to Mojave in July, 1951; this ore assayed 0.3 oz. Au, 4.3 oz. Ag, 0.74% Pb, and 11.85% Zn.

The workings on the property are divided into two groups for the purpose of description, the north and the south workings. The south workings consist of 2 levels (see plate 1). Level No. 1 consists of 170 feet of horizontal workings, 2 small stopes 15 feet high, and one winze 10 feet deep; level No. 2, 86 feet lower than level No. 1, is 190 feet in total length. The north workings, not shown on Plate 1, are 600 feet north of the south workings, and consist of 160 feet of workings on one level, and a 15 foot raise. In addition, numerous small prospect pits and trenches have been dug at various places on the property.

Equipment on the property at the time of the examination consisted of one Gardner-Denver air-compressor, 4 mine cars, 500 feet of double rail, one drifter-drill, and a 100-ton loading bin. Several flowing springs and a small stream are within one-half mile to the east of the south workings. The 4 miles of dirt road to the mine, although rough at the time of examination, should serve as an adequate haulage road after minor washouts are repaired.

The remainder of this report, except where otherwise noted, pertains to the area in the vicinity of the south workings, the site of the proposed exploration.

Geology

The area is underlain by a series of metasedimentary rocks that are bounded on the southeast by a locally concordant body of quartz-monzonite porphyry about 50 feet thick. The porphyry as seen in level No. 2 is separated from a large mass of coarse-grained, quartz-diorite gneiss to the southeast by 25 feet of altered, highly foliated, friable schist. This schist, which enclosed a small block of gneiss, is probably the same as that exposed in the road cut and may have been developed by shearing along the contact between the porphyry and the gneiss. Sparse exposures indicate that the metasedimentary rocks extend at least 200 feet northwest of the map area probably much farther. The quartz-diorite gneiss can be traced for more than one-half mile southeast of the map area.

The metasedimentary rocks include marble, calc-silicate hornfels, mica schist, and quartzite. They are medium-to fine-grained rocks and are generally well banded or foliated. The foliation and banding strike northeast and dip about 55° southeast; only minor variations in attitude were observed.

Zinc-bearing minerals are present in quartzite, calc-silicate hornfels, and, at one place, marble. The zinc-mineralized rocks occur as a zone that ranges from 15 to 20 feet in horizontal width. The zone strikes approximately N. 35° E. and dips 50°-70° southeast, parallel to the banding and foliation of the metasedimentary rocks.

Level No. 1

In this level the exposed host rock is mainly calc-silicate hornfels in which the zinc-bearing minerals are disseminated rather uniformly over a horizontal width of 20 feet. The mineralized rock is bounded on both sides

by faults dipping 50°-70° southeast, parallel to the banding and foliation of the metasediments. The hanging-wall of the ore body is 30 feet northwest of the contact between the metasedimentary rocks and the quartz-monzonite porphyry. Well-foliated schist forms the footwall and is apparently barren, as are the banded, more siliceous metasediments of the hanging-wall.

Ore exposed in the small stopes and in the winze appears to be similar to that sampled near the collar of the winze. Blocks of marble up to 20 feet long and 10 feet wide are exposed within the ore body in two places in level No. 1, and they appear to be barren except for a small irregular area about 2 feet across. The ore is unoxidized north of the blocks of marble, whereas south of the marble most of the ore has been oxidized and only a minor abount of sulfides remains.

Level No. 2

In this level the ore body is 10 feet northwest of the contact between the metasedimentary rocks and the quartz-monzonite porphyry, and is 15 feet in horizontal width. Its attitude is similar to that observed in level No. 1 but the footwall is more gradational and less distinct. The ore is in more siliceous metasediments than in level No. 1, and is associated with only minor amounts of marble. The drift follows the trend of the ore body for only 25 feet and then turns westerly to follow a small stringer containing a minor amount of chalcopyrite and galena. The applicant reports that the mined portion of this stringer contained pockets of gold ore. The principal ore body is oxidized along its exposed length and contains only sparse grains of sulfide minerals. The applicant drilled 4 horizontal core-holes totalling about 130 feet from this level, and reports that core recovery in the ore body was poor; the assays from these borings were made on drilling sludge (see plate 1).

Surface Area

On the surface, the ore crops out in only one place 200 feet west-southwest of the portal of the No. 1 level where it appears to be leached and oxidized. Float similar in appearance to the oxidized outcrop suggests the existence of the ore zone beneath the soil cover for at least 100 feet southwest of the oxidized outcrop. Widely scattered pieces of oxidized float similar to that described above, were found for more than 200 feet southwest of the map area. At the northwest end of the map area, no zinc-bearing float was found between the large prophyry outcrop and the small outcrop of schist.

Sampling

Of a total of 16 chip samples taken on the property, 2 were taken on the surface, 8 were taken in the level No. 1, and 6 were taken in level No. 2. Sample S-10, one of the two samples taken from the surface, was taken from a large block (about 300 cu. ft.) of oxidized ore which is probably not in place. It is near the small outcrop of prophyry about 50 feet east of the outcrop of oxidized ore in the west central part of the area. All other sample localities are plotted on the map and the assays are tabulated on the

same sheet. The samples were an average weight of about 7 pounds each, and were assayed by the Hydrometallurgical and Ore Testing Branch of the Bureau of Mines at Reno, Nevada.

Ore Reserves

By using the following assumptions, and a factor of 10 cubic feet of ore per ton, about 90,000 tons of 5.2 percent zinc ore are inferred: (1) the ore zone is an average horizontal width of 15 feet; (2) the ore exposed in both levels is part of a single continuous body; (3) from its exposure in level No. 2, the ore zone is continuous for 350 feet southwest along its strike at this altitude; (4) the ore zone is continuous to the surface along the length described in (2) above; (5) the average weighted grade of 5.2 percent zinc as computed from the samples, is consistent throughout the inferred block.

The above tonnage is the maximum that can be expected from the described block. If barren blocks of marble such as those exposed in level No. 1 are common within the ore body, the estimated tonnage would be decreased considerably. As little marble was found in the float, no allowance was made for other than that exposed in level No. 1.

Although there is no reason to assume that the ore body does not extend below level No. 2, mining below this level would involve either driving a crosscut several hundred feet long to intersect the body, or a costly hoisting operation; thus ore below level No. 2 was not considered in the calculation of reserves. There is a reasonable possibility that the ore body extends southwest of the limit of the calculated block for perhaps 200 feet. However, as no other outcrops of the body were observed in this direction, no reserves are inferred.

Exploration

The applicant proposes to explore the ore body in the following manner: (1) drift southwest 400 feet along the ore body from its exposure in level No. 2; (2) raise to the surface at 4 places from this drift in the following sequence: the first raise is to be approximately half-way between the portals of the two levels; the second is to connect with the winze in level No. 1; the third and fourth are to be 100 and 200 feet, respectively, southwest of the winze in level No. 1; (3) drill 2 core holes equally spaced between the portals about 100 or 200 feet below the proposed drift.

The exploration proposed by the applicant seems sound with the exception of the two core holes. Inasmuch as core recovery was poor in the drilling previously done by the applicant, there is no reason to expect better recovery in the two proposed holes. Also, the proposed number of raises seems excessive for exploration. The proposed raise to connect with the winze in level No. 1 is probably justified in order to provide an alternate means of escape and ventilation as well as exploration. A second raise at the end of the proposed drift might be justified if ore occurs along the entire length of the drift.

In addition, to the applicants' proposal, trenching at right-angles to the strike of the ore body southwest of the oxidized outcrop should expose the zinc if it exists in this area. Trenching between the large outcrop of prophyry and the small outcrop of schist at the northwest end of the map area should also reveal the zone if it extends to the surface at that point. This trenching should be done by the applicant at his own expense to prove the surface extent of the ore.

Cost of Exploration

The applicant proposes to do 400 feet of drifting, about 400 feet of raising, and an unspecified amount of diamond drilling for a total cost of $24,905.00. Without the drilling, which is not recommended, the program cost could be reduced to about $20,000, or the equivalent of $25 per foot of drifting and raising. This is a reasonable average cost per foot for doing the work in this area. It is questionable, however, if the items provided by the applicant in preparing the cost estimate include all necessary items, for also included are some overly large items such as rental of two trailers at $1200 per month and $2000 for engineering, sampling, and assaying. The time to do the work is estimated at 72 days (working?) which would require a progress per day of about 11 feet, which appears optimistic. It is suggested that if the application is approved the applicant be contacted to see if he will undertake the work on a basis of $25 per foot.

Sampling

The examination of the Black Hawk mine reveals that the exploration proposed by the applicant may result in finding a maximum of 90,000 tons of inferred ore containing 5 percent zinc. Much of this ore will be oxidized, and the grade is a little too low to be economic. If it is in the interest of the Government to explore for ore of this character and grade the proposal of the applicant should be granted, except that the proposed drilling should be omitted. The applicants' cost estimates for the work are $24,905, which without the drilling might be reduced to about $20,000. This would cover 400 feet of drifting and about 400 feet of raises. It is recommended that if the program is approved an attempt be made to have the applicants agree to a per foot cost of $25, and a contract be drawn up on this basis of $25 per foot for drifting and raising.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 2374, Black Hawk Zinc Mine

Kern County, California

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 9 1952

C. D. Rinehart, Geologist
D. B. Tatlock, Geologist
U. S. Geological
Survey

May 29, 1952

Reviewed by
DMEA OPERATING COMMITTEE
6-13-52
(date)

Summary and Conclusions

The Black Hawk zinc mine, Kern County, California contains a maximum of 90,000 tons of inferred ore containing 5 percent zinc in a block 350 feet long, 15 feet in horizontal width and 180 feet in average height. In view of the low grade and the probability that most of the ore in this block is oxidized, thus creating a metallurgical problem, the ore is believed to be submarginal at the present time. However, the apparent continuity of the ore-bearing structure presents a possibility of developing an appreciable tonnage of low-grade zinc ore on the property. If it is in the interest of the Government to explore for ore of this character and grade the proposal of the applicant should be granted, except that the proposed drilling should be omitted. The applicant's cost estimates for the work are $24,905, which without the drilling might be reduced to about $20,000. This would cover 400 feet of drifting and about 400 feet of raises. It is recommended that if the program is approved an attempt be made to have the applicant agree to a per foot cost of $25, and a contract be drawn up on this basis of $25 per foot for drifting and raising.

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The property was originally worked in the early 1930's for gold and silver ores, but no written records of this early work are available. Prior to 1946, only intermittent small-scale mining of zinc ore was carried on as, according to H. H. Records, the prevailing price of zinc was too low to support the cost of large-scale mining. The Black Hawk Mining Company, a partnership composed of H. M. Forman, H. H. Records, and R. B. Records, leased the property in 1951 from R. C. Hatton and V. E. Hatton. Work done by the company is reported to consist of 160 feet of core-drilling, and a small amount of maintenance work in the south workings. The company also reports that 67 tons of ore was mined from the north workings and was shipped to Mojave in July, 1951; this ore assayed 0.3 oz. Au, 4.3 oz. Ag, 0.74% Pb, and 11.85% Zn.

The workings on the property are divided into two groups for the purpose of description, the north and the south workings. The south workings consist of 2 levels (see plate 1). Level No. 1 consists of 170 feet of horizontal workings, 2 small stopes 15 feet high, and one winze 10 feet deep; level No. 2, 86 feet lower than level No. 1, is 190 feet in total length. The north workings, not shown on Plate 1, are 600 feet north of the south workings, and consist of 160 feet of workings on one level, and a 15 foot raise. In addition, numerous small prospect pits and trenches have been dug at various places on the property.

Equipment on the property at the time of the examination consisted of one Gardner-Denver air-compressor, 4 mine cars, 500 feet of double rail, one drifter-drill, and a 100-ton loading bin. Several flowing springs and a small stream are within one-half mile to the east of the south workings. The 4 miles of dirt road to the mine, although rough at the time of examination, should serve as an adequate haulage road after minor washouts are repaired.

The remainder of this report, except where otherwise noted, pertains to the area in the vicinity of the south workings, the site of the proposed exploration.

Geology

The area is underlain by a series of metasedimentary rocks that are bounded on the southeast by a locally concordant body of quartz-monzonite porphyry about 50 feet thick. The porphyry as seen in level No. 2 is separated from a large mass of coarse-grained, quartz-diorite gneiss to the southeast by 25 feet of altered, highly foliated, friable schist. This schist, which enclosed a small block of gneiss, is probably the same as that exposed in the road cut and may have been developed by shearing along the contact between the porphyry and the gneiss. Sparse exposures indicate that the metasedimentary rocks extend at least 200 feet northwest of the map area probably much farther. The quartz-diorite gneiss can be traced for more than one-half mile southeast of the map area.

The metasedimentary rocks include marble, calc-silicate hornfels, mica schist, and quartzite. They are medium-to fine-grained rocks and are generally well banded or foliated. The foliation and banding strike northeast and dip about 55° southeast; only minor variations in attitude were observed.

Zinc-bearing minerals are present in quartzite, calc-silicate hornfels, and, at one place, marble. The zinc-mineralized rocks occur as a zone that ranges from 15 to 20 feet in horizontal width. The zone strikes approximately N. 35° E. and dips 50°-70° southeast, parallel to the banding and foliation of the metasedimentary rocks.

Level No. 1

In this level the exposed host rock is mainly calc-silicate hornfels in which the zinc-bearing minerals are disseminated rather uniformly over a horizontal width of 20 feet. The mineralized rock is bounded on both sides

by faults dipping 50°-60° southeast, parallel to the banding and foliation of the metasediments. The hanging-wall of the ore body is 30 feet northwest of the contact between the metasedimentary rocks and the quartz-monzonite porphyry. Well-foliated schist forms the footwall and is apparently barren, as are the banded, more siliceous metasediments of the hanging-wall.

Ore exposed in the small stopes and in the winze appears to be similar to that sampled near the collar of the winze. Blocks of marble up to 20 feet long and 10 feet wide are exposed within the ore body in two places in level No. 1, and they appear to be barren except for a small irregular area about 2 feet across. The ore is unoxidized north of the blocks of marble, whereas south of the marble most of the ore has been oxidized and only a minor abount of sulfides remains.

Lev 1 No. 2

In this level the ore body is 10 feet northwest of the contact between the metasedimentary rocks and the quartz-monzonite porphyry, and is 15 feet in horizontal width. Its attitude is similar to that observed in level No. 1 but the footwall is more gradational and less distinct. The ore is in more siliceous metasediments than in level No. 1, and is associated with only minor amounts of marble. The drift follows the trend of the ore body for only 25 feet and then turns westerly to follow a small stringer containing a minor amount of chalcopyrite and galena. The applicant reports that the mined portion of this stringer contained pockets of gold ore. The principal ore body is oxidized along its exposed length and contains only sparse grains of sulfide minerals. The applicant drilled 4 horizontal core-holes totalling about 130 feet from this level, and reports that core recovery in the ore body was poor; the assays from these borings were made on drilling sludge (see plate 1).

Surface Area

On the surface, the ore crops out in only one place 200 feet west-southwest of the portal of the No. 1 level where it appears to be leached and oxidized. Float similar in appearance to the oxidized outcrop suggests the existence of the ore zone beneath the soil cover for at least 100 feet southwest of the oxidized outcrop. Widely scattered pieces of oxidized float similar to that described above, were found for more than 200 feet southwest of the map area. At the northwest end of the map area, no zinc-bearing float was found between the large prophyry outcrop and the small outcrop of schist.

Sampling

Of a total of 16 chip samples taken on the property, 2 were taken on the surface, 8 were taken in the level No. 1, and 6 were taken in level No. 2. Sample S-10, one of the two samples taken from the surface, was taken from a large block (about 300 cu. ft.) of oxidized ore which is probably not in place. It is near the small outcrop of prophyry about 50 feet east of the outcrop of oxidized ore in the west central part of the area. All other sample localities are plotted on the map and the assays are tabulated on the

same sheet. The samples were an average weight of about 7 pounds each, and were assayed by the Hydrometallurgical and Ore-Testing Branch of the Bureau of Mines at Reno, Nevada.

Ore Reserves

By using the following assumptions, and a factor of 10 cubic feet of ore per ton, about 90,000 tons of 5.2 percent zinc ore are inferred: (1) the ore zone is an average horizontal width of 15 feet; (2) the ore exposed in both levels is part of a single continuous body; (3) from its exposure in level No. 2, the ore zone is continuous for 350 feet southwest along its strike at this altitude; (4) the ore zone is continuous to the surface along the length described in (2) above; (5) the average weighted grade of 5.2 percent zinc as computed from the samples, is consistant throughout the inferred block.

The above tonnage is the maximum that can be expected from the described block. If barren blocks of marble such as those exposed in level No. 1 are common within the ore body, the estimated tonnage would be decreased considerably. As little marble was found in the float, no allowance was made for other than that exposed in level No. 1.

Although there is no reason to assume that the ore body does not extend below level No. 2, mining below this level would involve either driving a crosscut several hundred feet long to intersect the body, or a costly hoisting operation; thus ore below level No. 2 was not considered in the calculation of reserves. There is a reasonable possibility that the ore body extends southwest of the limit of the calculated block for perhaps 200 feet. However, as no other outcrops of the body were observed in this direction, no reserves are inferred.

Exploration

The applicant proposes to explore the ore body in the following manner: (1) drift southwest 400 feet along the ore body from its exposure in level No. 2; (2) raise to the surface at 4 places from this drift in the following sequence: the first raise is to be approximately half-way between the portals of the two levels; the second is to connect with the winze in level No. 1; the third and fourth are to be at 100 and 200 feet, respectively, southwest of the winze in level No. 1; (3) drill 2 core holes equally spaced between the portals about 100 or 200 feet below the proposed drift.

The exploration proposed by the applicant seems sound with the exception of the two core holes. Inasmuch as core recovery was poor in the drilling previously done by the applicant, there is no reason to expect better recovery in the two proposed holes. Also the proposed number of raises seems excessive for exploration. The proposed raise to connect with the winze in level No. 1 is probably justified in order to provide an alternate means of escape and ventilation as well as exploration. A second raise at the end of the proposed drift might be justified if ore occurs along the entire length of the drift.

In addition to the applicants' proposal, trenching at right-angles to the strike of the ore body southwest of the oxidized outcrop should expose the zinc if it exists in this area. Trenching between the large outcrop of prophyry and the small outcrop of schist at the northwest end of the map area should also reveal the zone if it extends to the surface at that point. This trenching should be done by the applicant at his own expense to prove the surface extent of the ore.

Cost of Exploration

The applicant proposes to do 400 feet of drifting, about 400 feet of raising, and an unspecified amount of diamond drilling for a total cost of $24,905.00. Without the drilling, which is not recommended, the program cost could be reduced to about $20,000, or the equivalent of $25 per foot of drifting and raising. This is a reasonable average cost per foot for doing the work in this area. It is questionable, however, if the items provided by the applicant in preparing the cost estimate include all necessary items, for also included are some overly large items such as rental of two trailers at $1200 per month and $2000 for engineering, sampling, and assaying. The time to do the work is estimated at 72 days (working?) which would require a progress per day of about 11 feet, which appears optimistic. It is suggested that if the application is approved the applicant be contacted to see if he will undertake the work on a basis of $25 per foot.

Sampling

The examination of the Black Hawk mine reveals that the exploration proposed by the applicant may result in finding a maximum of 90,000 tons of inferred ore containing 5 percent zinc. Much of this ore will be oxidized, and the grade is a little too low to be economic. If it is in the interest of the Government to explore for ore of this character and grade the proposal of the applicant should be granted, except that the proposed drilling should be omitted. The applicants' cost estimates for the work are $24,905, which without the drilling might be reduced to about $20,000. This would cover 400 feet of drifting and about 400 feet of raises. It is recommended that if the program is approved an attempt be made to have the applicants agree to a per foot cost of $25, and a contract be drawn up on this basis of $25 per foot for drifting and raising.

500

FILE COPY
SURNAME:

Moulds

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

JUN 5 1952

Hon. Thomas H. Werdel
House of Representatives
Washington 25, D. C.

Re: Black Hawk Mining Co.
Docket No. DMEA 2374

My dear Mr. Werdel:

With reference to your letter of May 28, 1952 enclosing a letter from Mr. Glenn A. Smith concerning the application of the Black Hawk Mining Company for exploration project assistance, the latest information available in this office is Mr. Smith's request, under date of April 22, 1952, to defer consideration of the application until negotiations between the owners and foreign interests for installation of a small smelter are concluded.

As indicated in previous correspondence, the company has been requested to furnish additional information on various phases of the project and management which will permit consideration of a definite program, and, also, the necessity of Owner's subordination. This information has not been supplied.

The letter of May 22, 1952 indicates that further exploration is not required in the opinion of the Government engineers and that the original application for a direct loan should be reconsidered. This office did not request a field examination of this property, and a report from the San Francisco Regional Office has not been received recently. We cannot advise as to the possibilities for reconsideration based on the results of the recent examination of the mine.

As you know, the delegation of authority by the Defense Materials Procurement Agency to the Defense Minerals Exploration Administration covered only the administration of the exploration program. The function of the Defense Production Act pertaining to production loans, therefore, remains with the Defense Materials Procurement Agency. Under the circumstances, the Defense Minerals Exploration Administration is without authority or jurisdiction to reconsider the original application for construction of a smelter. The field examination referred to by Mr. Smith may concern the Defense Materials Procurement Agency, and a request for reconsideration of the loan should be made by the applicant directly to this Agency.

In event the Black Hawk Mining Company decides to accomplish further exploration and will furnish the information requested in previous letters to Mr. Forman and to Mr. Smith, the Defense Minerals Exploration Administration will be pleased to continue processing of the exploration project application.

Sincerely yours,

C. O. Mittenderf (fw) J.N. 6-5-52

Acting Administrator
Defense Minerals Exploration
Administration

DEMoulds/mef
6/4/52
cc to: Adm. R. File
Docket
Region III (2)
Mr. Moulds

THOMAS H. WERDEL
10TH DISTRICT, CALIFORNIA

SECRETARIES:
SIRA PAGANUCCI
RACHEL E. BEALES

Congress of the United States
House of Representatives
Washington, D. C.

COMMITTEE:
EDUCATION AND LABOR

HOME ADDRESS:
2200 PINE STREET
BAKERSFIELD, CALIFORNIA

May 28, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JUN 2 1952

Mr. C. O. Mittendorf
Acting Administrator
Defense Minerals Exploration Administration
Interior Building
Washington 25, D. C.

RE: Black Hawk Mining Co.
Docket DMPA 2263
Docket DMEA 2374

Dear Mr. Mittendorf:

This will supplement our previous correspondence relative to the application of the Black Hawk Mining Company, 3243 East Foothill Boulevard, Pasadena 8, California, for a loan for production and construction of a smelter.

You will note from the attached letter I have just received from Mr. Glenn A. Smith, President, Glenn A. Smith and Associates, 555 So. Alexandria Avenue, Los Angeles, California, that the land owner declined to sign the new application form on the basis that it was still a lien.

Mr. Smith further advises that sufficient exploratory work has been done to justify the loan, and is of the opinion that his claim is supported by the report of investigation that has just been completed by engineers for the Department of the Interior, Mineral Deposits Branch, U.S. Geological Survey, San Francisco, California.

In view of the above information, will you please advise me if the matter can now be reconsidered on that basis by your agency.

Sincerely yours,

T. H. Werdel

THOMAS H. WERDEL, M.C.

THW:sk
Enc.

