DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE — Idm-E NO. 401 — DMEA NO. 2492

Application
- [ ] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [x] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [x] Royalty Audits
- [x] Certification of Discovery
- [ ] Closing Letter
- [x] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [x] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and attachments

Right Side

- ? [x] Project summary (final)
- [x] Work Completed analysis (final)
- All other material filed in chronological order including the following reports if checked:
- [x] Field Team Semi-Annual Report for Certified Project
- [x] Final Field Team Report (Tab)
- [x] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [x] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No._____: Reports
- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with transmittal, narrative and maps.

Folders No._____: Maps (Use pocket folder or envelope)

Folders No._____: Settlement Sheets

Folders No._____: Drill Logs

Folders No._____: Royalty material

17963

OFFICE OF MINERALS EXPLORATION
COMPLIANCE ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Executive Officer, OME Field Team, Region III, Denver, Colorado pertaining to Contract Idm-8001, Docket No. IMBA 8402, dated September 8, 1952, with

Empire Mining and Engineering Company
P. O. Box 153
Boulder, Colorado

for the purpose of determining the amount of royalties due the U. S. Government on the sales of Fluorspar, from property referred to as Orion and Sadie No. 6 placers, located in Boulder County, Colorado, during the period September 8, 1952 to June 11, 1959.

A Certification of Discovery or Development was issued on April 15, 1953, and accordingly royalty is payable on all production from the land described in Article 2 of the contract for a maximum period of 10 years from the date of the contract. A Report of Review in lieu of final cost audit dated March 4, 1953, indicated accepted costs under the exploration contract amounting to $5,425.00, with the Government's contribution on a 50 percent basis being $2,712.50.

No royalty has been paid to the Government to date in connection with this contract.

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(a) According to the Field Team's Annual Report of certified project for the period January 1, 1955 to December 31, 1955, operations ceased about December 31, 1952; no ore has been shipped since September 8, 1952, (the date of the exploration contract). Subsequent reports of Field Team for the period January 1, 1956 to December 31, 1957 indicate the property inactive and there is no indication of operations or ore shipments during the year 1958, or anticipated change in the property's status during 1959.

(b) The administrative costs to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible royalty which might be disclosed.

June 11, 1959

JUN 15 1959
O.M.E.

Donald T. Finch
Donald T. Finch
OME Auditor

FILE COPY
SURNAME:

Hoch
Boehm
Hoffman
Chamberlin

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

CERTIFICATION BY THE UNITED STATES OF AMERICA
OF A DISCOVERY OR DEVELOPMENT UNDER
AN EXPLORATION PROJECT CONTRACT

To: Empire Mining & Engineering Company
P. O. Box 963
Boulder, Colorado

Pursuant to the provisions of Exploration Project Contract No. [illegible], dated September 8, 1952, (Docket No. [illegible]), hereinafter called the "contract", between you and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien thereon and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made, has resulted from the exploration work.

The nature of said discovery or development is described briefly or indicated as follows:

Three 24 holes drilled under the contract have partially explored three fluorspar veins on the Orion No. 16111 and Mobile #6 Claims in Boulder County, Colorado, and have furnished sufficient data to estimate inferred reserves of fluorspar.

Dated: APR 13 1953

THE UNITED STATES OF AMERICA

By C. D. Mitteudorf
Administrator, Defense Minerals
Exploration Administration

Letter'gad 4/3/53
Copy to: Mr. Russell Forbes, DMEA
Operating Committee
Admr. R. File
Mr. Hodges, 4604
Field Team, Region IV
Mr. Thayer, 5216 Gen. Bldg.
Mr. Chambers
Mr. Markland
Mr. Johnson
Docket File
Mr. Houk

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF REVIEW

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 0 1953

I have reviewed the Monthly Reports of:

Empire Mining Co.
P.O. Box 763
Boulder, Colorado

pertaining to Exploration Project Contract No.IDM-E401, Docket No. 2492, covering a project for exploration of Fluorspar, for the months of October 1952 to December 1952.

My review included an examination of the Monthly Reports (Form MF-1[illegible]) and supporting documents attached thereto, comparison of [illegible]ts claimed with the contract and pertinent schedules, consultation with the Executive Officer of the Field Team in charge of the project, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reason:

The contract provides for payment by the Government on the basis of agreed estimated costs of work actually performed.

The review disclosed the following facts in regard to the amount paid or to be paid the contractor:

Total cost as billed by Contractor		$5425.00
Exceptions:		
By DMEA Finance Officer	None	
Herewith	None	None
Total Accepted Cost		$5425.00

The contract calls for a 50 per cent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Two thousand seven hundred twelve Dollars and 50/100

-$2,712.50-

is considered valid and proper.

Date: March 4, 1953

T. H. Brading, Auditor

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

224 New Customhouse
Denver 2, Colorado

September 15, 1952

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, Field Team, Region IV

Subject: Contract Docket DMEA 2492, Empire Mining & Engineering Company (Fluorspar)

Enclosed are six copies of a contract between the Government and the Empire Mining & Engineering Company. All copies have been properly executed by the applicant and signed by the Executive Officer, DMEA Field Team, Region IV.

Please assign a contract number and return the required number of copies of the contract to this office.

W. H. King

W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
Denver
SEP 16 1952

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 9-26-52

REFERRED TO:

1. ~~Mr. Houk Rm. 4639~~ LH
2. ~~Mr. Hofflund Rm. 4627~~
3. ~~Mr. Houk Rm. 4639~~
4. Miss Andrews ~~Rm. 4621~~
5. Miss Curtain Rm. 4539

OK calls PH

FOR:

..... Action	..... Recommendation
..... Approval	..... Record
..... Comment	..... of .....
..... Conference	..... Referring
..... Consideration	.....
..... Filing	..... Reply for signature of .....
..... Instructions	
..... Investigation	..... Rewriting
..... Initials	..... Signature
..... Mailing	..... Suggestions
..... Previous correspondence	..... Your information

RECEIVED SEP 30 1952 GENERAL COUNSEL DEFENSE MINERALS ADMINISTRATION

REMARKS: NOTE: when attached has been approved by Legal Division, please prepare letter to the Field for the Op. Committee's signature returning Operator, Field and Finance copies. Return other copies to me for distribution. Phyllis

Check (X) before the items needing attention.

Frank E. Johnson
Initials of sender

Note: These copies returned to Reg IV

GPO 16—63815-1

Hum Op Com 10/1/52 (8a)

Docket Copy

MF-200 (A)
(February 1952)

DOCKET NO., DMEA 2482

COMMODITY Fluorspar

Idm-E401

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]

(Short Form)

IT IS AGREED this 8th day of September, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Empire Mining & Engineering Company - A Colorado Corporation, P.O. Box 763, Boulder, Colorado

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Colorado, County of Boulder, described as follows:[3] The Orion Claim U. S. Survey No. 16111 and the Saddle No. 6, an unpatented lode claim recorded in Book 72[illegible], Page 562, in the Boulder County Clerk & Recorder's Office, Boulder County Court House, Boulder, Colorado

the Operator represents and undertakes:[4] of the Saddle No. 6

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:

None
of the Orion Claim No. 16111

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within Sixty (60) days from the date of this contract shall commence work on a project of exploration for[5] Fluorspar

in or upon the described land; and shall bring the project to completion within a period of four (4) months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay fifty (50) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $712.50, which is 50 percent of $1,425.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided*, that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

Empire Mining ~~& Engineering~~ Co.
(Operator)

By C. E. Zahn Jr.

By W. H. King

Executive Officer, DMEA
Field Team, Region IV

I, Fancheon M. Zahn, certify that I am the duly authorized secretary of the corporation named as Operator herein; that C. E. Zahn, Jr., who signed this contract on behalf of the Operator, was then duly authorized President of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Fancheon M. Zahn [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

MF-203

OWNER'S CONSENT TO LIEN

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

[illegible] Mining Claim [illegible] Survey No. 10111

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ [illegible] Mining & Milling Company

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 2712.50, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 20 day of August, 1952.

Henry R. Evans [Seal]

[Seal]

[Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

EXHIBIT A

Description of the Work

Three diamond drill holes are to be drilled as indicated on the attached map and with the following specifications:

Hole No.	Approx. Bearing	Approx. Objective depth vertically below the surface	Length of hole	Approx. Dip of hole
1	S.65° W.	200 feet	240 feet	-45°
2	N.80° W.	200 feet	240 feet	-45°
3	S.70° W.	180 feet	220 feet	-45°

Total - 700 feet

All drilling is to be done with NX- or BX- size bits with the object of obtaining cores not smaller than BX size.

All drill cores must be stored properly in acceptable core boxes. Cores must be split and one-half retained for the use of the DMEA.