GLENN A. SMITH
and Associates

INTERNATIONAL MERCHANTS SINCE 1921

555 SO. ALEXANDRIA AVE. - LOS ANGELES, CALIF. • TELEPHONE DUNKIRK 2-2155 -- CABLE, APEX

INDUSTRIAL MATERIALS DIVISION

May 21, 1952

AIRMAIL

Honorable Thomas H. Werdel
Member of Congress
House Office Building
Washington, D. C.

SUBJECT: Black Hawk Mining Company
Docket DMPA 2263
Docket DMEA 2374

Dear Mr. Werdel:

As the result of the request made in your letter of April 15, addressed to Mr. C. O. Mittendorf of DMEA, a new form for signature by the land owner was sent us by Mr. D. E. Moulds, Chief, Base Metals Division.

That new form was still a lien and the land owner declined to sign it.

The land owner and the officers of the Blackhawk Mining Company take the position that a sufficient amount of exploratory work has been done to justify a loan for production and construction of a smelter in accordance with the original application made. Their opinion is apparently supported by the report of investigation that has been made by engineers for the U. S. Department of the Interior, Mineral Deposits Branch, U.S. Geological Survey, San Francisco. An engineer named Rinehart and one other engineer recently visited the Black Hawk Mine and commented to the owner very favorably regarding the deposit.

Doubtless you will be able to procure a copy of the report made and possibly that report may cause the DMEA to revise their opinion with regard to the original application made, for construction of a smelter. Possibly the proposed smelter was too large as a starter, but that is a matter which could be negotiated.

We send you this information because you have taken such a deep interest in this project, and we think you should know the present status.

We thank you very much for your continued cooperation.

Yours very truly,

Glenn A. Smith
President

GAS:CCJ

FILE COPY
SURNAME:

Moulds

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

MAY 1 1952

Mr. Glenn A. Smith
555 South Alexandria Avenue
Los Angeles, California

Re: Docket No. DMEA 2374

Dear Mr. Smith:

With reference to your letter of April 22, and the subject application; it is our understanding that you desire this application for exploration assistance to be considered inactive until such time as the negotiations for installation of a small smelter are concluded.

We are, therefore, holding your application in our pending file and we will appreciate your advising us as soon as possible as to the results of the negotiations so that the final action may be taken.

Sincerely yours,

D. E. Moulds (mef)

D. E. Moulds, Chief
Base Metals Division
Defense Minerals Exploration
Administration

HEMoulds/meh/hmj
5-1-52
CC to: Adm. Reading File
Docket File Copy
Region III
Mr. Bishop
Mr. McKnight
Mr. Moulds

GLENN A. SMITH
and Associates

INTERNATIONAL MERCHANTS SINCE 1921

555 SO. ALEXANDRIA AVE. - LOS ANGELES, CALIF. • TELEPHONE DUNKIRK 2-2155 -- CABLE, APEX

INDUSTRIAL MATERIALS DIVISION

April 22, 1952

AIRMAIL

U.S. Department of the Interior
Defense Minerals Administration
Washington 25, D. C.

Re: Docket No. DMEA 2374

Attention: Mr. D. E. Moulds, Chief
Base Metals Division
Defense Minerals Exploration Administration

Dear Mr. Moulds:

We acknowledge your letter of April 16, enclosing a form entitled "Owner's Consent to Lien", in lieu of the previous form, MF-202.

The owners are now negotiating with representatives of foreign buyers with a view to proceeding with the installation of a comparatively small smelter to process the ore which has already been developed. In the event those negotiations are not successfully concluded, then the subject of a further loan from your department will again be taken under consideration.

Thank you for your courtesy.

Yours very truly,

Glenn A. Smith
President

GAS:CCJ

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 24 1952

Docket 500
FILE COPY
SURNAME:

Moulds

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

APR 23 1952

Hon. Thomas H. Werdel
House Office Building
Washington, D. C.

Re: Black Hawk Mining Co.
Docket DMEA No. 2374
Lead-Zinc

My dear Mr. Werdel:

With reference to your letter of April 15, 1952, and the subject exploration project; a letter to Mr. Smith concerning the subordination agreement requirement of exploration project assistance is enclosed for your information.

As this letter indicates, the application is somewhat confusing in that the initial statment indicated the Black Hawk Mining Company consisted of a partnership of three, while the letter from Mr. Glenn A. Smith indicates an interest in the Black Hawk Mining Company involving Glenn A. Smith and Associates. The applicant's business organization has a direct bearing on the requirements for subordination.

In special cases, wherein the applicant is indicated to have financial background sufficient to assume the repayment provisions of Defense Minerals Exploration Administration Order No. 1, in event of discovery or development of mineral by the exploration and production resulting therefrom, exemption to the subordination requirement has been made. The new "Owner's Consent to Lien" form does, however, clarify the responsibility of the landowner and has been found acceptable in several instances wherein the initial form of "Landlord's Subordination" was not agreeable. A set of the new form was transmitted to Mr. Smith.

Receipt of the requested information will permit consideration as to the necessity of subordination in event the landowner is not agreeable to use of the "Owner's Consent to Lien."

Sincerely yours,
C. O. Mittendorf (for) 4/23

Acting Administrator
Defense Minerals Exploration
Administration

DEMoulds/hmj
4-21-52
CC to: Adm. Reading File
Docket File Copy
Mr. Bishop
Mr. McKnight
Region III
Mr. Moulds
Mr. Alt

IAS H. WERDEL
. DISTRICT, CALIFORNIA

SECRETARIES:
SIRA PAGANUCCI
RACHEL E. BEALES

Congress of the United States
House of Representatives
Washington, D. C.

COMMITTEE:
EDUCATION AND LABOR

HOME ADDRESS:
2200 PINE STREET
BAKERSFIELD, CALIFORNIA

April 15, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 18 1952

Mr. C. O, Mittendorf, Acting Administrator
Defense Minerals Exploration Administration
Interior Building
Washington 25, D. C.

RE: Black Hawk Mining Company
Docket DMPA 2263
Docket DMEA 2374

Dear Mr. Mittendorf:

I am attaching hereto a letter received from Mr. Glenn A. Smith, President, Glenn A. Smith and Associates, 555 So. Alexandria Avenue, Los Angeles, California, with further reference to the application of the Black Hawk Mining Company, 3243 East Foothill Boulevard, Pasadena 8, California (Docket DMEA 2374), wherein he informs me that the Mining Company will be unable to resubmit the proposal on Form MF-103 on a revised basis which would meet with the requirements of the DMEA, due to the land owner's refusal to execute the landlord's subordination agreement.

I feel that in view of all the preliminary work that has been accomplished in connection with this proposal, it would be very detrimental to the war effort to have approval denied at this time. I am, therefore, writing you to ascertain if it is possible to have the proposal resubmitted for favorable action without the requested landlord's subordination agreement.

I shall be deeply grateful for a reply at your earliest convenience.

Sincerely yours,

T. H. Werdel

THW:reb

THOMAS H. WERDEL, M.C.

C
O
P
Y

GLENN A. SMITH

and Associates

International Merchants Since 1921

Industrial Materials Division

AIRMAIL

April 8, 1952

Honorable Thomas H. Werdel, M.C.
House Office Building
Washington, D. C.

Re: Docket No. DMEA-2374
Black Hawk Mining Company

Dear Mr. Werdel:

A letter received from the DMEA by the Black Hawk Mining Company, stipulates, among other things, that they would require a landlord's subordination agreement. The owner of the land leased by Black Hawk Mining Company declined to execute that agreement, consequently we have been unable to re-submit the proposal on Form MF-103 on a revised basis which would meet with the requirements of the DMEA.

The land owner expresses the opinion that the subordination agreement is an unreasonable requirement, therefore unless it is possible that the DMEA would proceed without such an agreement, it appears that our efforts to develop this property will be defeated.

Yours very truly,

s/ GLENN A. SMITH
President

GAS:CCJ

500 FILE COPY
SURNAME:

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

J.W.A.
Moulds

APR 16 1952

Mr. Glenn A. Smith, President
Glenn A. Smith and Associates
555 South Alexandria Avenue
Los Angeles 5, California

Re: Docket No. DMEA 2374

Dear Mr. Smith:

We acknowledge receipt of your letter of April 8, 1952 advising that the landowner has refused to sign the Landlord's Subordination Agreement, and requesting information as to the elimination of the Subordination Agreement.

It is noted that the subject application as submitted by the Black Hawk Mining Company was signed by Harry N. Forman, Partner, and that the Company consists of three co-partners. The subject letter indicates that your company has an interest in the application. We will, therefore, appreciate your advising as to any change in the organization of the Black Hawk Mining Company since filing of the application and, if this is a corporation, the officers. This information will be necessary to determine whether the organization and financial background of the Company will permit use of a Guaranty in lieu of Landlord's Subordination Agreements.

We are enclosing six copies of an "Owner's Consent to Lien" agreement which can be used in place of the Landlord's Subordination Agreement and has been found to be more acceptable in comparison to Form MF-202.

Advise us at your earliest convenience if the owner will sign this agreement, or as to the requested information concerning your organization.

Sincerely yours,

E.P.L.

D. E. Moulds (mch)

D. E. Moulds, Chief
Base Metals Division
Defense Minerals Exploration
Administration

Enclosures - 6
JWAlt/hmj 4-15-52
CC to: Adm. Reading File
Docket File Copy
Mr. Bishop
Mr. McKnight Region III Mr. Moulds, Mr. Alt

GLENN A. SMITH
and Associates

INTERNATIONAL MERCHANTS SINCE 1921

555 SO. ALEXANDRIA AVE. - LOS ANGELES, CALIF. • TELEPHONE DUNKIRK 2-2155 -- CABLE, APEX

INDUSTRIAL MATERIALS DIVISION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
APR 10 1952

April 8, 1952

AIRMAIL

Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-2374
Black Hawk Mining Company

Attention: Mr. D. E. Moulds, Chief
Base Metals Division

Dear Mr. Moulds:

With reference to your letter of March 7, it is our desire and the desire of the Black Hawk Mining Company to proceed with the application on a definite project basis. However, upon making request of the land owner to sign the landlord's subordination agreement, Form MF-202, the land owner refused on the grounds that the agreement is unreasonable.

We had prepared a revision of our proposal on Form MF-103 which would conform to the requirements as stated in your letter of March 7. It now appears, however, that unless the DMEA is willing to forego the landlord's subordination agreement, our effort to develop this valuable property, through an exploration loan, is defeated.

Advise us, please, if it is possible that the subordination agreement can be eliminated.

Yours very truly,

Glenn A. Smith
President

GAS:CCJ

500

FILE COPY
SURNAME:

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

Jan A. Jones
Matter of

MAR 7 1952

Mr. Harry N. Forman
Black Hawk Mining Company
2304 North Rosemead Boulevard
El Monte, California

Re: Docket No. DMEA-2374
Black Hawk Mining Company

Dear Mr. Forman:

The Base Metals Division of the Defense Minerals Exploration Administration has reviewed your application for Government assistance for the Black Hawk Mining Company in Kern County, California.

The following statement made on your application on Form MF-103 will require clarification to conform with exploration assistance requirements:

> "The above estimate is based on a three months period. We are willing to proceed with exploration work for a one month period for one-third of this estimate, or for a two month period for two thirds of this estimate, provided by so doing (a) the approval of this application will be expedited, and (b) the exploration work which can be accomplished in a shorter period will satisfy your department that a sufficient reserve of ore exists to warrant approval of our application for Procurement Contract, dated December 4, 1951, D. P. M. A. Docket 2263."

The Defense Minerals Exploration Administration is concerned with exploration only, and cannot make a determination for the Defense Materials Procurement Agency as to when the requirements warranting approval of a Procurement Contract are reached. Exploration Assistance is approved only when an applicant presents a definite project of exploration work, and is prepared to financially participate in the project. If available information or field examination then indicates that the exploration project has geological possibilities of discovery and eventual production of a worthwhile amount of critical mineral, the project will be approved. When the project is completed, the evaluation of results by the Field Team will then be used as a basis for consideration, if further assistance is requested. We, therefore, cannot enter into an

indefinite program based upon achieving the Defense Materials Procurement Agency's criteria for approval of a Procurement Contract.

If you desire to proceed with your application on a definite project basis, we will need the following information and material.

1. Six copies of executed Landlord's Subordination Agreement, Form MF-202, included herewith.

2. A corrected copy of the lease. In copying the lease, in the first paragraph, page one, the name of Harry N. Forman presumably was inadvertently omitted. We are returning your copies of this lease and have marked in pencil where we think this omission is.

3. Your application does not contain a proposal as to the amount of work you expect to do. You state in answer to question 3 (a), Form MF-103, "It is proposed to do additional core drilling, open up new tunnels, and to do such other necessary exploration and development work as may be determined necessary. The total cost is estimated at approximately $25,000.00." It is essential to enumerate the exploration work to be done, present estimated costs on a unit basis for labor, supplies, etc. for each phase of the proposed work, and show the proposed work on maps. No development work should be included in your proposed work statement as we can approve only exploration projects.

4. A list of the equipment with the estimated present value of such that you own and expect to use on this project.

5. A list of the equipment and the cost of such that you will have to purchase for this project.

6. A list of the equipment that you will have to rent for this project and the rent you will have to pay for such equipment.

7. The costs as you have listed them in answers to questions 6, 7, 8, 9, Form MF-103 appear to be high in comparison to costs for similar work in the area.

If the project is of short duration, and would take only three months as you state, it probably would be more economical to rent, rather

than purchase equipment that is needed.

Any other information that you can furnish, which will help us to expedite the processing of your application, will be greatly appreciated.

Sincerely yours,

D. E. Moulds mch 3/7/50

D. E. Moulds, Chief
Base Metals Division
Defense Minerals Exploration
Administration

Enclosures

JWAlt/hmj
3-6-52
cc to: Adm. R. File
Docket File Copy
Mr. Bishop
Mr. McKnight
Region III
Mr. Moulds
Mr. Alt

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

Mr. Harry M. Morgan
Black Hawk Mining Company
2304 North Rosemead Boulevard
El Monte, California

MAR 7 1952

Re: Docket No. [illegible]-2374
Black Hawk Mining Company

Dear Mr. Morgan:

The Base Metals Division of the Defense Minerals Exploration Administration has reviewed your application for Government assistance for the Black Hawk Mining Company in Kern County, California.

The following statement made on your application on Form [illegible]-103 will require clarification to conform with exploration assistance requirements:

> "The above estimate is based on a three months period. We are willing to proceed with exploration work for a one month period for one-third of this estimate, or for a two month period for two-thirds of this estimate, provided by so doing (a) the approval of this application will be expedited, and (b) the exploration work which can be accomplished in a shorter period will satisfy your department that a sufficient reserve of ore exists to warrant approval of our application for Procurement Contract, dated December 4, 1951, D. M. M. A. Docket 2263."

The Defense Minerals Exploration Administration is concerned with exploration only, and cannot make a determination for the Defense Materials Procurement Agency as to when the requirements warranting approval of a Procurement Contract are reached. Exploration assistance is approved only when an applicant presents a definite project of exploration work, and is prepared to financially participate in the project. If available information or field examination then indicates that the exploration project has geological possibilities of discovery and eventual production of a worthwhile amount of critical mineral, the project will be approved. When the project is completed, the evaluation of results by the Field Team will then be used as a basis for consideration, if further assistance is requested. We, therefore, cannot enter into an

indefinite program based upon achieving the Defense Materials Procurement Agency's criteria for approval of a Procurement Contract.

If you desire to proceed with your application on a definite project basis, we will need the following information and material.

1. Six copies of executed Landlord's Subordination Agreement, Form MF-202, included herewith.

2. A corrected copy of the lease. In copying the lease, in the first paragraph, page one, the name of Harry L. Forman presumably was inadvertently omitted. We are returning your copies of this lease and have marked in pencil where we think this omission is.

3. Your application does not contain a proposal as to the amount of work you expect to do. You state in answer to question 3 (a), Form MF-103, "It is proposed to do additional core drilling, open up new tunnels, and to do such other necessary exploration and development work as may be determined necessary. The total cost is estimated at approximately $25,000.00." It is essential to enumerate the exploration work to be done, present estimated costs on a unit basis for labor, supplies, etc. for each phase of the proposed work, and show the proposed work on maps. No development work should be included in your proposed work statement as we can approve only exploration projects.

4. A list of the equipment with the estimated present value of such that you own and expect to use on this project.

5. A list of the equipment and the cost of such that you will have to purchase for this project.

6. A list of the equipment that you will have to rent for this project and the rent you will have to pay for such equipment.

7. The costs as you have listed them in answers to questions 6, 7, 8, 9, Form MF-103 appear to be high in comparison to costs for similar work in the area.

If the project is of short duration, and would take only three months as you state, it probably would be more economical to rent, rather

than purchase equipment that is needed.

Any other information that you can furnish, which will help us to expedite the processing of your application, will be greatly appreciated.

Sincerely yours,

D. E. Moulds

D. E. Moulds, Chief
Base Metals Division
Defense Minerals Exploration
Administration

Enclosures

JMAlt/hmj
3-6-52
cc to: Adm. R. File
Docket File Copy
Mr. Bishop
Mr. McKnight
Region III
Mr. Moulds
Mr. Alt

Defense Minerals Exploration Administration

Review of Application for Exploration Assistance

Docket No. DMEA-2374

Commodity Zinc - lead

Total Amount $24,905

Govt. Participation $12,452.50

Mr. Harold C. Miller
Executive Officer, Field Team
Region III
1012 Flood Building
870 Market Street
San Francisco, California

1. Name and Address of Applicant Blackhawk Mining Company, 2304 North Rosemead Blvd., El Monte, California

2. Location of Property Black Hawk Mine, SE 1/4, Sec. 5 T. 31 S. R. 33 E., MDB & M., Kern County, California

3. Mineral or metal Zinc, lead Is it listed in Section 9 of MO-5? Yes

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination X

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? Yes

Does the lease have sufficient time to run to cover a future productive period? Yes

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes

a) MF-201? _____

b) MF-202 X

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower _____

b) Equipment and supplies _____
(question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* _____

d) Water (question 13)* _____

e) Power (question 13)* _____

Is a field check needed on any of these points? Yes, all of them.

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Don't know

Is a field check needed on this point? Yes

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? No

If not, are there sufficient data given so that you can describe the project? No If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Don't know

If not, what part of it is? _____

Is this part a worth-while exploration project?_____

d) Are the cost estimates detailed? **No**

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? **No** If so, attach a draft.

e) Are the cost estimates reasonable?_____

f) Should more information be requested from applicant? **Yes**

g) Is a field examination necessary to complete Exhibit A? **Yes**

11. Exhibit B (question 23-d)*

a) Is it applicable? **Yes**

b) If so, are sufficient data furnished? **No** If so, attach a draft.

c) Is a field check needed? **Yes**

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? **Yes**

b) Sufficient data? **No** If so, attach a draft.

c) Are rents and charges reasonable? **No**

d) Is a field check needed? **Yes**

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? **No**

b) Is the schedule adequate for the work proposed? **Don't know**

c) Is the schedule excessive for the work proposed?_____

d) Are the proposed wages and salaries reasonable?_____

e) Is a field check needed? **Yes**

14. Exhibit E (question 23-c)*

a) Is it applicable? _____

b) Sufficient data? **No**

c) Reasonable? _____

d) Field check needed? **Yes**

15. In your judgment, can the proposed work be done in the proposed time? _____

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? **Field team should give this proposition a very careful scrutiny to determine if there is a possibility of opening up higher grade ore, than is shown by Mr. Jenkins' samples, and in sufficient widths to assure tonnage.**

Reviewed by: H. E. Olund, BM 2- 27-52

O. M. Bishop BM

Erwin J. Lyons GS

Date 3-3-52

Defense Minerals Exploration Administration

Review of Application for Exploration Assistance

Docket No. DMEA-2374

Mr. Harold C. Miller
Executive Officer, Field Team
Region III
1012 Flood Building
870 Market Street
San Francisco, California

Commodity Zinc - lead

Total Amount $24,905

Govt. Participation $12,452.50

1. Name and Address of Applicant Blackhawk Mining Company, 2304 North Rosemead Blvd., El Monte, California

2. Location of Property Black Hawk Mine, SE 1/4, Sec. 5 T. 31 S. R. 33 E., MDB & M., Kern County, California

3. Mineral or metal Zinc, lead Is it listed in Section 9 of MO-5? Yes

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination X

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? Yes

Does the lease have sufficient time to run to cover a future productive period? Yes

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes

a) MF-201? _____

b) MF-202 X

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower _____

b) Equipment and supplies _____
(question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* _____

d) Water (question 13)* _____

e) Power (question 13)* _____

Is a field check needed on any of these points? Yes, all of them.

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Don't know

Is a field check needed on this point? Yes

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? No

If not, are there sufficient data given so that you can describe the project? No If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Don't know

If not, what part of it is? _____

Is this part a worth-while exploration project?_____

d) Are the cost estimates detailed? No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No If so, attach a draft.

e) Are the cost estimates reasonable?_____

f) Should more information be requested from applicant? Yes

g) Is a field examination necessary to complete Exhibit A? Yes

11. Exhibit B (question 23-d)*

a) Is it applicable? Yes

b) If so, are sufficient data furnished? No If so, attach a draft.

c) Is a field check needed? Yes

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? No

d) Is a field check needed? Yes

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? No

b) Is the schedule adequate for the work proposed? Don't know

c) Is the schedule excessive for the work proposed?_____

d) Are the proposed wages and salaries reasonable?_____

e) Is a field check needed? Yes

14. Exhibit E (question 23-c)*

a) Is it applicable? _____

b) Sufficient data? No

c) Reasonable? _____

d) Field check needed? Yes

15. In your judgment, can the proposed work be done in the proposed time? _____

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? Field team should give this proposition a very careful scrutiny to determine if there is a possibility of opening up higher grade ore, than is shown by Mr. Jenkins' samples, and in sufficient widths to assure tonnage.

Reviewed by: H. E. Olund, BM 2- 27-52

O. M. Bishop BM

Erwin J. Lyons GS

Date 3-3-52

FILE COPY
SURNAME:

Mailda

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

FEB 28 1952

Hon. Thomas H. Werdel
House of Representatives
Washington 25, D. C.

Re: Docket DMPA 2263
Docket DMEA 2374
Black Hawk Mining Co.

My dear Mr. Werdel:

With reference to your letter of February 16, 1952, expressing your personal interest in the application of the Black Hawk Mining Company for an exploration assistance loan.

This application was transmitted to the Defense Minerals Exploration Administration by the Defense Materials Procurement Agency on February 13, 1952, and docketed under DMEA 2374. Mr. Harry N. Forman was advised by letter of the receipt of application and docket number.

The application is being reviewed at the present time and further action will depend on the conclusion of the review. Preliminary examination of the application indicates, however, that additional information concerning the proposed work will be necessary before final action can be taken. The applicant has also made the following statement on Form MF-103, which will require clarification:

"The above estimate is based on a three months period. We are willing to proceed with exploration work for a one month period for one-third of this estimate, or for a two month period for two-thirds of this estimate, provided by so doing (a) the approval of this application will be expedited, and (b) the exploration work which can be accomplished in a shorter period will satisfy your department that a sufficient reserve of ore exists to warrant approval of our application for Procurement Contract, dated December 4, 1951, D.P.M.A. Docket 2263."

The Defense Minerals Exploration Administration is concerned with exploration only, and cannot make a determination for the Defense Materials Procurement Agency as to when the requirements warranting approval of a Procurement Contract are reached. Exploration assistance is approved only when an applicant presents a definite project of exploratory work and is prepared to financially participate in the project. If available information or field examination then indicates that the exploration project has geological possibilities of discovery and eventual production of a worthwhile amount of critical mineral, the project will be approved. When the project is completed, the evaluation of results by the Field Team will then be used as a basis for consideration, if further assistance is requested. We, therefore, cannot enter into an indefinite program based upon termination upon achieving the Defense Materials Procurement Agency's criteria for approval of a Procurement Contract.

At the conclusion of the review, the applicant will be advised of the necessity of entering into a definite program of work without qualifications such as now expressed and, also, such other information as may be required.

We assure you that the application will continue to receive our attention and final action will be made as soon as possible.

Sincerely yours,

C. O. Mittendorf (fw) J.N. 2-28-52

Acting Administrator
Defense Minerals Exploration
Administration

DEMoulds/meh/hmj
2-27-52
cc to:
Adm. R. File
Docket File Copy
Mr. Bishop
Mr. McKnight
Mr. Moulds
Region III

THOMAS H. WERDEL
10TH DISTRICT, CALIFORNIA

SECRETARIES:
SIRA PAGANUCCI
RACHEL E. BEALES

Congress of the United States
House of Representatives
Washington, D. C.

COMMITTEE:
EDUCATION AND LABOR

HOME ADDRESS:
2200 PINE STREET
BAKERSFIELD, CALIFORNIA

February 16, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 19 1952

Mr. C. O. Mittendorf, Acting Administrator
Defense Minerals Exploration Administration
Interior Building
Washington 25, D. C.

Dear Mr. Mittendorf:

I am writing to express my personal interest in the application of the Black Hawk Mining Company, 3243 East Foothill Boulevard, Pasadena 8, California (Docket DMPA-2263) for a loan in the amount of $25,000 for exploration activities.

The Black Hawk Mining Company previously made application for an advance in the amount of $150,000 to purchase and transfer an existing zinc smelter to Caliente, Kern County, California, which is located in my congressional district. This application was disqualified for a direct production loan on the basis that further exploration activities would be necessary to establish adequate ore reserves.

In a letter addressed to me under date of February 12, 1952, by Administrator Jess Larson, Defense Materials Procurement Agency, it was suggested that the applicant file for an exploration loan.

I am now advised by Mr. Glenn A. Smith, President, Glenn A. Smith and Associates, 555 So. Alexandria Avenue, Los Angeles, California, who originally brought this application to my attention, that they have prepared applications in quadruplicate on Forms MF-100 and MF-103, with the necessary supporting data, which were forwarded, via air mail, on February 8, 1952, to the Defense Minerals Production Administration, Washington, D.C., for the attention of Mr. John Ford. Presumably, this application will be routed to your office for appropriate consideration as well as the original file on the subject. However, I would like to request that if it has not been so routed, that you advise me, as I am anxious to avoid any delay in the processing of this application.

It may be pointed out that the applicant is still of the opinion that further exploration work is unnecessary. However, in view of the disapproval of their application, they have applied for a loan in the amount of $25,000, the amount of exploration work considered necessary to qualify for a loan to be determined by the DMPA.

I would particularly direct your attention to the attached copy of letter of transmittal addressed to the Defense Minerals Production Administration by Mr. Glenn A. Smith, under date of February 8, 1952, which is forwarded for your immediate information.

Since I am firmly of the belief that this exploration and the ultimate results will be of paramount importance to the national defense effort in our present emergency, I would respectfully recommend that the application be accorded expeditious handling and early approval.

Please be assured that I will be deeply grateful for your cooperation in expediting the necessary processing of this application.

Sincerely yours,

T. H. Werdel

THOMAS H. WERDEL, M.C.

THW:reb

C
O
P
Y

GLENN A. SMITH
AND ASSOCIATES

555 SO. Alexandria Ave.
LOS ANGELES, CALIFORNIA

February 8, 1952

AIR MAIL

Defense Minerals Production Administration
Washington 25, D. C.

Attention: Mr. John Ford

BLACK HAWK MINING CO.
DOCKET DMPA 2263

Dear Mr. Ford:

It has been ruled by your department that our application dated December 4, 1951, for a direct production loan, cannot qualify at present and that further exploration will be necessary.

We have been informed by our Congressman, Honorable Thomas H. Werdel, that an application for an exploration loan will be favorably considered.

We are therefore enclosing herewith the following documents in quadruplicate:

Form MF-100, with supporting engineer's report and assay map.

Form MF-103 and copy of lease.

We direct your attention to the notation following Item 9 attached to Form MF-103, which qualifies the application for either 1/3, 2/3 or the total estimate, depending upon conditions stipulated therein.

We hope that this application can be expedited in view of the length of time that has already transpired since our application of December 4 and the urgent need for the development of new sources of zinc metal, particularly in California.

Thanking you, we are

Yours very truly,

Glenn A. Smith
President

GAS:CCJ
CC: Honorable Thomas H. Werdel
United States Congressman

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA

FOR USE UNDER THE

DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2374

Date received 2-13-52

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 1 1952

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

Name and address of applicant

GLENN A. SMITH & ASSOCIATES
555 S. Alexandria Ave., Los Angeles 5, Calif.

Date FEBRUARY 5, 1952

RECEIVED
FEB 12 1952
DEFENSE PROCUREMENT AGENCY
PACIFIC

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☒ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
Harry N. Forman 336 N. Poinsettia Pl. Los Angeles, California	co-partner	none	$150,000	---	---	none	none
H. H. Records 9440 Priscella St. Downey, California	co-partner	none	$ 25,000	---	---	none	none
Robert Records 500 Irene St. Bakersfield, California	co-partner	none	$ 25,000	---	---	none	none
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)	zinc ore	none	none	none	70 tons
2. Quantity of product processed (specify unit of measure and type of process)	N	O N	E		
3. Quantity and grade of product sold or shipped (specify units of measure)	N	O N	E		

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

BLACK HAWK MINING COMPANY
(Name of company)

By Harry N. Forman
(Signature of authorized official)

FEBRUARY 5, 1952
(Date)

Partner
(Title)

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—63792-1

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

TO BE ATTACHED AND MADE PART OF FORM MF-100.

1. (a) Zinc Ore.
   (b) Lead, copper, silver, gold, antimony - secondary elements in zinc ore.
2. Black Hawk Mine, lode type.
2. (a) 182 feet of shafts.
   (b) 345 linear feet of drifts and crosscuts.
   (c) 100 linear feet of tunnels and adits.
   (d) 500 linear feet of mine openings.

   No water problem, no flooding and no pumping problem.
   See engineer's report attached as to productive capacity.

3. (a) 13½ miles east of Caliente, California.
   (b) Caliente mining district.
   (c) Township 31, section 5, range 33 east, MDE & M, Kern,County, California.
   (d) Kern County, California.

4. (a) Only the mandatory development work required by lease terms is now being done by the Black Hawk Mining Company.

5. There is no commercial production of zinc ore at present. Mine was a producer of silver some years ago. Mine will be placed on commercial production when loan for completion of a smelter to be located at Caliente has been granted.

6. H. H. Records and Robert Records have each had fifteen years of experience as mining engineers and in operation of mines and smelters. Harry N. Forman has had thirty years experience as executive and administrative head of several successful business enterprises.

7. (a) Mine was originally developed for gold and silver about twenty years ago. Subsequently, prior to 1946, the mine was operated on a small scale for zinc-lead ore, but operation was suspended because it was impossible to operate the mine profitably at prices then prevailing for zinc-lead ore after payment of high custom smelter fees, rail freight, etc. This mine can be profitably operated only if the ore is smeltered in a smelter adjacent or near to the mine, as planned by the Black Hawk Mining Co.

   (b) There is no known lead and zinc production on adjoining properties. There is gold, silver, antimony and tungsten being produced in near by mines.

   (c) See enclosed report by William O. Jenkins, Jr., Mining Engineer.

11. Based on present tunnels and diamond drill exploration, it is proposed to increase production to approximately 3,000 tons per month as a basis for the proposed construction of a smelter to be situated at Caliente for the treatment of this ore.

12. (a) Refer to the attached report and assay map prepared by William O. Jenkins, Mining Eng.

13. 11 miles of county blacktop road and 4 miles of graded gravel road from mine to nearest shipping and supply point. Roads are in good shape and can be used the year round.

14. Water is available from flowing springs on the mine property in all seasons sufficient in volume for the proposed operation. Additional water is available in unlimited quantities by drilling of wells to about 60 feet.

15. Power for air compressor, lights and motor will be furnished by gasoline powered engine and generator. Additional power is available from nearby power line of the Southern California Edison Company if required.

16. During the past year we have employed 2 to 3 miners continuously for core drilling, stoping and tunnel repair work.

17. Following is a list of equipment, all in good operating condition, now on the property.

1 - 50 HP Air Compressor
1 - Slusher
1 - Portable 50 HP Gasoline Engine & Generator
4 - Mine Dump Cars
500'- Mine Rail
Jackhammers, drill steel, small tools, etc.
1 - Approximately 100-ton Loading Bin.

BLACK HAWK MINES, KERN COUNTY, CALIFORNIA

REPORT OF GEOLOGICAL EXAMINATION

The Black Hawk Mines, situated in the SW$\frac{1}{4}$ of Section 5, Township 31 South, Range 33 East, MDB&M, Kern County, California, approximately 14 miles southeast of Caliente, were visited on August 4 and 5, 1951 by the writer, accompanied by Mess'rs. Harry Forman, Stuart Franklin, Henry Records and Robert Records.

Purpose of this visit was to make a geological examination of the property, to study the geological and mineralogical relationships of the ore deposits and to determine, insofar as a limited investigation would permit, whether or not the property possesses sufficient merit from a geological standpoint to warrant further development and exploitation.

Inasmuch as earlier reports on this property have already dealt with general description of terrain, accessibility of property, elevation, vegetation, water supply, ownership, general condition of the mine as regards timber, rails, mining entries and other descriptive material, this report will be confined to its geological aspects.

SUMMARY AND CONCLUSIONS

Ore deposits of the Black Hawk Mines are replacements of limestone horizons in metamorphic rocks constituting a roof-pendant in a granitic terrain. Orebodies are narrow, steeply dipping and elongated, striking in a northeasterly direction. The north deposit is exposed nearly continuously for a distance of 300 feet along the strike and gives promise of continuing another 700 feet to the Apex Shaft. The south deposit has an indicated length of 400 feet plus a possible extension of another 450 feet, joining the north deposit in the vicinity of the Apex Shaft.

Orebodies vary in width from three to 25 feet. Indicated tonnage of reserves is estimated at 82,300 tons. Of this, 65,600 tons are assigned to the north deposit and 16,700 tons to the south deposit. Inferred extensions of indicated reserves are as follows: North Deposit, 50,000 tons. South Deposit, 22500 tons. Total indicated and inferred reserves are estimated at 154,800 tons.

Samples taken show little or no gold, from zero to 4.59 oz. per ton in silver, zero to 4.45 per cent lead and 5.45 to 22.10 per cent zinc.

Mining can be started with a minimum of preparatory work and within a short time up to fifty tons of ore per day can be produced simultaneously with an effective development program.

The deposit has a great deal of merit and shows promise of a substantial and persistent supply of ore. No unusual mining problems are anticipated and it is the conclusion of the writer that if a successful metallurgical treatment of these ores can be made, in order to make a profitably salable product, a highly successful operation can be anticipated.

GENERAL GEOLOGY

Ore deposits of the Black Hawk Mines occur as elongated lenticular bodies, enclosed in schist and quartzite. The general nature of the orebodies and the presence of recrystallized limestone adjacent to and interfingered with the ore in places indicate that the deposits are replacements of limestone members of the metamorphic series which itself is a roof pendant in a predominantly granitic terrain. Whether or not the orebodies may be regarded as contact-metamorphic deposits is a matter to be determined by more detailed study.

The deposits strike in general in a northeast direction, dipping steeply to the southeast. There is an apparant junction of the north and south deposits at a point in the vicinity of the Pine Tree Shaft or the Apex Shaft a couple of hundred feet further southeast. This junction is regarded by the writer as the expression of a rising or plunging structural fold in the stratified metamorphic rocks rather than as the intersection of two fault zones.

In any event, both the north and south deposits strike toward the Apex Shaft at which point a well-defined, steeply dipping (southeast) orebody with a width of approximately six feet may be seen. Though outcrops were not traced continuously to this point from either deposit, scattered outcrops along each trend indicate the possibility of a continuity of ore from both the north and the south workings to a common point in the vicinity of the Apex Shaft.

In addition to the North and South deposits, an intermediate deposit, shown on the map as "Middle Workings", situated due south about 350 feet from No. 1 North portal and about 150 feet southeast of the projection of strike of the No. 1 deposit. Poor exposures and a caved working entry render the geologic relations here obscure. However, about 20 tons of good-looking ore has been piled on the dump here. This deposit may represent a lesser but related and similar horizon of ore.

NORTH WORKINGS (See map for location)

The ore deposit explored by the North Workings and exposed underground by them may be traced along the surface, up a rather steep ridge, for a distance of 300 feet. Its greatest exposed width is at the portal of No. 1 North tunnel where the width of ore measured across the dip is 25 feet. It narrows along the strike to the southwest to approximately three feet, 300 feet from the portal. Immediately northeast of the portal there is a two-compartment shaft, forty feet deep and bottomed in unoxidized ore. The shaft was not entered by the writer, because of its dangerous condition. It is said to have been sunk about 1942. Reports indicate the shaft was sunk in ore from top to bottom.

The North Workings are the most recently worked portion of the deposits. In June, 1951, 67 tons of ore were shipped from here to a mill in the vicinity of Mojave. Results of this mill run are not in the writer's possession, but it would be well to obtain them for study, for they probably constitute the best obtainable sample that could be taken from these workings.

It is very likely that a northeast extension of the orebody will be discovered by further work. The orebody widens to the northeast, its widest point being at the portal of the tunnel. Though the hillside slopes steeply downward in

this direction, there is a good possibility for development of a sizable tonnage of ore below the present working level in this direction.

No. 1 level development extends for 85 feet southwest along the strike. Ore is persistent to the face. At the portal the ore zone is twenty-five feet in width. Thirty feet within the tunnel, a crosscut to the northwest shows ore across an eighteen-foot width, although here lenticular masses of barren metamorphic rock reduce the actual width of ore to approximately twelve feet. Most of the recently shipped ore was taken from the area between the portal and this crosscut.

This orebody may be followed on the surface for 300 feet to the southwest. Outcrops are virtually continuous for this distance. Two trenches, approximately 100 feet long were observed where they had been dug across the strike, but they have long since filled with dirt and grass grows in them, hiding whatever exposures may have been made. Cleaning these trenches out should be a part of any realistic exploration program here. Dips remain constantly steep as the orebody is followed southwest, but the ore narrows to about three feet at the 300 fot mark.

As previously stated, the Apex Shaft lies along the projection of this strike and about 700 feet further southwest. Scattered outcrops may be seen in this distance and the possibility is good for a continuation of ore to the Apex. Thereby a total length from the No. 1 portal to the Apex of 1000 feet, would be attained.

Ore in the No. 1 workings, as exposed close to the surface is largely oxidized. However, "niggerheads" of unaltered sulfide ore are present, even close to the surface. Ore taken from the bottom of the forty-foot shaft is unoxidized. Apparently the zone of oxidation extends not more than thirty feet or so beneath the surface. Assays showing a relatively high content of zinc in the oxidized zone indicate that it has not been transported downward and has probably been altered to the carbonate ore smithsonite from the primary sphalerite.

In this deposit, replacement of the original limestone has been virtually complete. Very little recrystallized limestone is in evidence, the ore being bounded on each side by resistant quartzite and schist.

Samples S1 through S-5 were taken from the North Workings. Assay results are shown on the attached map, together with sample locations and widths cut.

SOUTH WORKINGS (See map for location)

South Workings consist of two level developments designated as No. 1 and No. 2. No. 1 is approximately 100 feet higher than No. 2 and is the level from which several cars of ore were shipped in 1948 or possibly earlier.

Ore is found in both levels. No. 2, the lower level, crosscuts the metamorphic rocks for about 125 feet before it encounters a five-foot width of ore at a point 180 feet northeast along the strike of the orebody from a point directly below the stope in No. 2 where shipping ore was mined.

The upper level, No. 1, crosscuts the formations for 60 feet before entering

ore, when it encounters unaltered sulphide ores approximately ten feet wide that dip steeply to the southeast. Here the area has been mined by raising above the level and by sinking a winze below it. At this point the tunnel has turned southwest along the strike and continues in ore for a distance of 75 feet.

Surface outcrops may be followed up the hill to the southwest from South No. 1 and though they are not continuously exposed, may be traced toward the Pine Tree Shaft and the Apex Shaft beyond it. It is approximately 700 feet southwest from the portal of No. 1 south to the Apex Shaft.

Replacement of pre-existing recrystallized limestone has not been so complete in the South Workings as in the North, and lenses of limestone may be found in the ore zone. Quartz veins and tongues of granitic igneous rock may be found in the workings that show a great variation in grain size and bear a close resemblance to pegmatitic structure. The deposit as a whole is similar to the contact metamorphic deposits found a few miles to the north.

In general, ore in this deposit is less altered and oxidized than that in the North deposit. The stoped area is characterized by coarsely crystalline sulphide ore.

OTHER WORKINGS

In addition to the North and South Workings as described heretofore, there is the area referred to under "General Geology" as the Middle Workings. There are also the Apex Shaft, the Pine Tree shaft and an open cut about 50 feet south of the Pine Tree Shaft. The Pine Tree shaft is about 40 feet deep and was sunk in ore. The cut fifty feet south of it is also in ore. The Apex, said to be the oldest working on the property, having been sunk in the 1880's, goes down on ore approximately six feet wide for a reported 80-foot depth. Here the ore strikes N 45° E and dips 83° southeast. Surface outcrops of ore were observed 200 feet southwest of this shaft, further lengthening the orebodies.

ORE RESERVES

Estimated ore reserves based upon the examination described herein follow:

Indicated reserves based on underground and surface exposures:	
North Deposit: 350' long by 15' wide by 150' deep (This 150' depth includes the 40' in the shaft)	65,600 tons
North Deposit: (Above working level only. Does not include any ore below the level)	43,740 tons
South Deposit: 400' long by 5' wide by 100' deep	16,700 tons
Total indicated reserves in North and South Workings, including ore below main level North Workings	82,300 tons
Inferred ore in addition to Indicated ore shown above:	
North Deposit - end of outcrop to Apex Shaft 600' long by 5' wide by 200' deep	50,000 tons
South Deposit - end of outcrop to Apex Shaft 450'flong by 4' wide by 150' deep	22500 tons
Total Indicated and Inferred ore in both deposits	154,800 tons

(Note: This is a conjectural figure based upon possible extensions of known

deposits and is not to be regarded in any senses as an assured tonnage. It is, however, entirely withing the realm of possibility and has been arrived at by a reasonable extension of visible reserves.)

SAMPLES

A total of seven samples were taken at the Black Hawk Mines during this investigation. These were submitted to Smith-Emery Company of Los Angeles for assaying. Results obtained are discussed in the following.

North Workings:
Samples S1, S2 and S3 were taken across the face of exposed ore at the portal of No. 1 North. The ore in this area is largely oxidized, although there are present nodules of unaltered ore.. Sample S1 was cut seven feet across the ore from the hanging wall side toward the footwall. S2 was also cut across the ore from a point ten feet from the hanging wall to a point 17 feet from it. S3 covered the area from the 17 foot mark to the 23 foot mark from the hanging wall. A calculated composite of the three samples is given below, which should be representative of the total width of ore. The individual assays should be helpful in determining variations in tenor of ore across this face.

Sample No.	Description	Gold Oz.	Gold Value	Silver Oz.	Silver Value c	Lead %	Zinc %
S1	Hanging Wall to plus seven feet	Trace	-	1.52	$1.37	3.28	8.85
S2	Plus 10 to plus 17	0.01	$0.35	4.59	$4.52	1.10	9.50
S3	Plus 17 to plus 23	Trace	-	1.26	$1.14	3.92	5.45
AVERAGE OF THREE SAMPLES		--	--	2.69	$2.34	2.77	7.93

The average given above is indicative of the values to be expected in at least the initial phases of mining at the No. 1 North Workings.

In addition to the above, Sample S4 was cut across the back of the main drift at a point 35 feet in from the portal. This sample showed only a trace of gold, no silver or lead, but was very high in zinc, assaying 22.10%. The friable, earthy nature of the portion of this sample farthest from the hanging wall, together with the high zinc content, indicates the presence here and in other localized portions of the oxidized zone of smithsonite (zinc carbonate), produced by the dissolving action of surface waters and the precipitating effect of limestone. It is an example of secondary enrichment and although it may be encountered here and there in the upper zone, will not show up in the unaltered sulphide zone.

Another sample, S5, was chipped from pieces of unaltered ore said to have been removed from the bottom of the 45 foot shaft at the portal of Nol North Tunnel. It contained a trace of gold, o.44 oz silver at $0.40, 0.40% lead and 15.80% zinc.

South Workings
Only two samples were taken from the No. 1 South Workings. One of these was cut for eight feet across the back of the left branch of the main tunnel, as

shown on map (Sample No. S6). The other was taken from the stoped area where the tunnel first encounters the ore zone (Sample S7). Results are as follows:

	Gold		Silver		Lead	Zinc
	Oz.	Value	Oz.	Value		
S6	0.01	$0.35	0.45	$0.41	4.45%	5.75%
S7	Trace	-	0.64	$0.58	2.15%	6.22%

FUTURE DEVELOPMENT AND EXPLOITATION

It appears that the most logical method of exploiting the mine workings is to attack both No. 1 North and No. 1 South Workings. Mining operations can be started in either or both of these areas with a minimum of preparatory work and ore can be taken from both of them from the start. Initial development work, to be carried on simultaneously with mining can be started easily in No. 2 South Tunnel, the lower level. The ore zone can be followed at this level in both directions along its strike, particularly to the southwest, where tonnage will be developed more rapidly and where a satisfactory haulage tunnel can be produced to handle ore mined from the level above and from the intervening area. Development program in No. 1 North workings would include driving a heading southwest along the strike ahead of mining operations and might also involve retimbering and rehabilitating the shaft, deepening it and starting a lower level development from its bottom.

CONCLUSIONS

It is concluded from this investigation that the possibility of developing a substantial tonnage of ore at the Black Hawk Mine is indeed a very good one. Orebodies are strong and persistent, giving promise of considerable length and depth. There is a good chance of discovering orebodies in other horizons of the metamorphic rocks in this immediate area. Assuming that the problems involved in concentration, smelting or other treatment of the mined ore can be overcome, the mine itself could be developed rapidly to the point where a steady production of fifty tons per day could be maintained. Production of no more than fifty tons daily is recommended at this time because of the present lack of working faces from which to mine a greater tonnage.

Respectfully Submitted,

William O. Jenkins

William O. Jenkins
Consulting Mining Geologist

Alhambra, California
August 9, 1951

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2374
Metal or Mineral
Date Received 2-13-52
Amount $
Participation (Government %)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 13 1952

Name and address of applicant

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA
or c/o GLENN A. SMITH & ASSOCIATES
555 S. Alexandria Ave., Los Angeles 5, Calif.

Date FEBRUARY 5, 1952

RECEIVED
FEB 12 1 03 PM '52
DEFENSE MATERIALS PROCUREMENT AGENCY

If you have already filed MF-100, give date filed February 5, 1952, type of assistance requested ~~Procurement Contract~~

DMA Docket Number (if available) 2263

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

BLACK HAWK MINING COMPANY
(Name of company)

By Harry N. Forman
(Signature of authorized official)

FEBRUARY 5, 1952
(Date)

Partner
(Title)

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—64067-2

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

TO BE ATTACHED TO AND MADE A PART OF FORM MF-103

1. (a) Southwest quarter of Section 5, Township 31 South, Range 33 East, M.D.B.M., Kern County, California, generally known as the Black Hawk Mine.

   (b) Copy of lease attached.

   (c) Same as 1. (a).

2. (a) Zinc Ore.

   (b) See report and assay map by William O. Jenkins, Mining Engineer, attached to Form MF-100.

3. (a) It is proposed to do additional core drilling, open up new tunnels, and to do such other necessary exploration and development work as may be determined necessary. The total cost is estimated at approximately $25,000.00.

(b) Work can start immediately and can be completed within ninety days.

4. See map attached to Form MF-100.

5. 1 - 50 HP Air Compressor
1 - Slusher
1 - Portable 50 HP Gasoline Engine & Generator
4 - Mine Dump Cars
500' - Mine Rail
Jackhammers, drill steel, small tools, etc.
1 - approximately 100-ton Loading Bin

6. Housing - 2 Trailers for 8 Men (Rental) 3 months @ 1200.00 per month	$ 3,600.00
7. (a) Service Truck - 3 months @ 600.00 per month	1,800.00
Diamond Drill Rigs - 3 months @ 500.00 per month	1,500.00
(b) Compressors, Jackhammbers, Hose, Teel, 3 months @ 471.00 per month	1,413.00
(b) Timber for Mine Shaft, etc.	1,500.00
(c) None	
8. Superintendent 72 days @ 25.00	1,800.00
3 - Miners 72 days @ 67.50 for 3	4,860.00
3 - Muckers & Helpers - 72 days @ 49.50	3,564.00
1 - Utility Man 72 days @ 16.50	1,188.00
9. Engineering Fee	1,000.00
Assaying & Sampling	1,000.00
Blast Power, Caps, Fuses @ $150.00 per month	450.00
Gas & Oil - 3 months @ $300.00	900.00
Camp Equipment	150.00
Bottled Gas @ $60.00 per month	180.00
Total	$24,905.00

The above estimate is based on a three months period. We are willing to proceed with exploration work for a one month period for one-third of this estimate, or for a two month period for ~~two-thirds~~ of this estimate, provided by so doing (a) the approval of this application will be expedited, and (b) the exploration work which can be accomplished in a shorter period will satisfy your department that a sufficient reserve of ore exists to warrant approval of our application for Procurement Contract, dated December 4, 1951, D.P.M.A. Document 2263.

#17

10. (a) $12,500.00.

(b) Yes

11. None

A G R E E M E N T

BOND AND LEASE

THIS AGREEMENT, made and entered into this first day of August, 1951 by and between RALPH C. HATTON, and VERA E. HATTON, his wife, of 1104 W. 99th Street, Los Angeles, California, hereinafter called FIRST PARTIES, and R. B. RECORDS of 500 Irene Street, Bakersfield, California, H. H. RECORDS of 9044 Priscilla Street, Downey, California, and 336 N. Poinsettia Place, Los Angeles, California, hereinafter called SECOND PARTIES.

WITNESSETH:

In consideration of ten dollars ($10.00) in hand paid by Second Parties to First Parties, receipt of which is hereby acknowledged, as a partial advance on rentals and to induce First Parties to enter into this agreement, and in consideration of the performance by Second Parties of the terms and conditions hereinafter stated and set forth by Second Parties to be kept and performed, in the manner hereinafter stated, the First Parties do hereby demise and lease unto said Second Parties, for a period of fifty years from and after the date hereof the following described premises, located and situated in Kern County, State of California, to wit:

LOCATION: Southwest quarter of Section 5, Township 31 South, Range 33 East, M.D.B.M., Kern County, California. This premises is generally known as the Black Hawk Mine.

The Second Parties agree to comply with the following terms and conditions:

(a) Beginning November 1, 1951 to pay the First Parties a minimum of one hundred dollars ($100.00) rental and one hundred dollars ($100.00) on the first of each and every month thereafter for the remaining life of this lease.

(b) Second Parties agree to pay the First Parties a royalty of ten percent (10%) of the gross receipts from any ores or concentrates produced from the premises until the sum of twenty-five thousand dollars ($25,000.00) has been paid.

(c) After the first twenty-five thousand dollars ($25,000.00) has been paid, the Second Parties agree to pay the First Parties seven and one-half percent (7½%) royalties of the gross receipts from any ores or concentrates produced from the premises until an additional twenty-five thousand dollars ($25,000.00) has been paid.

(d) When a total of fifty thousand dollars ($50,000.00) has been paid, the Second Parties agree to pay the First Parties five percent (5%) of the gross receipts from any ores or concentrates produced from the premises and shall continue to do so for the remaining life of this lease.

(e) The Second Parties agree to supply First Parties with the settlement sheet from the buyers of any ores or concentrates produced from the premises and pay any moneys due the First Parties on or before the 20th day of each and every month.

(f) Royalty payments above mentioned shall be based on seventy percent (70%) of the ore values determined by true and accurate assays. The value of these assays shall be determined by daily quoted metal prices. The Second Parties

will make or have made true and accurate assays of all ore taken from the property, and will submit copies of said assays to First Parties when making shipments.

(g) The Second Parties agree to perform all mining operations in a good and minerlike manner and to comply with all the laws, rules, and regulations stipulated under the laws of the State of California pertaining to the practice of mining.

(h) The Second Parties agree to commit no waste of the premises, and in that behalf pay, before delinquent, all taxes levied or assessed against the premises, or against any buildings, or equipment placed thereon.

(i) The Second Parties agree to comply with the laws covering the Workman's Compensation Act and carry compensation insurance or its equivalent upon all workmen in or upon said premises.

(j) The Second Parties agree when requested by the First Parties to give unto the First Parties a copy of any assay made by the Second Parties and an accurate description of where samples were taken.

(k) The Second Parties agree at all times to keep the premises free and clear of mechanic's liens that might arise out of any action in the pursuit and operation of these premises. To post in a conspicuous place on the premises a notice of the non-responsibility of the First Parties and record said notice in Bakersfield, Kern County, California.

(l) To save, defend, indemnify, and hold harmless the First Parties from and against all manner of claims, demands, damages, and action and causes of action whether at law or in equity, asserted by or on behalf of any third party by reason or use or occupancy of said premises, or on account of any commission or omission arising out of or performed in connection with the Second Parties use or operation thereof.

(m) The Second Parties agree to do forty shifts, each shift to be eight man-hours work upon the premises each and every month for the life of this lease, duress cases excepted such as an act of God, strikes, or lockouts, closure by Government decree, or inability to obtain materials.

(n) The Second Parties agree and accept said premises in the condition in which the same now is, it being agreed in that behalf that the First Parties shall not be liable to the Second Parties or any third party for any damage of any character resulting from any defect or imperfection latent or patent in or about the premises.

(o) The Second Parties agree that the First Parties have the right to enter upon the premises at reasonable times to inspect the same at their own risk.

(p) The Second Parties agree that should they be put into bankruptcy and/or a receiver be appointed for the business conducted on the leased premises, or should default be made in payments heretofore stipulated or default in payments of royalties, or should any default in any other covenant or condition of this lease continue for thirty days after notice thereof to the Second Parties and demand that same be cured, the First Parties may immediately terminate this lease, re-enter the premises and remove the Second Parties therefrom.

(q) The Second Parties agree to be on the premises and start operations not later than August 10, 1951.

The First Parties agree to the following terms and conditions as follows:

(1) The Second Parties have the right to immediate possession of all the above described premises.

(2) The Second Parties have the sole and exclusive right to mine, remove and/or treat any minerals from the dump or dumps on said premises, and/or under or upon said premises or any part thereof.

(3) The Second Parties have the right to place upon any part of said premises or in the same, such machinery, equipment, buildings, structures, personal property, or improvements as they may desire.

(4) Second Parties have the right to remove any or all of the items stipulated in Item 3 with the exception of the following: gallows frames, or any timbers placed under ground.

It is expressly understood by all parties:

(1a) That all items stipulated in Item 3 above with the exception of items noted in Item 4 above shall remain the personal property of the Second Party and shall never become real property no matter how attached, and Second Parties have the right to remove the same at their own discretion.

(2a) If the work be not commenced within the time heretofore stipulated, or that if any payments due shall not be made that fact shall ipso facto operate to terminate this lease unless a waiver is given to the Second Parties by the First Parties. No waiver by First Parties of a breach by the Second Parties of any covenant or term of this lease shall be construed to be a waiver of any succeeding breach of the same or any other covenant, condition or term of this lease.

(3a) In the event the royalties earned and paid to First Parties in any one calendar month shall exceed one hundred dollars ($100.00), then in that case it shall not be applied upon the minimum rent insuing in any subsequent month.

(4a) Second Parties have the right to terminate this lease at any time providing all moneys due the First Parties have been paid and the underground working left accessible to entry.

(5a) Second Parties have the right to use any equipment which is now upon the premises and in the event they wish to terminate this lease they shall leave the same in the condition in which they found it.

(6a) Second Parties to have the right to reconvey, or reassign any or all of their interest in this lease to any party or parties providing that all the terms, conditions, and covenants of the lease have been fully complied with up to the time of said assignment.

It is expressly understood that the Second Parties and their assigns will be responsible unto the First Parties to fulfill all the terms, conditions,

commitments, and covemants contained in this lease.

(7a) Subject to all of the limitations hereinbefore expressly set forth the benefits and obligations of this lease and bond shall emure to and bind all parties hereto, their heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the Parties hereto have caused this instrument to be executed as of the day and year first hereinabove written.

/s/ Ralph C. Hatton

/s/ Vera E. Hatton

First Parties

/s/ R. B. Records

/s/ H. H. Records

/s/ Harry N. Forman

Second Parties

STATE OF CALIFORNIA

COUNTY OF LOS ANGELES: SS

On this first day of August, 1951, before me, a Notary Public in and for said County and State, personally appeared Ralph C. Hatton and Vera E. Hatton, R. B. Records, H. H. Records, and Harry N. Forman, known to me to be the persons whose names are subscribed to the above instrument, and acknowledged to me that they executed same.

/s/
Notary Public in and for said
County and State

(951)

UNITED STATES DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. ~~237~~ DMEA-2374

Metal or Mineral

Date Received 2-13-52

Amount $

Participation (Government %)

DEPARTMENT OF THE INTERIOR Defense Minerals Administration RECEIVED FEB 13 1952

Name and address of applicant

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

or c/o GLENN A. SMITH & ASSOCIATES
555 S. Alexandria Ave., Los Angeles 5, Calif.

Date FEBRUARY 5, 1952

RECEIVED FEB 12 1 03 PM '52 DEFENSE MATERIALS PROCUREMENT AGENCY

If you have already filed MF-100, give date filed February 5, 1952, type of assistance requested Procurement Contract

DMA Docket Number (if available) 2263

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

BLACK HAWK MINING COMPANY
(Name of company)

By Harry N. Forman
(Signature of authorized official)

FEBRUARY 5, 1952
(Date)

Partner
(Title)

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—64067-2

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

TO BE ATTACHED TO AND MADE A PART OF FORM MF-103

1. (a) Southwest quarter of Section 5, Township 31 South, Range 33 East, M.D.B.M., Kern County, California, generally known as the Black Hawk Mine.

   (b) Copy of lease attached.

   (c) Same as 1. (a).

2. (a) Zinc Ore.

   (b) See report and assay map by William O. Jenkins, Mining Engineer, attached to Form MF-100.

3. (a) It is proposed to do additional core drilling, open up new tunnels, and to do such other necessary exploration and development work as may be determined necessary. The total cost is estimated at approximately $25,000.00.

(b) Work can start immediately and can be completed within ninety days.

4. See map attached to Form MF-100.

5. 1 - 50 HP Air Compressor
1 - Slusher
1 - Portable 50 HP Gasoline Engine & Generator
4 - Mine Dump Cars
500' - Mine Rail
Jackhammers, drill steel, small tools, etc.
1 - approximately 100-ton Loading Bin

6. Housing - 2 Trailers for 8 Men (Rental) 3 months @ 1200.00 per month	$ 3,600.00
7. (a) Service Truck - 3 months @ 600.00 per month	1,800.00
Diamond Drill Rigs - 3 months @ 500.00 per month	1,500.00
(b) Compressors, Jackhammbers, Hose, Teel, 3 months @ 471.00 per month	1,413.00
(b) Timber for Mine Shaft, etc.	1,500.00
(c) None	
8. Superintendent 72 days @ 25.00	1,800.00
3 - Miners 72 days @ 67.50 for 3	4,860.00
3 - Muckers & Helpers - 72 days @ 49.50	3,564.00
1 - Utility Man 72 days @ 16.50	1,188.00
9. Engineering Fee	1,000.00
Assaying & Sampling	1,000.00
Blast Power, Caps, Fuses @ $150.00 per month	450.00
Gas & Oil - 3 months @ $300.00	900.00
Camp Equipment	150.00
Bottled Gas @ $60.00 per month	180.00
Total	$24,905.00

The above estimate is based on a three months period. We are willing to proceed with exploration work for a one month period for one-third of this estimate, or for a two month period for ~~two-thirds~~ of this estimate, provided by so doing (a) the approval of this application will be expedited, and (b) the exploration work which can be accomplished in a shorter period will satisfy your department that a sufficient reserve of ore exists to warrant approval of our application for Procurement Contract, dated December 4, 1951, D.P.M.A. Docket 2263.

10. (a) $12,500.00.

(b) Yes

11. None

A G R E E M E N T

BOND AND LEASE

THIS AGREEMENT, made and entered into this first day of August, 1951 by and between RALPH C. HATTON, and VERA E. HATTON, his wife, of 1104 W. 99th Street, Los Angeles, California, hereinafter called FIRST PARTIES, and R. B. RECORDS of 500 Irene Street, Bakersfield, California, H. H. RECORDS of 9044 Priscilla Street, Downey, California, and 336 N. Poinsettia Place, Los Angeles, California, hereinafter called SECOND PARTIES.

WITNESSETH:

In consideration of ten dollars ($10.00) in hand paid by Second Parties to First Parties, receipt of which is hereby acknowledged, as a partial advance on rentals and to induce First Parties to enter into this agreement, and in consideration of the performance by Second Parties of the terms and conditions hereinafter stated and set forth by Second Parties to be kept and performed, in the manner hereinafter stated, the First Parties do hereby demise and lease unto said Second Parties, for a period of fifty years from and after the date hereof the following described premises, located and situated in Kern County, State of California, to wit:

LOCATION: Southwest quarter of Section 5, Township 31 South, Range 33 East, M.D.B.M., Kern County, California. This premises is generally known as the Black Hawk Mine.

The Second Parties agree to comply with the following terms and conditions:

(a) Beginning November 1, 1951 to pay the First Parties a minimum of one hundred dollars ($100.00) rental and one hundred dollars ($100.00) on the first of each and every month thereafter for the remaining life of this lease.

(b) Second Parties agree to pay the First Parties a royalty of ten percent (10%) of the gross receipts from any ores or concentrates produced from the premises until the sum of twenty-five thousand dollars ($25,000.00) has been paid.

(c) After the first twenty-five thousand dollars ($25,000.00) has been paid, the Second Parties agree to pay the First Parties seven and one-half percent (7½%) royalties of the gross receipts from any ores or concentrates produced from the premises until an additional twenty-five thousand dollars ($25,000.00) has been paid.

(d) When a total of fifty thousand dollars ($50,000.00) has been paid, the Second Parties agree to pay the First Parties five percent (5%) of the gross receipts from any ores or concentrates produced from the premises and shall continue to do so for the remaining life of this lease.

(e) The Second Parties agree to supply First Parties with the settlement sheet from the buyers of any ores or concentrates produced from the premises and pay any moneys due the First Parties on or before the 20th day of each and every month.

(f) Royalty payments above mentioned shall be based on seventy percent (70%) of the ore values determined by true and accurate assays. The value of these assays shall be determined by daily quoted metal prices. The Second Parties

will make or have made true and accurate assays of all ore taken from the property, and will submit copies of said assays to First Parties when making shipments.

(g) The Second Parties agree to perform all mining operations in a good and minerlike manner and to comply with all the laws, rules, and regulations stipulated under the laws of the State of California pertaining to the practice of mining.

(h) The Second Parties agree to commit no waste of the premises, and in that behalf pay, before delinquent, all taxes levied or assessed against the premises, or against any buildings, or equipment placed thereon.

(i) The Second Parties agree to comply with the laws covering the Workman's Compensation Act and carry compensation insurance or its equivalent upon all workmen in or upon said premises.

(j) The Second Parties agree when requested by the First Parties to give unto the First Parties a copy of any assay made by the Second Parties and an accurate description of where samples were taken.

(k) The Second Parties agree at all times to keep the premises free and clear of mechanic's liens that might arise out of any action in the pursuit and operation of these premises. To post in a conspicuous place on the premises a notice of the non-responsibility of the First Parties and record said notice in Bakersfield, Kern County, California.

(l) To save, defend, indemnify, and hold harmless the First Parties from and against all manner of claims, demands, damages, and action and causes of action whether at law or in equity, asserted by or on behalf of any third party by reason or use or occupancy of said premises, or on account of any commission or omission arising out of or performed in connection with the Second Parties use or operation thereof.

(m) The Second Parties agree to do forty shifts, each shift to be eight man-hours work upon the premises each and every month for the life of this lease, duress cases excepted such as an act of God, strikes, or lockouts, closure by Government decree, or inability to obtain materials.

(n) The Second Parties agree and accept said premises in the condition in which the same now is, it being agreed in that behalf that the First Parties shall not be liable to the Second Parties or any third party for any damage of any character resulting from any defect or imperfection latent or patent in or about the premises.

(o) The Second Parties agree that the First Parties have the right to enter upon the premises at reasonable times to inspect the same at their own risk.

(p) The Second Parties agree that should they be put into bankruptcy and/or a receiver be appointed for the business conducted on the leased premises, or should default be made in payments heretofore stipulated or default in payments of royalties, or should any default in any other covenant or condition of this lease continue for thirty days after notice thereof to the Second Parties and demand that same be cured, the First Parties may immediately terminate this lease, re-enter the premises and remove the Second Parties therefrom.

(q) The Second Parties agree to be on the premises and start operations not later than August 10, 1951.

The First Parties agree to the following terms and conditions as follows:

(1) The Second Parties have the right to immediate possession of all the above described premises.

(2) The Second Parties have the sole and exclusive right to mine, remove and/or treat any minerals from the dump or dumps on said premises, and/or under or upon said premises or any part thereof.

(3) The Second Parties have the right to place upon any part of said premises or in the same, such machinery, equipment, buildings, structures, personal property, or improvements as they may desire.

(4) Second Parties have the right to remove any or all of the items stipulated in Item 3 with the exception of the following: gallows frames, or any timbers placed under ground.

It is expressly understood by all parties:

(1a) That all items stipulated in Item 3 above with the exception of items noted in Item 4 above shall remain the personal property of the Second Party and shall never become real property no matter how attached, and Second Parties have the right to remove the same at their own discretion.

(2a) If the work be not commenced within the time heretofore stipulated, or that if any payments due shall not be made that fact shall ipso facto operate to terminate this lease unless a waiver is given to the Second Parties by the First Parties. No waiver by First Parties of a breach by the Second Parties of any covenant or term of this lease shall be construed to be a waiver of any succeeding breach of the same or any other covenant, condition or term of this lease.

(3a) In the event the royalties earned and paid to First Parties in any one calendar month shall exceed one hundred dollars ($100.00), then in that case it shall not be applied upon the minimum rent insuing in any subsequent month.

(4a) Second Parties have the right to terminate this lease at any time providing all moneys due the First Parties have been paid and the underground working left accessible to entry.

(5a) Second Parties have the right to use any equipment which is now upon the premises and in the event they wish to terminate this lease they shall leave the same in the condition in which they found it.

(6a) Second Parties to have the right to reconvey, or reassign any or all of their interest in this lease to any party or parties providing that all the terms, conditions, and covenants of the lease have been fully complied with up to the time of said assignment.

It is expressly understood that the Second Parties and their assigns will be responsible unto the First Parties to fulfill all the terms, conditions,

commitments, and covemants contained in this lease.

(7a) Subject to all of the limitations hereinbefore expressly set forth the benefits and obligations of this lease and bond shall enure to and bind all parties hereto, their heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the Parties hereto have caused this instrument to be executed as of the day and year first hereinabove written.

/s/ Ralph C. Hatton

/s/ Vera E. Hatton

First Parties

/s/ R. B. Records

/s/ H. H. Records

/s/ Harry N. Forman

Second Parties

STATE OF CALIFORNIA

COUNTY OF LOS ANGELES: SS

On this first day of August, 1951, before me, a Notary Public in and for said County and State, personally appeared Ralph C. Hatton and Vera E. Hatton, R. B. Records, H. H. Records, and Harry N. Forman, known to me to be the persons whose names are subscribed to the above instrument, and acknowledged to me that they executed same.

/s/
Notary Public in and for said
County and State

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2374

Date received 2-13-52

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 13 1952

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

c/o GLENN A. SMITH & ASSOCIATES
555 S. Alexandria Ave., Los Angeles 5, Calif.

Name and address of applicant

Date FEBRUARY 5, 1952

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

RECEIVED
FEB 6 1952
DEFENSE MATERIALS PROCUREMENT AGENCY

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☒ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
Harry H. Fowler 336 N. Poinsettia Pl. Los Angeles, California	co-partner	none	$50,000	—	—	none	none
H. H. Records 9440 Priscella Ct. Downey, California	co-partner	none	$ 25,000	—	—	none	none
Robert Records 500 Irene St. Bakersfield, California	co-partner	none	$ 25,000	—	—	none	none
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)	zinc ore	none	none	none	70 tons
2. Quantity of product processed (specify unit of measure and type of process)		N O N E			
3. Quantity and grade of product sold or shipped (specify units of measure)		N O N E			

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

BLACK HAWK MINING COMPANY
(Name of company)

By Harry N. Forman
(Signature of authorized official)

FEBRUARY 5, 1952
(Date)

Partner
(Title)

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—63792-1

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

TO BE ATTACHED AND MADE PART OF FORM MF-100.

1. (a) Zinc Ore.
   (b) Lead, copper, silver, gold, antimony - secondary elements in zinc ore.
2. Black Hawk Mine, lode type.
2. (a) 182 feet of shafts.
   (b) 345 linear feet of drifts and crosscuts.
   (c) 100 linear feet of tunnels and adits.
   (d) 500 linear feet of mine openings.

   No water problem, no flooding and no pumping problem.
   See engineer's report attached as to productive capacity.

3. (a) 13½ miles east of Caliente, California.
   (b) Caliente mining district.
   (c) Township 31, section 5, range 33 east, MDE & M, Kern, County, California.
   (d) Kern County, California.

4. (a) Only the mandatory development work required by lease terms is now being done by the Black Hawk Mining Company.

5. There is no commercial production of zinc ore at present. Mine was a producer of silver some years ago. Mine will be placed on commercial production when loan for completion of a smelter to be located at Caliente has been granted.

6. H. H. Records and Robert Records have each had fifteen years of experience as mining engineers and in operation of mines and smelters. Harry N. Forman has had thirty years experience as executive and administrative head of several successful business enterprises.

7. (a) Mine was originally developed for gold and silver about twenty years ago. Subsequently, prior to 1946, the mine was operated on a small scale for zinc-lead ore, but operation was suspended because it was impossible to operate the mine profitably at prices then prevailing for zinc-lead ore after payment of high custom smelter fees, rail freight, etc. This mine can be profitably operated only if the ore is smeltered in a smelter adjacent or near to the mine, as planned by the Black Hawk Mining Co.

   (b) There is no known lead and zinc production on adjoining properties. There is gold, silver, antimony and tungsten being produced in near by mines.

   (c) See enclosed report by William O. Jenkins, Jr., Mining Engineer.

11. Based on present tunnels and diamond drill exploration, it is proposed to increase production to approximately 3,000 tons per month as a basis for the proposed construction of a smelter to be situated at Caliente for the treatment of this ore.

12. (a) Refer to the attached report and assay map prepared by William O. Jenkins, Mining Eng.

13. 11 miles of county blacktop road and 4 miles of graded gravel road from mine to nearest shipping and supply point. Roads are in good shape and can be used the year round.

14. Water is available from flowing springs on the mine property in all seasons sufficient in volume for the proposed operation. Additional water is available in unlimited quantities by drilling of wells to about 60 feet.

15. Power for air compressor, lights and motor will be furnished by gasoline powered engine and generator. Additional power is available from nearby power line of the Southern California Edison Company if required.

16. During the past year we have employed 2 to 3 miners continuously for core drilling, stoping and tunnel repair work.

17. Following is a list of equipment, all in good operating condition, now on the property.

1 - 50 HP Air Compressor
1 - Slusher
1 - Portable 50 HP Gasoline Engine & Generator
4 - Mine Dump Cars
500'- Mine Rail
Jackhammers, drill steel, small tools, etc.
1 - Approximately 100-ton Loading Bin.

BLACK HAWK MINES, KERN COUNTY, CALIFORNIA

REPORT OF GEOLOGICAL EXAMINATION

The Black Hawk Mines, situated in the SW$\frac{1}{4}$ of Section 5, Township 31 South, Range 33 East, MDB&M, Kern County, California, approximately 14 miles southeast of Caliente, were visited on August 4 and 5, 1951 by the writer, accompanied by Mess'rs. Harry Forman, Stuart Franklin, Henry Records and Robert Records.

Purpose of this visit was to make a geological examination of the property, to study the geological and mineralogical relationships of the ore deposits and to determine, insofar as a limited investigation would permit, whether or not the property possesses sufficient merit from a geological standpoint to warrant further development and exploitation.

Inasmuch as earlier reports on this property have already dealt with general description of terrain, accessibility of property, elevation, vegetation, water supply, ownership, general condition of the mine as regards timber, rails, mining entries and other descriptive material, this report will be confined to its geological aspects.

SUMMARY AND CONCLUSIONS

Ore deposits of the Black Hawk Mines are replacements of limestone horizons in metamorphic rocks constituting a roof-pendant in a granitic terrain. Orebodies are narrow, steeply dipping and elongated, striking in a northeasterly direction. The north deposit is exposed nearly continuously for a distance of 300 feet along the strike and gives promise of continuing another 700 feet to the Apex Shaft. The south deposit has an indicated length of 400 feet plus a possible extension of another 450 feet, joining the north deposit in the vicinity of the Apex Shaft.

Orebodies vary in width from three to 25 feet. Indicated tonnage of reserves is estimated at 82,300 tons. Of this, 65,600 tons are assigned to the north deposit and 16,700 tons to the south deposit. Inferred extensions of indicated reserves are as follows: North Deposit, 50,000 tons. South Deposit, 22500 tons. Total indicated and inferred reserves are estimated at 154,800 tons.

Samples taken show little or no gold, from zero to 4.59 oz. per ton in silver, zero to 4.45 per cent lead and 5.45 to 22.10 per cent zinc.

Mining can be started with a minimum of preparatory work and within a short time up to fifty tons of ore per day can be produced simultaneously with an effective development program.

The deposit has a great deal of merit and shows promise of a substantial and persistent supply of ore. No unusual mining problems are anticipated and it is the conclusion of the writer that if a successful metallurgical treatment of these ores can be made, in order to make a profitably salable product, a highly successful operation can be anticipated.

GENERAL GEOLOGY

Ore deposits of the Black Hawk Mines occur as elongated lenticular bodies, enclosed in schist and quartzite. The general nature of the orebodies and the presence of recrystallized limestone adjacent to and interfingered with the ore in places indicate that the deposits are replacements of limestone members of the metamorphic series which itself is a roof pendant in a predominantly granitic terrain. Whether or not the orebodies may be regarded as contact-metamorphic deposits is a matter to be determined by more detailed study.

The deposits strike in general in a northeast direction, dipping steeply to the southeast. There is an apparant junction of the north and south deposits at a point in the vicinity of the Pine Tree Shaft or the Apex Shaft a couple of hundred feet further southeast. This junction is regarded by the writer as the expression of a rising or plunging structural fold in the stratified metamorphic rocks rather than as the intersection of two fault zones.

In any event, both the north and south deposits strike toward the Apex Shaft at which point a well-defined, steeply dipping (southeast) orebody with a width of approximately six feet may be seen. Though outcrops were not traced continuously to this point from either deposit, scattered outcrops along each trend indicate the possibility of a continuity of ore from both the north and the south workings to a common point in the vicinity of the Apex Shaft.

In addition to the North and South deposits, an intermediate deposit, shown on the map as "Middle Workings", situated due south about 350 feet from No. 1 North portal and about 150 feet southeast of the projection of strike of the No. 1 deposit. Poor exposures and a caved working entry render the geologic relations here obscure. However, about 20 tons of good-looking ore has been piled on the dump here. This deposit may represent a lesser but related and similar horizon of ore.

NORTH WORKINGS (See map for location)

The ore deposit explored by the North Workings and exposed underground by them may be traced along the surface, up a rather steep ridge, for a distance of 300 feet. Its greatest exposed width is at the portal of No. 1 North tunnel where the width of ore measured across the dip is 25 feet. It narrows along the strike to the southwest to approximately three feet, 300 feet from the portal. Immediately northeast of the portal there is a two-compartment shaft, forty feet deep and bottomed in unoxidized ore. The shaft was not entered by the writer, because of its dangerous condition. It is said to have been sunk about 1942. Reports indicate the shaft was sunk in ore from top to bottom.

The North Workings are the most recently worked portion of the deposits. In June, 1951, 67 tons of ore were shipped from here to a mill in the vicinity of Mojave. Results of this mill run are not in the writer's possession, but it would be well to obtain them for study, for they probably constitute the best obtainable sample that could be taken from these workings.

It is very likely that a northeast extension of the orebody will be discovered by further work. The orebody widens to the northeast, its widest point being at the portal of the tunnel. Though the hillside slopes steeply downward in

this direction, there is a good possibility for development of a sizable tonnage of ore below the present working level in this direction.

No. 1 level development extends for 85 feet southwest along the strike. Ore is persistent to the face. At the portal the ore zone is twenty-five feet in width. Thirty feet within the tunnel, a crosscut to the northwest shows ore across an eighteen-foot width, although here lenticular masses of barren metamorphic rock reduce the actual width of ore to approximately twelve feet. Most of the recently shipped ore was taken from the area between the portal and this crosscut.

This orebody may be followed on the surface for 300 feet to the southwest. Outcrops are virtually continuous for this distance. Two trenches, approximately 100 feet long were observed where they had been dug across the strike, but they have long since filled with dirt and grass grows in them, hiding whatever exposures may have been made. Cleaning these trenches out should be a part of any realistic exploration program here. Dips remain constantly steep as the orebody is followed southwest, but the ore narrows to about three feet at the 300 fot mark.

As previously stated, the Apex Shaft lies along the projection of this strike and about 700 feet further southwest. Scattered outcrops may be seen in this distance and the possibility is good for a continuation of ore to the Apex. Thereby a total length from the No. 1 portal to the Apex of 1000 feet, would be attained.

Ore in the No. 1 workings, as exposed close to the surface is largely oxidized. However, "niggerheads" of unaltered sulfide ore are present, even close to the surface. Ore taken from the bottom of the forty-foot shaft is unoxidized. Apparently the zone of oxidation extends not more than thirty feet or so beneath the surface. Assays showing a relatively high content of zinc in the oxidized zone indicate that it has not been transported downward and has probably been altered to the carbonate ore smithsonite from the primary sphalerite.

In this deposit, replacement of the original limestone has been virtually complete. Very little recrystallized limestone is in evidence, the ore being bounded on each side by resistant quartzite and schist.

Samples S1 through S-5 were taken from the North Workings. Assay results are shown on the attached map, together with sample locations and widths cut.

SOUTH WORKINGS (See map for location)

South Workings consist of two level developments designated as No. 1 and No. 2. No. 1 is approximately 100 feet higher than No. 2 and is the level from which several cars of ore were shipped in 1948 or possibly earlier.

Ore is found in both levels. No. 2, the lower level, crosscuts the metamorphic rocks for about 125 feet before it encounters a five-foot width of ore at a point 180 feet northeast along the strike of the orebody from a point directly below the stope in No. 2 where shipping ore was mined.

The upper level, No. 1, crosscuts the formations for 60 feet before entering

ore, when it encounters unaltered sulphide ores approximately ten feet wide that dip steeply to the southeast. Here the area has been mined by raising above the level and by sinking a winze below it. At this point the tunnel as turned southwest along the strike and continues in ore for a distance of 75 feet.

Surface outcrops may be followed up the hill to the southwest from South No. 1 and though they are not continuously exposed, may be traced toward the Pine Tree Shaft and the Apex Shaft beyond it. It is approximately 700 feet southwest from the portal of No. 1 south to the Apex Shaft.

Replacement of pre-existing recrystallized limestone has not been so complete in the South Workings as in the North, and lenses of limestone may be found in the ore zone. Quartz veins and tongues of granitic igneous rock may be found in the workings that show a great variation in grain size and bear a close resemblance to pegmatitic structure. The deposit as a whole is similar to the contact metamorphic deposits found a few miles to the north.

In general, ore in this deposit is less altered and oxidized than that in the North deposit. The stoped area is characterized by coarsely crystalline sulphide ore.

OTHER WORKINGS

In addition to the North and South Workings as described heretofore, there is the area referred to under "General Geology" as the Middle Workings. There are also the Apex Shaft, the Pine Tree shaft and an open cut about 50 feet south of the Pine Tree Shaft. The Pine Tree shaft is about 40 feet deep and was sunk in ore. The cut fifty feet south of it is also in ore. The Apex, said to be the oldest working on the property, having been sunk in the 1880's, goes down on ore approximately six feet wide for a reported 80-foot depth. Here the ore strikes N 45° E and dips 83° southeast. Surface outcrops of ore were observed 200 feet southwest of this shaft, further lengthening the orebodies.

ORE RESERVES

Estimated ore reserves based upon the examination described herein follow:

Indicated reserves based on underground and surface exposures:	
North Deposit: 350' long by 15' wide by 150' deep (This 150' depth includes the 40' in the shaft)	65,600 tons
North Deposit: (Above working level only. Does not include any ore below the level)	43,740 tons
South Deposit: 400' long by 5' wide by 100' deep	16,700 tons
Total indicated reserves in North and South Workings, including ore below main level North Workings	82,300 tons
Inferred ore in addition to Indicated ore shown above:	
North Deposit - end of outcrop to Apex Shaft 600' long by 5' wide by 200' deep	50,000 tons
South Deposit - end of outcrop to Apex Shaft 450'flong by 4' wide by 150' deep	22500 tons
Total Indicated and Inferred ore in both deposits	154,800 tons

(Note: This is a conjectural figure based upon possible extensions of known

deposits and is not to be regarded in any senses as an assured tonnage. It is, however, entirely withing the realm of possibility and has been arrived at by a reasonable extension of visible reserves.)

SAMPLES

A total of seven samples were taken at the Black Hawk Mines during this investigation. These were submitted to Smith-Emery Company of Los Angeles for assaying. Results obtained are discussed in the following.

North Workings:
Samples S1, S2 and S3 were taken across the face of exposed ore at the portal of No. 1 North. The ore in this area is largely oxidized, although there are present nodules of unaltered ore.. Sample S1 was cut seven feet across the ore from the hanging wall side toward the footwall. S2 was also cut across the ore from a point ten feet from the hanging wall to a point 17 feet from it. S3 covered the area from the 17 foot mark to the 23 foot mark from the hanging wall. A calculated composite of the three samples is given below, which should be representative of the total width of ore. The individual assays should be helpful in determining variations in tenor of ore across this face.

Sample No.	Description	Gold Oz.	Gold Value	Silver Oz.	Silver Value c	Lead %	Zinc %
S1	Hanging Wall to plus seven feet	Trace	-	1.52	$1.37	3.28	8.85
S2	Plus 10 to plus 17	0.01	$0.35	4.59	$4.52	1.10	9.50
S3	Plus 17 to plus 23	Trace	-	1.26	$1.14	3.92	5.45
AVERAGE OF THREE SAMPLES		--	--	2.69	$2.34	2.77	7.93

The average given above is indicative of the values to be expected in at least the initial phases of mining at the No. 1 North Workings.

In addition to the above, Sample S4 was cut across the back of the main drift at a point 35 feet in from the portal. This sample showed only a trace of gold, no silver or lead, but was very high in zinc, assaying 22.10%. The friable, earthy nature of the portion of this sample farthest from the hanging wall, together with the high zinc content, indicates the presence here and in other localized portions of the oxidized zone of smithsonite (zinc carbonate), produced by the dissolving action of surface waters and the precipitating effect of limestone. It is an example of secondary enrichment and although it may be encountered here and there in the upper zone, will not show up in the unaltered sulphide zone.

Another sample, S5, was chipped from pieces of unaltered ore said to have been removed from the bottom of the 45 foot shaft at the portal of Nol North Tunnel. It contained a trace of gold, o.44 oz silver at $0.40, 0.40% lead and 15.80% zinc.

South Workings
Only two samples were taken from the No. 1 South Workings. One of these was cut for eight feet across the back of the left branch of the main tunnel, as

shown on map (Sample No. S6). The other was taken from the stoped area where the tunnel first encounters the ore zone (Sample S7). Results are as follows:

	Gold		Silver		Lead	Zinc
	Oz.	Value	Oz.	Value		
S6	0.01	$0.35	0.45	$0.41	4.45%	5.75%
S7	Trace	-	0.64	$0.58	2.15%	6.22%

FUTURE DEVELOPMENT AND EXPLOITATION

It appears that the most logical method of exploiting the mine workings is to attack both No. 1 North and No. 1 South Workings. Mining operations can be started in either or both of these areas with a minimum of preparatory work and ore can be taken from both of them from the start. Initial development work, to be carried on simultaneously with mining can be started easily in No. 2 South Tunnel, the lower level. The ore zone can be followed at this level in both directions along its strike, particularly to the southwest, where tonnage will be developed more rapidly and where a satisfactory haulage tunnel can be produced to handle ore mined from the level above and from the intervening area. Development program in No. 1 North workings would include driving a heading southwest along the strike ahead of mining operations and might also involve retimbering and rehabilitating the shaft, deepening it and starting a lower level development from its bottom.

CONCLUSIONS

It is concluded from this investigation that the possibility of developing a substantial tonnage of ore at the Black Hawk Mine is indeed a very good one. Orebodies are strong and persistent, giving promise of considerable length and depth. There is a good chance of discovering orebodies in other horizons of the metamorphic rocks in this immediate area. Assuming that the problems involved in concentration, smelting or other treatment of the mined ore can be overcome, the mine itself could be developed rapidly to the point where a steady production of fifty tons per day could be maintained. Production of no more than fifty tons daily is recommended at this time because of the present lack of working faces from which to mine a greater tonnage.

Respectfully Submitted,

William O. Jenkins

William O. Jenkins
Consulting Mining Geologist

Alhambra, California
August 9, 1951

MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2374
Metal or Mineral
Date Received 2-13-52
Amount $
Participation (Government %)

DEPARTMENT OF THE INTERIOR
Defense Mineral Administration
RECEIVED
FEB 1 3 1952

Name and address of applicant

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

c/o GLENN A. SMITH & ASSOCIATES
555 S. Alexandria Ave., Los Angeles 5, Calif.

Date FEBRUARY 5, 1952

RECEIVED
DEFENSE MATERIALS PROCUREMENT AGENCY
1952 FEB 12 1 03 PM '52

If you have already filed MF-100, give date filed February 5, 1952, type of assistance requested Procurement Contract

DMA Docket Number (if available) 2263

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

(*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

(*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

(2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

(*a*) What metals or minerals do you expect to find?

(*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

BLACK HAWK MINING COMPANY
(Name of company)

By Harry N. Forman
(Signature of authorized official)

FEBRUARY 5, 1952
(Date)

Partner
(Title)

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—64067-2

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

TO BE ATTACHED TO AND MADE A PART OF FORM MF-103

1. (a) Southwest quarter of Section 5, Township 31 South, Range 33 East, M.D.B.M., Kern County, California, generally known as the Black Hawk Mine.

   (b) Copy of lease attached.

   (c) Same as 1. (a).

2. (a) Zinc Ore.

   (b) See report and assay map by William C. Jenkins, Mining Engineer, attached to Form MF-100.

3. (a) It is proposed to do additional core drilling, open up new tunnels, and to do such other necessary exploration and development work as may be determined necessary. The total cost is estimated at approximately $25,000.00.

(b) Work can start immediately and can be completed within ninety days.

4. See map attached to Form MF-100.

5. 1 - 50 HP Air Compressor
1 - Slusher
1 - Portable 50 HP Gasoline Engine & Generator
4 - Mine Dump Cars
500' - Mine Rail
Jackhammers, drill steel, small tools, etc.
1 - approximately 100-ton Loading Bin

6. Housing - 2 Trailers for 8 Men (Rental) 3 months @ 1200.00 per month	$ 3,600.00 ?
7. (a) Service Truck - 3 months @ 600.00 per month	1,800.00
Diamond Drill Rigs - 3 months @ 500.00 per month	1,500.00
(b) Compressors, Jackhammbers, Hose, Teel, 3 months @ 471.00 per month	1,413.00
(b) Timber for Mine Shaft, etc.	1,500.00
(c) None	
8. Superintendent 72 days @ 25.00	1,800.00
3 - Miners 72 days @ 67.50 for 3	4,860.00
3 - Muckers & Helpers - 72 days @ 49.50	3,564.00
1 - Utility Man 72 days @ 16.50	1,188.00
9. Engineering Fee	1,000.00
Assaying & Sampling	1,000.00
Blast Power, Caps, Fuses @ $150.00 per month	450.00
Gas & Oil - 3 months @ $300.00	900.00
Camp Equipment	150.00
Bottled Gas @ $60.00 per month	180.00
Total	$24,905.00

The above estimate is based on a three months period. We are willing to proceed with exploration work for a one month period for one-third of this estimate, or for a two month period for ~~one-third~~ of this estimate, provided by so doing (a) the approval of this application will be expedited, and (b) the exploration work which can be accomplished in a shorter period will satisfy your department that a sufficient reserve of ore exists to warrant approval of our application for Procurement Contract, dated December 4, 1951, D.P.M.A. Doc~~ment~~ 2263.

10. (a) $12,500.00.

(b) Yes

11. None

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA

FOR USE UNDER THE

DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2374

Date received 2-13-52

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 13 1952

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

or c/o GLENN A. SMITH & ASSOCIATES
555 S. Alexandria Ave., Los Angeles 5, Calif.

Name and address of applicant

Date FEBRUARY 5, 1952

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

RECEIVED
FEB 12 1 03 PM '52
DEFENSE MATERIALS PROCUREMENT AGENCY

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated.

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☒ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
Harry N. Forman 336 N. Poinsettia Pl. Los Angeles, California	co-partner	none	$150,000	—	—	none	none
H. H. Records 9440 Priscella St. Downey, California	co-partner	none	$ 25,000	—	—	none	none
Robert Records 500 Irene St. Bakersfield, California	co-partner	none	$ 25,000	—	—	none	none
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)	zinc ore	none	none	none	70 tons
2. Quantity of product processed (specify unit of measure and type of process)		N O N E			
3. Quantity and grade of product sold or shipped (specify units of measure)		N O N E			

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

(*b*) If deposit is other than plac

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

BLACK HAWK MINING COMPANY
(Name of company)

By Harry N. Forman
(Signature of authorized official)

FEBRUARY 5, 19[illegible]
(Date)

Partner
(Title)

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—63792-1

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

TO BE ATTACHED AND MADE PART OF FORM MF-100.

1. (a) Zinc Ore.
   (b) Lead, copper, silver, gold, antimony - secondary elements in zinc ore.
2. Black Hawk Mine, lode type.
2. (a) 182 feet of shafts.
   (b) 345 linear feet of drifts and crosscuts.
   (c) 100 linear feet of tunnels and adits.
   (d) 500 linear feet of mine openings.

   No water problem, no flooding and no pumping problem.
   See engineer's report attached as to productive capacity.

3. (a) 13½ miles east of Caliente, California.
   (b) Caliente mining district.
   (c) Township 31, section 5, range 33 east, MDE & M, Kern County, California.
   (d) Kern County, California.

4. (a) Only the mandatory development work required by lease terms is now being done by the Black Hawk Mining Company.

5. There is no commercial production of zinc ore at present. Mine was a producer of silver some years ago. Mine will be placed on commercial production when loan for completion of a smelter to be located at Caliente has been granted.

6. H. H. Records and Robert Records have each had fifteen years of experience as mining engineers and in operation of mines and smelters. Harry N. Forman has had thirty years experience as executive and administrative head of several successful business enterprises.

7. (a) Mine was originally developed for gold and silver about twenty years ago. Subsequently, prior to 1946, the mine was operated on a small scale for zinc-lead ore, but operation was suspended because it was impossible to operate the mine profitably at prices then prevailing for zinc-lead ore after payment of high custom smelter fees, rail freight, etc. This mine can be profitably operated only if the ore is smeltered in a smelter adjacent or near to the mine, as planned by the Black Hawk Mining Co.

   (b) There is no known lead and zinc production on adjoining properties. There is gold, silver, antimony and tungsten being produced in near by mines.

   (c) See enclosed report by William O. Jenkins, Jr., Mining Engineer.

11. Based on present tunnels and diamond drill exploration, it is proposed to increase production to approximately 3,000 tons per month as a basis for the proposed construction of a smelter to be situated at Caliente for the treatment of this ore.

12. (a) Refer to the attached report and assay map prepared by William O. Jenkins, Mining Eng.

13. 11 miles of county blacktop road and 4 miles of graded gravel road from mine to nearest shipping and supply point. Roads are in good shape and can be used the year round.

14. Water is available from flowing springs on the mine property in all seasons sufficient in volume for the proposed operation. Additional water is available in unlimited quantities by drilling of wells to about 60 feet.

15. Power for air compressor, lights and motor will be furnished by gasoline powered engine and generator. Additional power is available from nearby power line of the Southern California Edison Company if required.

16. During the past year we have employed 2 to 3 miners continuously for core drilling, stoping and tunnel repair work.

17. Following is a list of equipment, all in good operating condition, now on the property.

1 - 50 HP Air Compressor
1 - Slusher
1 - Portable 50 HP Gasoline Engine & Generator
4 - Mine Dump Cars
500'- Mine Rail
Jackhammers, drill steel, small tools, etc.
1 - Approximately 100-ton Loading Bin.

BLACK HAWK MINES, KERN COUNTY, CALIFORNIA

REPORT OF GEOLOGICAL EXAMINATION

The Black Hawk Mines, situated in the SW$\frac{1}{4}$ of Section 5, Township 31 South, Range 33 East, MDB&M, Kern County, California, approximately 14 miles southeast of Caliente, were visited on August 4 and 5, 1951 by the writer, accompanied by Mess'rs. Harry Forman, Stuart Franklin, Henry Records and Robert Records.

Purpose of this visit was to make a geological examination of the property, to study the geological and mineralogical relationships of the ore deposits and to determine, insofar as a limited investigation would permit, whether or not the property possesses sufficient merit from a geological standpoint to warrant further development and exploitation.

Inasmuch as earlier reports on this property have already dealt with general description of terrain, accessibility of property, elevation, vegetation, water supply, ownership, general condition of the mine as regards timber, rails, mining entries and other descriptive material, this report will be confined to its geological aspects.

SUMMARY AND CONCLUSIONS

Ore deposits of the Black Hawk Mines are replacements of limestone horizons in metamorphic rocks constituting a roof-pendant in a granitic terrain. Orebodies are narrow, steeply dipping and elongated, striking in a northeasterly direction. The north deposit is exposed nearly continuously for a distance of 300 feet along the strike and gives promise of continuing another 700 feet to the Apex Shaft. The south deposit has an indicated length of 400 feet plus a possible extension of another 450 feet, joining the north deposit in the vicinity of the Apex Shaft.

Orebodies vary in width from three to 25 feet. Indicated tonnage of reserves is estimated at 82,300 tons. Of this, 65,600 tons are assigned to the north deposit and 16,700 tons to the south deposit. Inferred extensions of indicated reserves are as follows: North Deposit, 50,000 tons. South Deposit, 22500 tons. Total indicated and inferred reserves are estimated at 154,800 tons.

Samples taken show little or no gold, from zero to 4.59 oz. per ton in silver, zero to 4.45 per cent lead and 5.45 to 22.10 per cent zinc.

Mining can be started with a minimum of preparatory work and within a short time up to fifty tons of ore per day can be produced simultaneously with an effective development program.

The deposit has a great deal of merit and shows promise of a substantial and persistent supply of ore. No unusual mining problems are anticipated and it is the conclusion of the writer that if a successful metallurgical treatment of these ores can be made, in order to make a profitably salable product, a highly successful operation can be anticipated.

GENERAL GEOLOGY

Ore deposits of the Black Hawk Mines occur as elongated lenticular bodies, enclosed in schist and quartzite. The general nature of the orebodies and the presence of recrystallized limestone adjacent to and interfingered with the ore in places indicate that the deposits are replacements of limestone members of the metamorphic series which itself is a roof pendant in a predominantly granitic terrain. Whether or not the orebodies may be regarded as contact-metamorphic deposits is a matter to be determined by more detailed study.

The deposits strike in general in a northeast direction, dipping steeply to the southeast. There is an apparant junction of the north and south deposits at a point in the vicinity of the Pine Tree Shaft or the Apex Shaft a couple of hundred feet further southeast. This junction is regarded by the writer as the expression of a rising or plunging structural fold in the stratified metamorphic rocks rather than as the intersection of two fault zones.

In any event, both the north and south deposits strike toward the Apex Shaft at which point a well-defined, steeply dipping (southeast) orebody with a width of approximately six feet may be seen. Though outcrops were not traced continuously to this point from either deposit, scattered outcrops along each trend indicate the possibility of a continuity of ore from both the north and the south workings to a common point in the vicinity of the Apex Shaft.

In addition to the North and South deposits, an intermediate deposit, shown on the map as "Middle Workings", situated due south about 350 feet from No. 1 North portal and about 150 feet southeast of the projection of strike of the No. 1 deposit. Poor exposures and a caved working entry render the geologic relations here obscure. However, about 20 tons of good-looking ore has been piled on the dump here. This deposit may represent a lesser but related and similar horizon of ore.

NORTH WORKINGS (See map for location)

The ore deposit explored by the North Workings and exposed underground by them may be traced along the surface, up a rather steep ridge, for a distance of 300 feet. Its greatest exposed width is at the portal of No. 1 North tunnel where the width of ore measured across the dip is 25 feet. It narrows along the strike to the southwest to approximately three feet, 300 feet from the portal. Immediately northeast of the portal there is a two-compartment shaft, forty feet deep and bottomed in unoxidized ore. The shaft was not entered by the writer, because of its dangerous condition. It is said to have been sunk about 1942. Reports indicate the shaft was sunk in ore from top to bottom.

The North Workings are the most recently worked portion of the deposits. In June, 1951, 67 tons of ore were shipped from here to a mill in the vicinity of Mojave. Results of this mill run are not in the writer's possession, but it would be well to obtain them for study, for they probably constitute the best obtainable sample that could be taken from these workings.

It is very likely that a northeast extension of the orebody will be discovered by further work. The orebody widens to the northeast, its widest point being at the portal of the tunnel. Though the hillside slopes steeply downward in

this direction, there is a good possibility for development of a sizable tonnage of ore below the present working level in this direction.

No. 1 level development extends for 85 feet southwest along the strike. Ore is persistent to the face. At the portal the ore zone is twenty-five feet in width. Thirty feet within the tunnel, a crosscut to the northwest shows ore across an eighteen-foot width, although here lenticular masses of barren metamorphic rock reduce the actual width of ore to approximately twelve feet. Most of the recently shipped ore was taken from the area between the portal and this crosscut.

This orebody may be followed on the surface for 300 feet to the southwest. Outcrops are virtually continuous for this distance. Two trenches, approximately 100 feet long were observed where they had been dug across the strike, but they have long since filled with dirt and grass grows in them, hiding whatever exposures may have been made. Cleaning these trenches out should be a part of any realistic exploration program here. Dips remain constantly steep as the orebody is followed southwest, but the ore narrows to about three feet at the 300 fot mark.

As previously stated, the Apex Shaft lies along the projection of this strike and about 700 feet further southwest. Scattered outcrops may be seen in this distance and the possibility is good for a continuation of ore to the Apex. Thereby a total length from the No. 1 portal to the Apex of 1000 feet, would be attained.

Ore in the No. 1 workings, as exposed close to the surface is largely oxidized. However, "niggerheads" of unaltered sulfide ore are present, even close to the surface. Ore taken from the bottom of the forty-foot shaft is unoxidized. Apparently the zone of oxidation extends not more than thirty feet or so beneath the surface. Assays showing a relatively high content of zinc in the oxidized zone indicate that it has not been transported downward and has probably been altered to the carbonate ore smithsonite from the primary sphalerite.

In this deposit, replacement of the original limestone has been virtually complete. Very little recrystallized limestone is in evidence, the ore being bounded on each side by resistant quartzite and schist.

Samples S1 through S-5 were taken from the North Workings. Assay results are shown on the attached map, together with sample locations and widths cut.

SOUTH WORKINGS (See map for location)

South Workings consist of two level developments designated as No. 1 and No. 2. No. 1 is approximately 100 feet higher than No. 2 and is the level from which several cars of ore were shipped in 1948 or possibly earlier.

Ore is found in both levels. No. 2, the lower level, crosscuts the metamorphic rocks for about 125 feet before it encounters a five-foot width of ore at a point 180 feet northeast along the strike of the orebody from a point directly below the stope in No. 2 where shipping ore was mined.

The upper level, No. 1, crosscuts the formations for 60 feet before entering

ore, when it encounters unaltered sulphide ores approximately ten feet wide that dip steeply to the southeast. Here the area has been mined by raising above the level and by sinking a winze below it. At this point the tunnel has turned southwest along the strike and continues in ore for a distance of 75 feet.

Surface outcrops may be followed up the hill to the southwest from South No. 1 and though they are not continuously exposed, may be traced toward the Pine Tree Shaft and the Apex Shaft beyond it. It is approximately 700 feet southwest from the portal of No. 1 south to the Apex Shaft.

Replacement of pre-existing recrystallized limestone has not been so complete in the South Workings as in the North, and lenses of limestone may be found in the ore zone. Quartz veins and tongues of granitic igneous rock may be found in the workings that show a great variation in grain size and bear a close resemblance to pegmatitic structure. The deposit as a whole is similar to the contact metamorphic deposits found a few miles to the north.

In general, ore in this deposit is less altered and oxidized than that in the North deposit. The stoped area is characterized by coarsely crystalline sulphide ore.

OTHER WORKINGS

In addition to the North and South Workings as described heretofore, there is the area referred to under "General Geology" as the Middle Workings. There are also the Apex Shaft, the Pine Tree shaft and an open cut about 50 feet south of the Pine Tree Shaft. The Pine Tree shaft is about 40 feet deep and was sunk in ore. The cut fifty feet south of it is also in ore. The Apex, said to be the oldest working on the property, having been sunk in the 1880's, goes down on ore approximately six feet wide for a reported 80-foot depth. Here the ore strikes N 45° E and dips 83° southeast. Surface outcrops of ore were observed 200 feet southwest of this shaft, further lengthening the orebodies.

ORE RESERVES

Estimated ore reserves based upon the examination described herein follow:

Indicated reserves based on underground and surface exposures:	
North Deposit: 350' long by 15' wide by 150' deep (This 150' depth includes the 40' in the shaft)	65,600 tons
North Deposit: (Above working level only. Does not include any ore below the level)	43,740 tons
South Deposit: 400' long by 5' wide by 100' deep	16,700 tons
Total indicated reserves in North and South Workings, including ore below main level North Workings	82,300 tons
Inferred ore in addition to Indicated ore shown above:	
North Deposit - end of outcrop to Apex Shaft 600' long by 5' wide by 200' deep	50,000 tons
South Deposit - end of outcrop to Apex Shaft 450'flong by 4' wide by 150' deep	22500 tons
Total Indicated and Inferred ore in both deposits	154,800 tons

(Note: This is a conjectural figure based upon possible extensions of known

deposits and is not to be regarded in any senses as an assured tonnage. It is, however, entirely withing the realm of possibility and has been arrived at by a reasonable extension of visible reserves.)

SAMPLES

A total of seven samples were taken at the Black Hawk Mines during this investigation. These were submitted to Smith-Emery Company of Los Angeles for assaying. Results obtained are discussed in the following.

North Workings:
Samples S1, S2 and S3 were taken across the face of exposed ore at the portal of No. 1 North. The ore in this area is largely oxidized, although there are present nodules of unaltered ore.. Sample S1 was cut seven feet across the ore from the hanging wall side toward the footwall. S2 was also cut across the ore from a point ten feet from the hanging wall to a point 17 feet from it. S3 covered the area from the 17 foot mark to the 23 foot mark from the hanging wall. A calculated composite of the three samples is given below, which should be representative of the total width of ore. The individual assays should be helpful in determining variations in tenor of ore across this face.

Sample No.	Description	Gold Oz.	Gold Value	Silver Oz.	Silver Value c	Lead %	Zinc %
S1	Hanging Wall to plus seven feet	Trace	-	1.52	$1.37	3.28	8.85
S2	Plus 10 to plus 17	0.01	$0.35	4.59	$4.52	1.10	9.50
S3	Plus 17 to plus 23	Trace	-	1.26	$1.14	3.92	5.45
AVERAGE OF THREE SAMPLES		--	--	2.69	$2.34	2.77	7.93

The average given above is indicative of the values to be expected in at least the initial phases of mining at the No. 1 North Workings.

In addition to the above, Sample S4 was cut across the back of the main drift at a point 35 feet in from the portal. This sample showed only a trace of gold, no silver or lead, but was very high in zinc, assaying 22.10%. The friable, earthy nature of the portion of this sample farthest from the hanging wall, together with the high zinc content, indicates the presence here and in other localized portions of the oxidized zone of smithsonite (zinc carbonate), produced by the dissolving action of surface waters and the precipitating effect of limestone. It is an example of secondary enrichment and although it may be encountered here and there in the upper zone, will not show up in the unaltered sulphide zone.

Another sample, S5, was chipped from pieces of unaltered ore said to have been removed from the bottom of the 45 foot shaft at the portal of Nol North Tunnel. It contained a trace of gold, o.44 oz silver at $0.40, 0.40% lead and 15.80% zinc.

South Workings
Only two samples were taken from the No. 1 South Workings. One of these was cut for eight feet across the back of the left branch of the main tunnel, as

shown on map (Sample No. S6). The other was taken from the stoped area where the tunnel first encounters the ore zone (Sample S7). Results are as follows:

	Gold		Silver		Lead	Zinc
	Oz.	Value	Oz.	Value		
S6	0.01	$0.35	0.45	$0.41	4.45%	5.75%
S7	Trace	-	0.64	$0.58	2.15%	6.22%

FUTURE DEVELOPMENT AND EXPLOITATION

It appears that the most logical method of exploiting the mine workings is to attack both No. 1 North and No. 1 South Workings. Mining operations can be started in either or both of these areas with a minimum of preparatory work and ore can be taken from both of them from the start. Initial development work, to be carried on simultaneously with mining can be started easily in No. 2 South Tunnel, the lower level. The ore zone can be followed at this level in both directions along its strike, particularly to the southwest, where tonnage will be developed more rapidly and where a satisfactory haulage tunnel can be produced to handle ore mined from the level above and from the intervening area. Development program in No. 1 North workings would include driving a heading southwest along the strike ahead of mining operations and might also involve retimbering and rehabilitating the shaft, deepening it and starting a lower level development from its bottom.

CONCLUSIONS

It is concluded from this investigation that the possibility of developing a substantial tonnage of ore at the Black Hawk Mine is indeed a very good one. Orebodies are strong and persistent, giving promise of considerable length and depth. There is a good chance of discovering orebodies in other horizons of the metamorphic rocks in this immediate area. Assuming that the problems involved in concentration, smelting or other treatment of the mined ore can be overcome, the mine itself could be developed rapidly to the point where a steady production of fifty tons per day could be maintained. Production of no more than fifty tons daily is recommended at this time because of the present lack of working faces from which to mine a greater tonnage.

Respectfully Submitted,

William O. Jenkins

William O. Jenkins
Consulting Mining Geologist

Alhambra, California
August 9, 1951

Subject: DMEA-2374
Re: Exploration Loan
Black Hawk Mining Company
February 13, 1952

Mr. Harry N. Forman
Black Hawk Mining Company
2304 North Rosemead Boulevard
El Monte, California

My dear Mr. Forman:

This will acknowledge receipt of your application dated February 5, 1952 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMEA-2374 and referred to the Base Metals Division.

Kindly refer to DMEA-2374 in any future correspondence relating to your application.

Sincerely yours,

R. E. ADAMS

Robert E. Adams
Acting Administrative Officer

7862

DMEA-2374

GLENN A. SMITH
and Associates

INTERNATIONAL MERCHANTS SINCE 1921

555 SO. ALEXANDRIA AVE. - LOS ANGELES, CALIF. • TELEPHONE DUNKIRK 2-2155 -- CABLE, APEX

INDUSTRIAL MATERIALS DIVISION

February 8, 1952

AIRMAIL

Defense Minerals Production Administration
Washington 25, D. C.

Attention: Mr. John Ford

BLACK HAWK MINING COMPANY
DOCKET DMPA 2263

Dear Mr. Ford:

It has been ruled by your department that our application dated December 4, 1951, for a direct production loan, cannot qualify at present and that further exploration will be necessary.

We have been informed by our Congressman, Honorable Thomas H. Werdel, that an application for an exploration loan will be favorably considered.

We are therefore enclosing herewith the following documents in quadruplicate:

Form MF-100, with supporting engineer's report and assay map.

Form MF-103 and copy of lease.

We direct your attention to the notation following Item 9 attached to Form MF-103, which qualifies the application for either 1/3, 2/3 or the total estimate, depending upon conditions stipulated therein.

We hope that this application can be expedited in view of the length of time that has already transpired since our application of December 4 and the urgent need for the development of new sources of zinc metal, particularly in California.

Thanking you, we are

Yours very truly,

Glenn A. Smith
President

RECEIVED

S:CCJ

Honorable Thomas H. Werdel
United States Congressman

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMEA-2374
Metal or Mineral
Date Received 2-13-52
Amount $
Participation (Government %)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 11 1952

Name and address of applicant

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

or c/o GLENN A. SMITH & ASSOCIATES
555 S. Alexandria Ave., Los Angeles 5, Calif.

Date FEBRUARY 5, 1952

RECEIVED
FEB 1 03 PM '52
DEFENSE MATERIALS PROCUREMENT AGENCY

If you have already filed MF-100, give date filed February 5, 1952, type of assistance requested ~~Procurement Contract~~

DMA Docket Number (if available) ~~2263~~

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

BLACK HAWK MINING COMPANY
(Name of company)

By Harry N. Forman
(Signature of authorized official)

FEBRUARY 5, 1952
(Date)

(Title)

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—64067-2

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

TO BE ATTACHED TO AND MADE A PART OF FORM MF-103

1. (a) Southwest quarter of Section 5, Township 31 South, Range 33 East, M.D.B.M., Kern County, California, generally known as the Black Hawk Mine.

   (b) Copy of lease attached.

   (c) Same as 1. (a).

2. (a) Zinc Ore.

   (b) See report and assay map by William O. Jenkins, Mining Engineer, attached to Form MF-100.

3. (a) It is proposed to do additional core drilling, open up new tunnels, and to do such other necessary exploration and development work as may be determined necessary. The total cost is estimated at approximately $25,000.00.

(b) Work can start immediately and can be completed within ninety days.

4. See map attached to Form MF-100.

5. 1 - 50 HP Air Compressor
1 - Slusher
1 - Portable 50 HP Gasoline Engine & Generator
4 - Mine Dump Cars
500' - Mine Rail
Jackhammers, drill steel, small tools, etc.
1 - approximately 100-ton Loading Bin

6. Housing - 2 Trailers for 8 Men (Rental) 3 months @ 1200.00 per month	$ 3,600.00
7. (a) Service Truck - 3 months @ 600.00 per month	1,800.00
Diamond Drill Rigs - 3 months @ 500.00 per month	1,500.00
(b) Compressors, Jackhammbers, Hose, Teel, 3 months @ 471.00 per month	1,413.00
(b) Timber for Mine Shaft, etc.	1,500.00
(c) None	
8. Superintendent 72 days @ 25.00	1,800.00
3 - Miners 72 days @ 67.50 for 3	4,860.00
3 - Muckers & Helpers - 72 days @ 49.50	3,564.00
1 - Utility Man 72 days @ 16.50	1,188.00
9. Engineering Fee	1,000.00
Assaying & Sampling	1,000.00
Blast Power, Caps, Fuses @ $150.00 per month	450.00
Gas & Oil - 3 months @ $300.00	900.00
Camp Equipment	150.00
Bottled Gas @ $60.00 per month	180.00
Total	$24,905.00

The above estimate is based on a three months period. We are willing to proceed with exploration work for a one month period for one-third of this estimate, or for a two month period for ~~one-third~~ of this estimate, provided by so doing (a) the approval of this application will be expedited, and (b) the exploration work which can be accomplished in a shorter period will satisfy your department that a sufficient reserve of ore exists to warrant approval of our application for Procurement Contract, dated December 4, 1951, D.P.M.A. Document 2263.

4117

10. (a) $12,500.00.

(b) Yes

11. None

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA

FOR USE UNDER THE

DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMEA-2374

Date received 2-13-52

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 13 1952

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

c/o GLENN A. SMITH & ASSOCIATES
555 S. Alexandria Ave., Los Angeles 5, Calif.

Name and address of applicant

Date FEBRUARY 5, 1952

RECEIVED
FEB 12
DEFENSE PROCUREMENT AGENCY

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).
   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   ☐ Owner.
   ☒ Lessee.
   ☐ Contractor.
5. Number of years in production _____
   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:
   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
Harry N. Forman 336 N. Poinsettia Pl. Los Angeles, California	co-partner	none	$150,000	—	—	none	none
H. H. Records 9440 Priscella St. Downey, California	co-partner	none	$ 25,000	—	—	none	none
Robert Records 500 Irene St. Bakersfield, California	co-partner	none	$ 25,000	—	—	none	none
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)	zinc ore	none	none	none	70 tons
2. Quantity of product processed (specify unit of measure and type of process)	N O N E				
3. Quantity and grade of product sold or shipped (specify units of measure)	N O N E				

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

BLACK HAWK MINING COMPANY
(Name of company)

By Harry N. Forman
(Signature of authorized official)

FEBRUARY 5, 1952
(Date)

Partner
(Title)

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—63792-1

BLACK HAWK MINING COMPANY
2304 NORTH ROSEMEAD BOULEVARD
EL MONTE, CALIFORNIA

TO BE ATTACHED AND MADE PART OF FORM MF-100.

1. (a) Zinc Ore.
   (b) Lead, copper, silver, gold, antimony - secondary elements in zinc ore.
2. Black Hawk Mine, lode type.
2. (a) 182 feet of shafts.
   (b) 345 linear feet of drifts and crosscuts.
   (c) 100 linear feet of tunnels and adits.
   (d) 500 linear feet of mine openings.

   No water problem, no flooding and no pumping problem.
   See engineer's report attached as to productive capacity.

3. (a) 13½ miles east of Caliente, California.
   (b) Caliente mining district.
   (c) Township 31, section 5, range 33 east, MDE & M, Kern, County, California.
   (d) Kern County, California.

4. (a) Only the mandatory development work required by lease terms is now being done by the Black Hawk Mining Company.

5. There is no commercial production of zinc ore at present. Mine was a producer of silver some years ago. Mine will be placed on commercial production when loan for completion of a smelter to be located at Caliente has been granted.

6. H. H. Records and Robert Records have each had fifteen years of experience as mining engineers and in operation of mines and smelters. Harry N. Forman has had thirty years experience as executive and administrative head of several successful business enterprises.

7. (a) Mine was originally developed for gold and silver about twenty years ago. Subsequently, prior to 1946, the mine was operated on a small scale for zinc-lead ore, but operation was suspended because it was impossible to operate the mine profitably at prices then prevailing for zinc-lead ore after payment of high custom smelter fees, rail freight, etc. This mine can be profitably operated only if the ore is smeltered in a smelter adjacent or near to the mine, as planned by the Black Hawk Mining Co.

   (b) There is no known lead and zinc production on adjoining properties. There is gold, silver, antimony and tungsten being produced in near by mines.

   (c) See enclosed report by William O. Jenkins, Jr., Mining Engineer.

11. Based on present tunnels and diamond drill exploration, it is proposed to increase production to approximately 3,000 tons per month as a basis for the proposed construction of a smelter to be situated at Caliente for the treatment of this ore.

12. (a) Refer to the attached report and assay map prepared by William O. Jenkins, Mining Eng.

13. 11 miles of county blacktop road and 4 miles of graded gravel road from mine to nearest shipping and supply point. Roads are in good shape and can be used the year round.

14. Water is available from flowing springs on the mine property in all seasons sufficient in volume for the proposed operation. Additional water is available in unlimited quantities by drilling of wells to about 60 feet.

15. Power for air compressor, lights and motor will be furnished by gasoline powered engine and generator. Additional power is available from nearby power line of the Southern California Edison Company if required.

16. During the past year we have employed 2 to 3 miners continuously for core drilling, stoping and tunnel repair work.

17. Following is a list of equipment, all in good operating condition, now on the property.

1 - 50 HP Air Compressor
1 - Slusher
1 - Portable 50 HP Gasoline Engine & Generator
4 - Mine Dump Cars
500'- Mine Rail
Jackhammers, drill steel, small tools, etc.
1 - Approximately 100-ton Loading Bin.

BLACK HAWK MINES, KERN COUNTY, CALIFORNIA

REPORT OF GEOLOGICAL EXAMINATION

The Black Hawk Mines, situated in the SW$\frac{1}{4}$ of Section 5, Township 31 South, Range 33 East, MDB&M, Kern County, California, approximately 14 miles southeast of Caliente, were visited on August 4 and 5, 1951 by the writer, accompanied by Mess'rs. Harry Forman, Stuart Franklin, Henry Records and Robert Records.

Purpose of this visit was to make a geological examination of the property, to study the geological and mineralogical relationships of the ore deposits and to determine, insofar as a limited investigation would permit, whether or not the property possesses sufficient merit from a geological standpoint to warrant further development and exploitation.

Inasmuch as earlier reports on this property have already dealt with general description of terrain, accessibility of property, elevation, vegetation, water supply, ownership, general condition of the mine as regards timber, rails, mining entries and other descriptive material, this report will be confined to its geological aspects.

SUMMARY AND CONCLUSIONS

Ore deposits of the Black Hawk Mines are replacements of limestone horizons in metamorphic rocks constituting a roof-pendant in a granitic terrain. Orebodies are narrow, steeply dipping and elongated, striking in a northeasterly direction. The north deposit is exposed nearly continuously for a distance of 300 feet along the strike and gives promise of continuing another 700 feet to the Apex Shaft. The south deposit has an indicated length of 400 feet plus a possible extension of another 450 feet, joining the north deposit in the vicinity of the Apex Shaft.

Orebodies vary in width from three to 25 feet. Indicated tonnage of reserves is estimated at 82,300 tons. Of this, 65,600 tons are assigned to the north deposit and 16,700 tons to the south deposit. Inferred extensions of indicated reserves are as follows: North Deposit, 50,000 tons. South Deposit, 22500 tons. Total indicated and inferred reserves are estimated at 154,800 tons.

Samples taken show little or no gold, from zero to 4.59 oz. per ton in silver, zero to 4.45 per cent lead and 5.45 to 22.10 per cent zinc.

Mining can be started with a minimum of preparatory work and within a short time up to fifty tons of ore per day can be produced simultaneously with an effective development program.

The deposit has a great deal of merit and shows promise of a substantial and persistent supply of ore. No unusual mining problems are anticipated and it is the conclusion of the writer that if a successful metallurgical treatment of these ores can be made, in order to make a profitably salable product, a highly successful operation can be anticipated.

GENERAL GEOLOGY

Ore deposits of the Black Hawk Mines occur as elongated lenticular bodies, enclosed in schist and quartzite. The general nature of the orebodies and the presence of recrystallized limestone adjacent to and interfingered with the ore in places indicate that the deposits are replacements of limestone members of the metamorphic series which itself is a roof pendant in a predominantly granitic terrain. Whether or not the orebodies may be regarded as contact-metamorphic deposits is a matter to be determined by more detailed study.

The deposits strike in general in a northeast direction, dipping steeply to the southeast. There is an apparant junction of the north and south deposits at a point in the vicinity of the Pine Tree Shaft or the Apex Shaft a couple of hundred feet further southeast. This junction is regarded by the writer as the expression of a rising or plunging structural fold in the stratified metamorphic rocks rather than as the intersection of two fault zones.

In any event, both the north and south deposits strike toward the Apex Shaft at which point a well-defined, steeply dipping (southeast) orebody with a width of approximately six feet may be seen. Though outcrops were not traced continuously to this point from either deposit, scattered outcrops along each trend indicate the possibility of a continuity of ore from both the north and the south workings to a common point in the vicinity of the Apex Shaft.

In addition to the North and South deposits, an intermediate deposit, shown on the map as "Middle Workings", situated due south about 350 feet from No. 1 North portal and about 150 feet southeast of the projection of strike of the No. 1 deposit. Poor exposures and a caved working entry render the geologic relations here obscure. However, about 20 tons of good-looking ore has been piled on the dump here. This deposit may represent a lesser but related and similar horizon of ore.

NORTH WORKINGS (See map for location)

The ore deposit explored by the North Workings and exposed underground by them may be traced along the surface, up a rather steep ridge, for a distance of 300 feet. Its greatest exposed width is at the portal of No. 1 North tunnel where the width of ore measured across the dip is 25 feet. It narrows along the strike to the southwest to approximately three feet, 300 feet from the portal. Immediately northeast of the portal there is a two-compartment shaft, forty feet deep and bottomed in unoxidized ore. The shaft was not entered by the writer, because of its dangerous condition. It is said to have been sunk about 1942. Reports indicate the shaft was sunk in ore from top to bottom.

The North Workings are the most recently worked portion of the deposits. In June, 1951, 67 tons of ore were shipped from here to a mill in the vicinity of Mojave. Results of this mill run are not in the writer's possession, but it would be well to obtain them for study, for they probably constitute the best obtainable sample that could be taken from these workings.

It is very likely that a northeast extension of the orebody will be discovered by further work. The orebody widens to the northeast, its widest point being at the portal of the tunnel. Though the hillside slopes steeply downward in

this direction, there is a good possibility for development of a sizable tonnage of ore below the present working level in this direction.

No. 1 level development extends for 85 feet southwest along the strike. Ore is persistent to the face. At the portal the ore zone is twenty-five feet in width. Thirty feet within the tunnel, a crosscut to the northwest shows ore across an eighteen-foot width, although here lenticular masses of barren metamorphic rock reduce the actual width of ore to approximately twelve feet. Most of the recently shipped ore was taken from the area between the portal and this crosscut.

This orebody may be followed on the surface for 300 feet to the southwest. Outcrops are virtually continuous for this distance. Two trenches, approximately 100 feet long were observed where they had been dug across the strike, but they have long since filled with dirt and grass grows in them, hiding whatever exposures may have been made. Cleaning these trenches out should be a part of any realistic exploration program here. Dips remain constantly steep as the orebody is followed southwest, but the ore narrows to about three feet at the 300 fot mark.

As previously stated, the Apex Shaft lies along the projection of this strike and about 700 feet further southwest. Scattered outcrops may be seen in this distance and the possibility is good for a continuation of ore to the Apex. Thereby a total length from the No. 1 portal to the Apex of 1000 feet, would be attained.

Ore in the No. 1 workings, as exposed close to the surface is largely oxidized. However, "niggerheads" of unaltered sulfide ore are present, even close to the surface. Ore taken from the bottom of the forty-foot shaft is unoxidized. Apparently the zone of oxidation extends not more than thirty feet or so beneath the surface. Assays showing a relatively high content of zinc in the oxidized zone indicate that it has not been transported downward and has probably been altered to the carbonate ore smithsonite from the primary sphalerite.

In this deposit, replacement of the original limestone has been virtually complete. Very little recrystallized limestone is in evidence, the ore being bounded on each side by resistant quartzite and schist.

Samples S1 through S-5 were taken from the North Workings. Assay results are shown on the attached map, together with sample locations and widths cut.

SOUTH WORKINGS (See map for location)

South Workings consist of two level developments designated as No. 1 and No. 2. No. 1 is approximately 100 feet higher than No. 2 and is the level from which several cars of ore were shipped in 1948 or possibly earlier.

Ore is found in both levels. No. 2, the lower level, crosscuts the metamorphic rocks for about 125 feet before it encounters a five-foot width of ore at a point 180 feet northeast along the strike of the orebody from a point directly below the stope in No. 2 where shipping ore was mined.

The upper level, No. 1, crosscuts the formations for 60 feet before entering

ore, when it encounters unaltered sulphide ores approximately ten feet wide that dip steeply to the southeast. Here the area has been mined by raising above the level and by sinking a winze below it. At this point the tunnel as turned southwest along the strike and continues in ore for a distance of 75 feet.

Surface outcrops may be followed up the hill to the southwest from South No. 1 and though they are not continuously exposed, may be traced toward the Pine Tree Shaft and the Apex Shaft beyond it. It is approximately 700 feet southwest from the portal of No. 1 south to the Apex Shaft.

Replacement of pre-existing recrystallized limestone has not been so complete in the South Workings as in the North, and lenses of limestone may be found in the ore zone. Quartz veins and tongues of granitic igneous rock may be found in the workings that show a great variation in grain size and bear a close resemblance to pegmatitic structure. The deposit as a whole is similar to the contact metamorphic deposits found a few miles to the north.

In general, ore in this deposit is less altered and oxidized than that in the North deposit. The stoped area is characterized by coarsely crystalline sulphide ore.

OTHER WORKINGS

In addition to the North and South Workings as described heretofore, there is the area referred to under "General Geology" as the Middle Workings. There are also the Apex Shaft, the Pine Tree shaft and an open cut about 50 feet south of the Pine Tree Shaft. The Pine Tree shaft is about 40 feet deep and was sunk in ore. The cut fifty feet south of it is also in ore. The Apex, said to be the oldest working on the property, having been sunk in the 1880's, goes down on ore approximately six feet wide for a reported 80-foot depth. Here the ore strikes N 45° E and dips 83° southeast. Surface outcrops of ore were observed 200 feet southwest of this shaft, further lengthening the orebodies.

ORE RESERVES

Estimated ore reserves based upon the examination described herein follow:

Indicated reserves based on underground and surface exposures:	
North Deposit: 350' long by 15' wide by 150' deep (This 150' depth includes the 40' in the shaft)	65,600 tons
North Deposit: (Above working level only. Does not include any ore below the level)	43,740 tons
South Deposit: 400' long by 5' wide by 100' deep	16,700 tons
Total indicated reserves in North and South Workings, including ore below main level North Workings	82,300 tons
Inferred ore in addition to Indicated ore shown above:	
North Deposit - end of outcrop to Apex Shaft 600' long by 5' wide by 200' deep	50,000 tons
South Deposit - end of outcrop to Apex Shaft 450'flong by 4' wide by 150' deep	22500 tons
Total Indicated and Inferred ore in both deposits	154,800 tons

(Note: This is a conjectural figure based upon possible extensions of known

deposits and is not to be regarded in any senses as an assured tonnage. It is, however, entirely withing the realm of possibility and has been arrived at by a reasonable extension of visible reserves.)

SAMPLES

A total of seven samples were taken at the Black Hawk Mines during this investigation. These were submitted to Smith-Emery Company of Los Angeles for assaying. Results obtained are discussed in the following.

North Workings:
Samples S1, S2 and S3 were taken across the face of exposed ore at the portal of No. 1 North. The ore in this area is largely oxidized, although there are present nodules of unaltered ore.. Sample S1 was cut seven feet across the ore from the hanging wall side toward the footwall. S2 was also cut across the ore from a point ten feet from the hanging wall to a point 17 feet from it. S3 covered the area from the 17 foot mark to the 23 foot mark from the hanging wall. A calculated composite of the three samples is given below, which should be representative of the total width of ore. The individual assays should be helpful in determining variations in tenor of ore across this face.

Sample No.	Description	Gold Oz.	Gold Value	Silver Oz.	Silver Value c	Lead %	Zinc %
S1	Hanging Wall to plus seven feet	Trace	-	1.52	$1.37	3.28	8.85
S2	Plus 10 to plus 17	0.01	$0.35	4.59	$4.52	1.10	9.50
S3	Plus 17 to plus 23	Trace	-	1.26	$1.14	3.92	5.45
AVERAGE OF THREE SAMPLES		--	--	2.69	$2.34	2.77	7.93

The average given above is indicative of the values to be expected in at least the initial phases of mining at the No. 1 North Workings.

In addition to the above, Sample S4 was cut across the back of the main drift at a point 35 feet in from the portal. This sample showed only a trace of gold, no silver or lead, but was very high in zinc, assaying 22.10%. The friable, earthy nature of the portion of this sample farthest from the hanging wall, together with the high zinc content, indicates the presence here and in other localized portions of the oxidized zone of smithsonite (zinc carbonate), produced by the dissolving action of surface waters and the precipitating effect of limestone. It is an example of secondary enrichment and although it may be encountered here and there in the upper zone, will not show up in the unaltered sulphide zone.

Another sample, S5, was chipped from pieces of unaltered ore said to have been removed from the bottom of the 45 foot shaft at the portal of Nol North Tunnel. It contained a trace of gold, o.44 oz silver at $0.40, 0.40% lead and 15.80% zinc.

South Workings
Only two samples were taken from the No. 1 South Workings. One of these was cut for eight feet across the back of the left branch of the main tunnel, as

shown on map (Sample No. S6). The other was taken from the stoped area where the tunnel first encounters the ore zone (Sample S7). Results are as follows:

	Gold		Silver		Lead	Zinc
	Oz.	Value	Oz.	Value		
S6	0.01	$0.35	0.45	$0.41	4.45%	5.75%
S7	Trace	-	0.64	$0.58	2.15%	6.22%

FUTURE DEVELOPMENT AND EXPLOITATION

It appears that the most logical method of exploiting the mine workings is to attack both No. 1 North and No. 1 South Workings. Mining operations can be started in either or both of these areas with a minimum of preparatory work and ore can be taken from both of them from the start. Initial development work, to be carried on simultaneously with mining can be started easily in No. 2 South Tunnel, the lower level. The ore zone can be followed at this level in both directions along its strike, particularly to the southwest, where tonnage will be developed more rapidly and where a satisfactory haulage tunnel can be produced to handle ore mined from the level above and from the intervening area. Development program in No. 1 North workings would include driving a heading southwest along the strike ahead of mining operations and might also involve retimbering and rehabilitating the shaft, deepening it and starting a lower level development from its bottom.

CONCLUSIONS

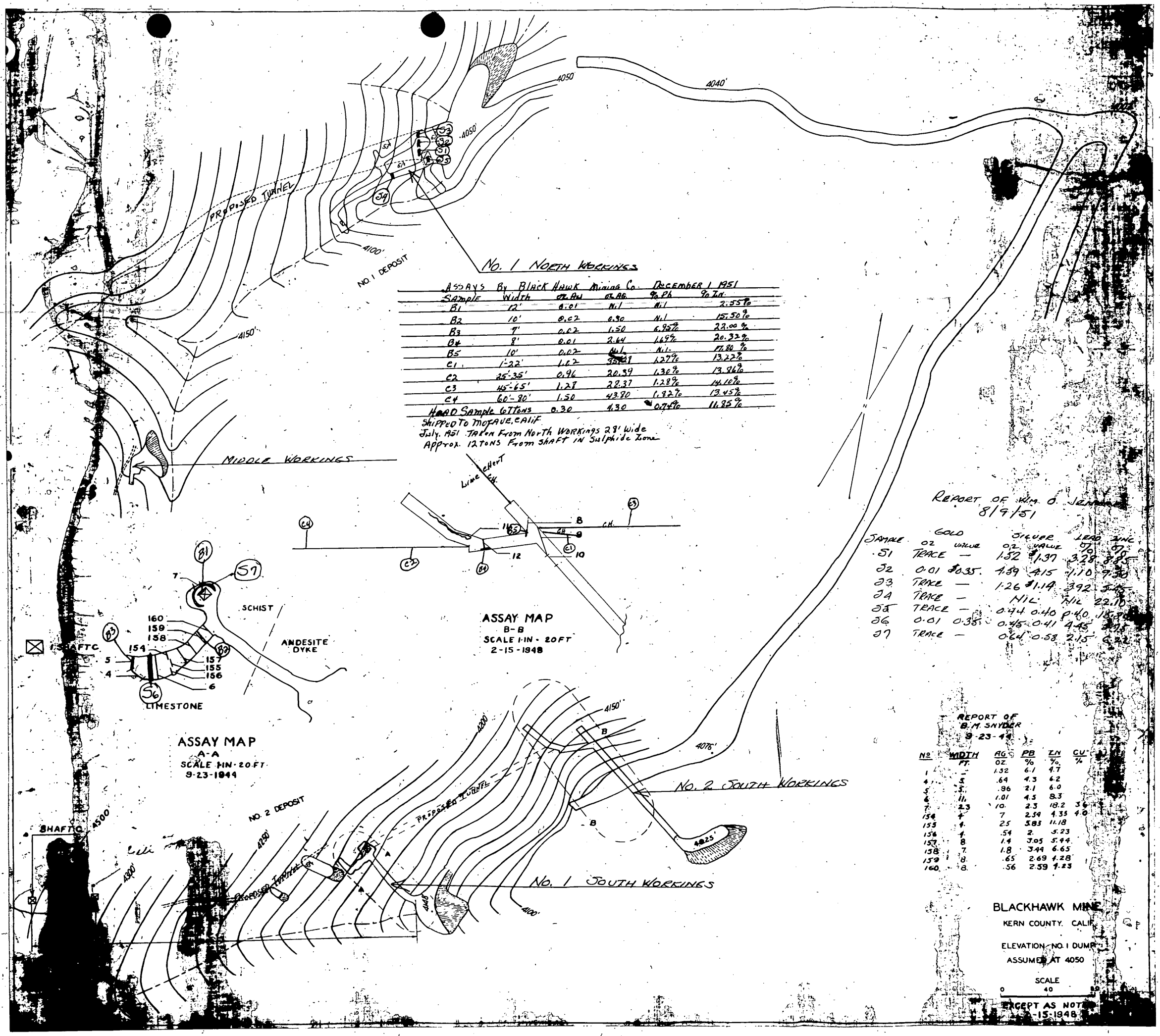
It is concluded from this investigation that the possibility of developing a substantial tonnage of ore at the Black Hawk Mine is indeed a very good one. Orebodies are strong and persistent, giving promise of considerable length and depth. There is a good chance of discovering orebodies in other horizons of the metamorphic rocks in this immediate area. Assuming that the problems involved in concentration, smelting or other treatment of the mined ore can be overcome, the mine itself could be developed rapidly to the point where a steady production of fifty tons per day could be maintained. Production of no more than fifty tons daily is recommended at this time because of the present lack of working faces from which to mine a greater tonnage.

Respectfully Submitted,

William O. Jenkins

William O. Jenkins
Consulting Mining Geologist

Alhambra, California
August 9, 1951



NO. 1 NORTH WORKINGS

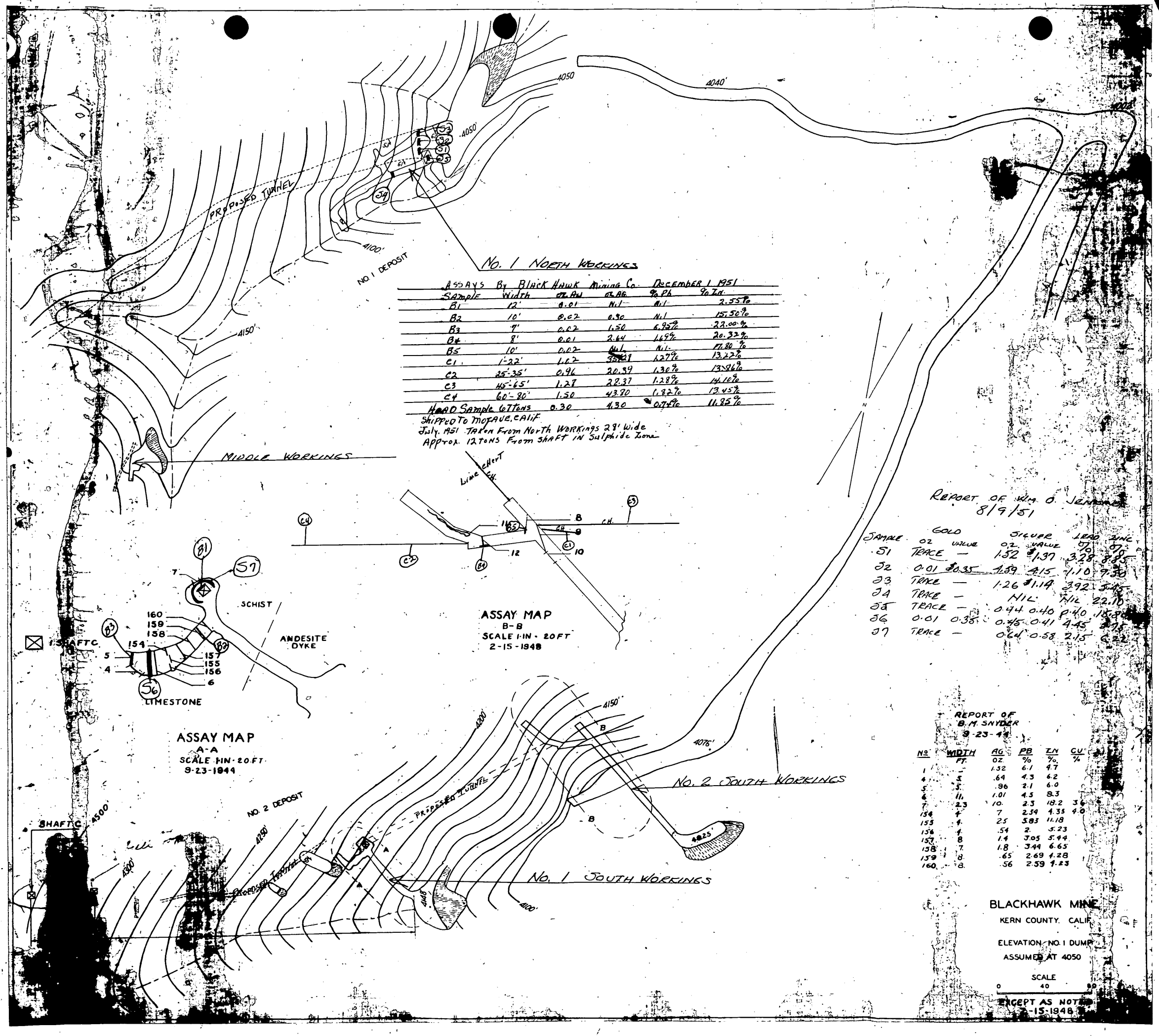
ASSAYS By BLACK HAWK Mining Co. DECEMBER 1 1951

SAMPLE	Width	OZ. AU	OZ. AG.	% Pb	% Zn.
B1	12'	0.01	Nil	Nil	2.55%
B2	10'	0.02	0.30	Nil	15.50%
B3	9'	0.02	1.50	6.95%	22.00%
B4	8'	0.01	2.64	1.69%	20.32%
B5	10'	0.02	Nil	Nil.	17.80%
C1	1'-22'	1.02	35.89	1.27%	13.22%
C2	25'-35'	0.96	20.39	1.30%	13.86%
C3	45'-65'	1.28	28.37	1.28%	14.10%
C4	60'-80'	1.50	43.80	1.82%	13.45%
HEAD Sample 6 Tons		0.30	4.30	0.74%	11.35%

Shipped To Mojave, Calif.
July. 1951 Taken From North Workings 28' Wide
Approx. 12 Tons From Shaft In Sulphide Zone

SAMPLE	GOLD OZ	VALUE	SILVER OZ.	VALUE	LEAD %	ZINC %
51	TRACE	—	1.52	$1.37	3.28	8.85
52	0.01	$0.35	4.59	4.15	1.10	9.30
53	TRACE	—	1.26	$1.14	3.92	5.45
54	TRACE	—	Nil	Nil	Nil	22.10
55	TRACE	—	0.44	0.40	8.40	18.[illegible]
56	0.01	0.35	0.45	0.41	4.45	[illegible]
57	TRACE	—	0.64	0.58	2.15	[illegible]

No	WIDTH FT.	AG OZ.	PB %	ZN %	CU %
1	—	1.32	6.1	4.7	
4	5	.64	4.3	6.2	
5	5	.96	2.1	6.0	
6	11	1.01	4.5	8.3	
7	2.3	10.	2.3	18.2	3.6
154	4	7	2.54	4.35	4.0
155	4	2.5	5.83	11.18	
156	4	.54	2.	5.23	
157	8	1.4	3.05	5.94	
158	7	1.8	3.44	6.65	
159	8	.65	2.69	4.28	
160	8	.56	2.59	4.23	



ASSAYS By BLACK HAWK Mining Co. DECEMBER 1 1951

Sample	Width	OZ AU	OZ AG	% Pb	% Zn
B1	12'	0.01	Nil	Nil	2.55%
B2	10'	0.02	0.80	Nil	15.50%
B3	7'	0.02	1.50	6.95%	22.00%
B4	8'	0.01	2.64	1.69%	20.32%
B5	10'	0.02	Nil	Nil	17.80%
C1	1'-22'	1.62	35.49	1.27%	13.27%
C2	25'-35'	0.96	20.39	1.30%	13.86%
C3	45'-65'	1.27	22.37	1.28%	14.10%
C4	60'-80'	1.50	43.80	1.82%	13.45%
HEAD Sample 6 Tons		0.30	4.30	0.74%	11.85%

Shipped To Mojave, Calif.
July. 1951 Taken From North Workings 28' Wide
Approx. 12 Tons From SHAFT IN Sulphide Zone

REPORT OF WM. O. JENNINGS
8/9/51

SAMPLE	GOLD OZ	GOLD VALUE	SILVER OZ.	SILVER VALUE	LEAD %	ZINC %
51	TRACE	—	1.52	$1.37	3.28	8.85
52	0.01	$0.35	4.59	4.15	1.10	9.30
53	TRACE	—	1.26	$1.14	3.92	5.45
54	TRACE	—	NIL		NIL	22.10
55	TRACE	—	0.44	0.40	9.40	15.80
56	0.01	0.35	0.45	0.41	4.45	3.75
57	TRACE	—	0.64	0.58	2.15	6.22

REPORT OF
B. M. SNYDER
9-23-44

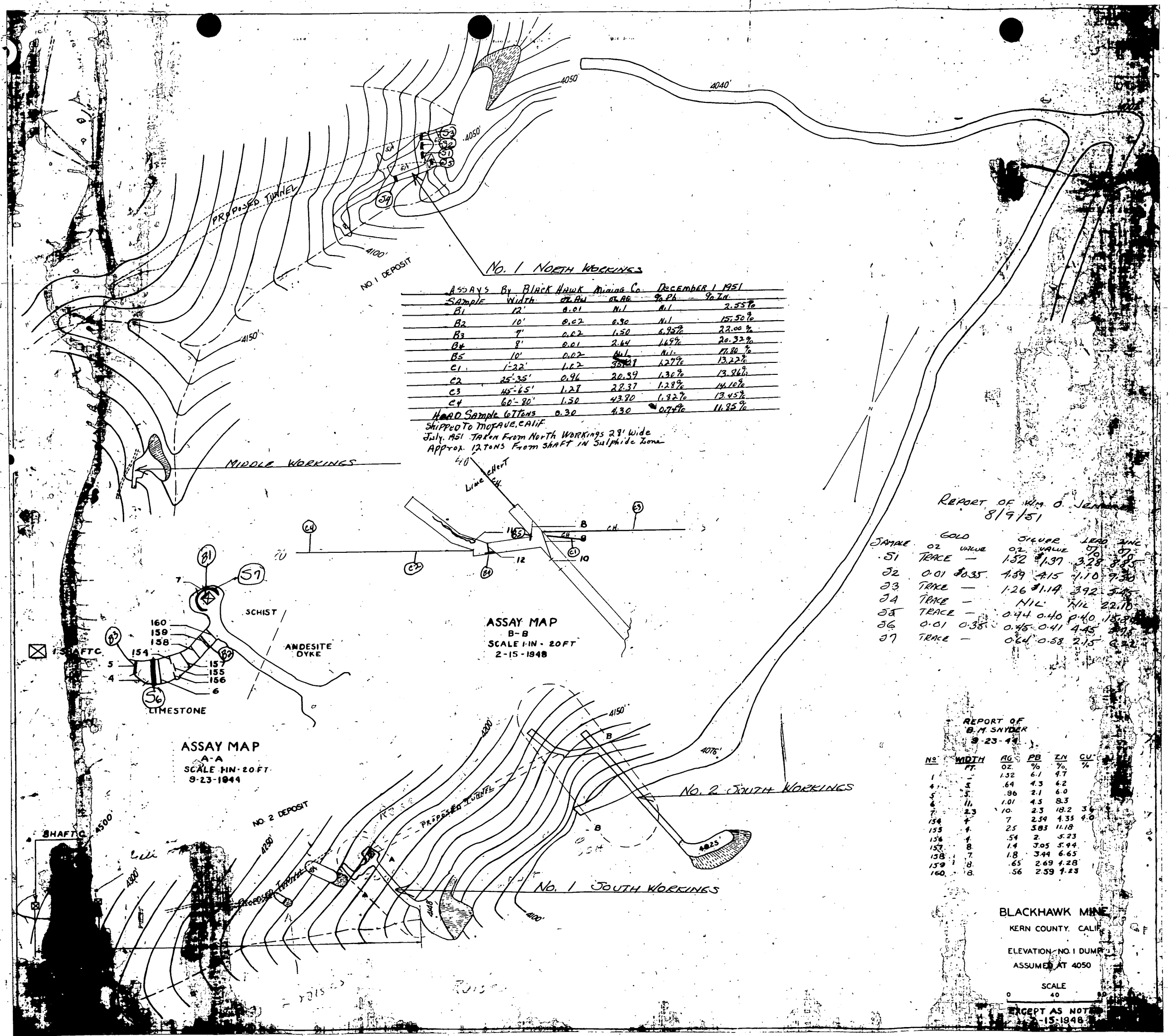
№	WIDTH FT.	AG OZ	PB %	ZN %	CU %
1	—	1.32	6.1	4.7	
4	5	.64	4.3	6.2	
5	5	.96	2.1	6.0	
6	11	1.01	4.5	8.3	
7	2.3	10.	2.3	18.2	3.6
154	4	7	2.39	4.35	4.0
155	4	2.5	3.83	11.18	
156	4	.54	2.	5.23	
157	8	1.4	3.05	5.94	
158	7	1.8	3.44	6.65	
159	8	.65	2.69	4.28	
160	8	.56	2.59	4.23	

BLACKHAWK MINE
KERN COUNTY. CALIF.

ELEVATION NO. 1 DUMP
ASSUMED AT 4050

SCALE
0 40 80

EXCEPT AS NOTED
2-15-1948



No. 1 North Workings

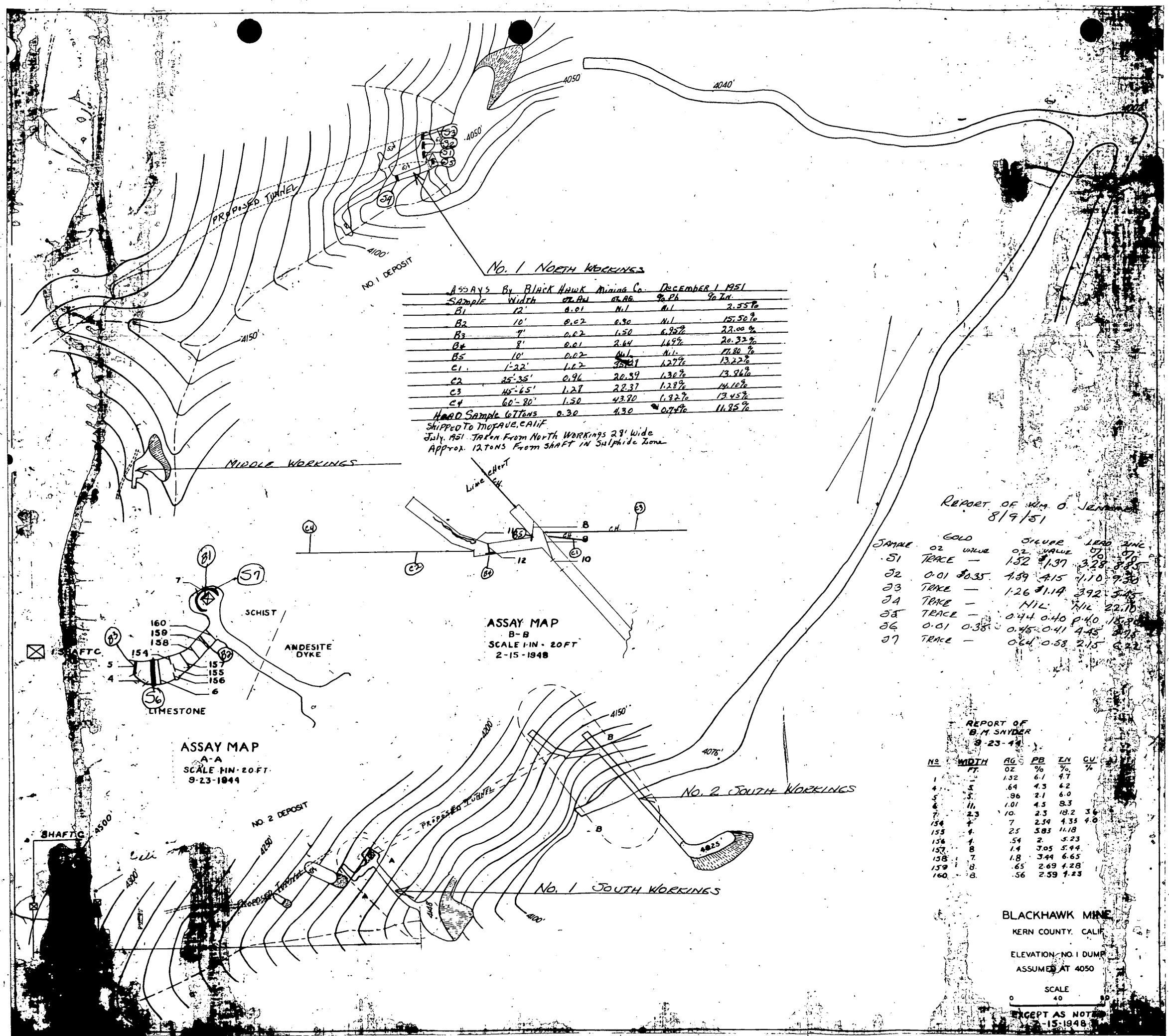
Assays By Black Hawk Mining Co. December 1 1951

Sample	Width	Oz. Au	Oz. Ag	% Pb	% Zn
B1	12'	0.01	Nil	Nil	2.55%
B2	10'	0.02	0.30	Nil	15.50%
B3	9'	0.02	1.50	6.95%	22.00%
B4	8'	0.01	2.64	1.69%	20.32%
B5	10'	0.02	Nil	Nil	17.80%
C1	1'-22'	1.02	35.29	1.27%	13.22%
C2	25'-35'	0.96	20.39	1.30%	13.86%
C3	45'-65'	1.28	28.37	1.28%	14.10%
C4	60'-80'	1.50	43.80	1.82%	13.45%
Head Sample 60 Tons		0.30	4.30	0.74%	11.35%

Shipped To Mojave, Calif.
July. 1951 Taken From North Workings 28' Wide
Approx. 12 Tons From Shaft In Sulphide Zone

Sample	Gold Oz	Gold Value	Silver Oz.	Silver Value	Lead %	Zinc %
51	Trace	—	1.52	$1.37	3.28	8.85
52	0.01	$0.35	4.59	4.15	1.10	9.30
53	Trace	—	1.26	$1.14	3.92	5.45
54	Trace	—	Nil	Nil		22.10
55	Trace	—	0.44	0.40	0.40	15.80
56	0.01	0.35	0.45	0.41	4.45	[illegible]
57	Trace	—	0.64	0.58	2.15	[illegible]

No.	Width Ft.	Ag Oz.	Pb %	Zn %	Cu %
1	–	1.32	6.1	4.7	
4	5	.64	4.3	6.2	
5	5	.96	2.1	6.0	
6	11	1.01	4.5	8.3	
7	2.3	10.	2.3	18.2	3.6
154	4	7	2.59	4.35	4.0
155	4	2.5	3.83	11.18	
156	4	.54	2.	5.23	
157	8	1.4	3.05	5.94	
158	7	1.8	3.44	6.65	
159	8	.65	2.69	4.28	
160	8	.56	2.59	4.23	



No. 1 North Workings

Assays By Black Hawk Mining Co. December 1 1951

Sample	Width	Oz. Au	Oz. Ag.	% Pb	% Zn.
B1	12'	0.01	Nil	Nil	2.55%
B2	10'	0.02	0.30	Nil	15.50%
B3	7'	0.02	1.50	6.95%	22.00%
B4	8'	0.01	2.64	1.69%	20.32%
B5	10'	0.02	Nil	Nil.	17.80%
C1.	1'-22'	1.02	35.29	1.27%	13.22%
C2	25'-35'	0.96	20.39	1.30%	13.86%
C3	45'-65'	1.28	22.37	1.28%	14.10%
C4	60'-80'	1.50	43.80	1.82%	13.45%
H.A.D Sample 6 Tons		0.30	4.30	0.74%	11.85%

Shipped to Mojave, Calif.
July. 1951 Taken from North Workings 28' Wide
Approx. 12 Tons From Shaft in Sulphide Zone

Report of Wm. O. Jenkins
8/9/51

Sample	Gold Oz	Value	Silver Oz.	Value	Lead %	Zinc %
51	Trace	—	1.52	$1.37	3.28	8.85
52	0.01	$0.35	4.89	4.15	1.10	9.30
53	Trace	—	1.26	$1.14	3.92	5.45
54	Trace	—	Nil.	Nil		22.10
55	Trace	—	0.44	0.40	8.40	18.80
56	0.01	0.35	0.45	0.41	4.45	8.75
57	Trace	—	0.64	0.58	2.15	6.22

Report of B. M. Snyder
9-23-44

No	Width Ft.	Ag Oz	Pb %	Zn %	Cu %
1	—	1.32	6.1	4.7	
4	3	.64	4.3	6.2	
5	5.	.96	2.1	6.0	
6	11.	1.01	4.5	8.3	
7	2.3	10.	2.3	18.2	3.6
154	4	7	2.34	4.35	4.0
155	4.	2.5	3.83	11.18	
156	4.	.54	2.	5.23	
157	8	1.4	3.05	5.94	
158	7.	1.8	3.44	6.65	
159	8.	.65	2.69	4.28	
160	8.	.56	2.59	4.23	

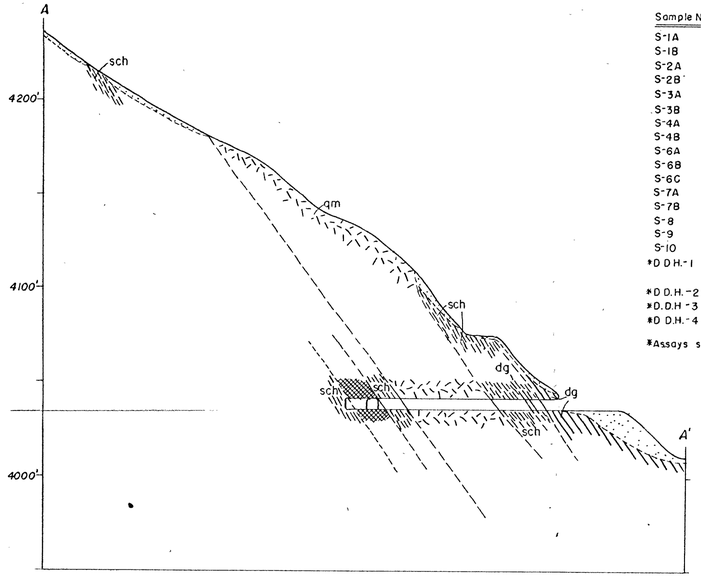
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA-2374
(ZINC)

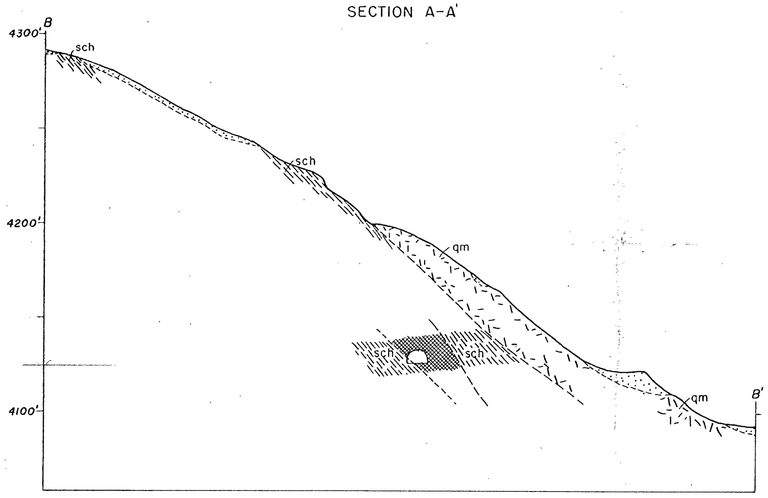
SAMPLE ASSAYS

Sample No.	Width	% Zn	% Pb	% Cu	Oz Au/T	Oz Ag/T
S-1A	8'	2.9	0.6	0.09	Trace	0.40
S-1B	9'	1.7	0.5	0.07	Trace	0.20
S-2A	7'	7.7	2.9	0.27	0.01	1.20
S-2B	7'	2.7	0.1	0.53	0.005	0.45
S-3A	7'	2.5	1.9	0.08	0.005	0.40
S-3B	8'	3.5	2.7	0.10	0.005	0.60
S-4A	4'	6.0	1.2	0.29	0.005	1.55
S-4B	4'	4.5	2.6	5.86	0.01	6.90
S-6A	6'	6.4	1.9	0.99	0.005	1.70
S-6B	6'	3.1	0.1	0.95	Trace	1.10
S-6C	5'	6.0	0.1	0.68	Trace	1.20
S-7A	4'	3.0	0.1	2.05	Trace	1.50
S-7B	6'	0.8	0.4	0.46	0.015	0.60
S-8	6'	0.5	0.2	0.22	0.10	0.15
S-9	5'	9.6	1.5	1.79	0.005	2.85
S-10	5'	11.1	0.9	4.49	0.005	5.25
*D.D.H.-1	25'-35'	13.86	1.30	—	0.96	20.39
	60'-80'	13.45	1.82	—	1.50	43.80
*D.D.H.-2	45'-65'	14.10	1.28	—	1.28	28.37
*D.D.H.-3	1'-22'	13.22	1.27	—	1.02	35.28
*D.D.H.-4	lime and chert					

*Assays submitted by the Black Hawk Mining Company



SECTION A-A'



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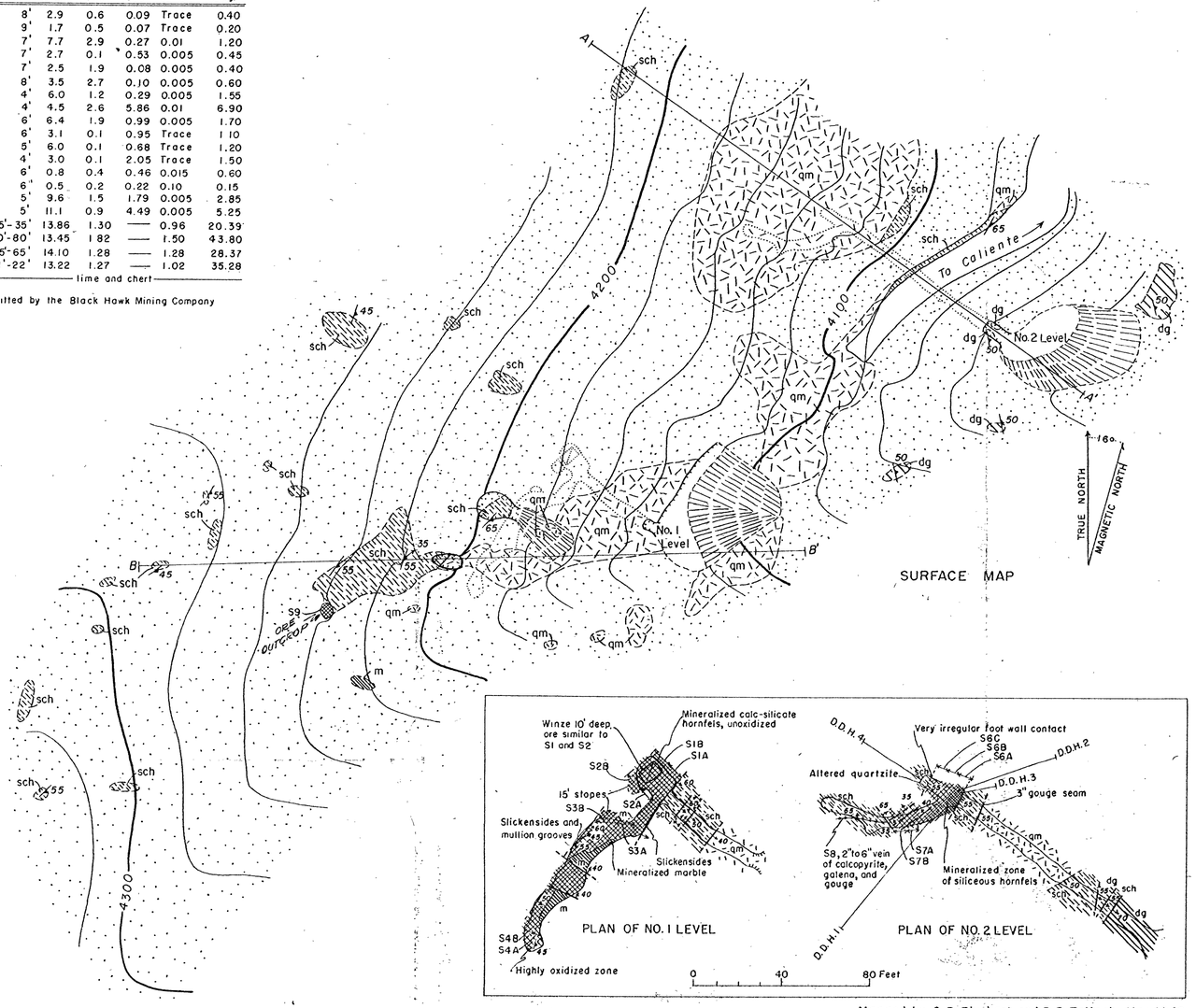

SURFACE MAP

EXPLANATION

- Soil cover
- Mineralized metamorphic rocks
- Quartz monzonite porphyry
- Schist, gneiss, quartzite, and calc-silicate hornfels
- Marble
- Diorite gneiss
- Contact, showing dip (Dashed where approximately located)
- Indefinite contact
- Fault, showing dip (Dashed where approximately located)
- Fault, showing bearing and plunge of grooves
- Fault breccia
- Strike and dip of foliation
- Strike and dip of foliation and plunge of lineation
- Projection of underground workings
- Prospect pit or open cut
- Dump
- D.D.H.2 Diamond drill hole
- S3A Sample

Mapped by C. D. Rinehart and D. B. Tatlock, May 1952

SOUTH WORKINGS OF THE BLACK HAWK ZINC MINE, KERN COUNTY, CALIFORNIA

50 0 50 100 FEET

Contour interval 20 feet
Datum approximately mean sea level