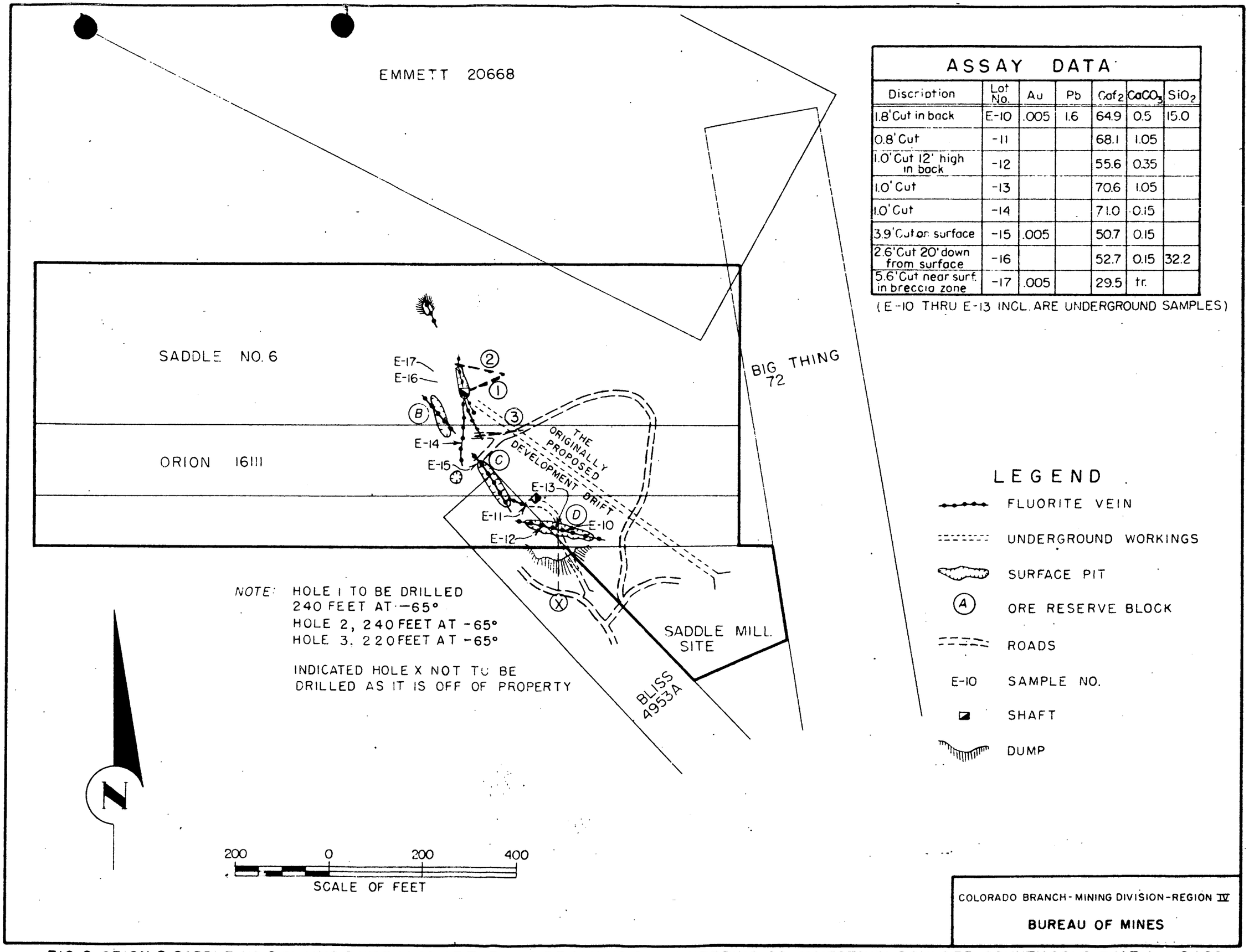
The location of the proposed work is shown on the attached map.

Estimate of Costs

700 feet of diamond core drilling including sampling, hauling water and all other expenses at $7.75 per foot.

Total cost of project - $5,425.00

Government's participation at 50% - $2,712.50



ASSAY DATA

Discription	Lot No.	Au	Pb	CaF_2	$CaCO_3$	SiO_2
1.8' Cut in back	E-10	.005	1.6	64.9	0.5	15.0
0.8' Cut	-11			68.1	1.05	
1.0' Cut 12' high in back	-12			55.6	0.35	
1.0' Cut	-13			70.6	1.05	
1.0' Cut	-14			71.0	0.15	
3.9' Cut on surface	-15	.005		50.7	0.15	
2.6' Cut 20' down from surface	-16			52.7	0.15	32.2
5.6' Cut near surf. in breccia zone	-17	.005		29.5	tr.	

(E-10 THRU E-13 INCL. ARE UNDERGROUND SAMPLES)

FIG. 2-ORION & SADDLE NO. 6 CLAIMS & WORKINGS OF THE EMPIRE MINING & ENGINEERING CO., JAMESTOWN, BOULDER COUNTY, COLO. D.M.E.A.- 2492

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

224 New Customhouse
Denver 2, Colorado

September 15, 1952

REGISTERED

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, Field Team, Region IV

Subject: Contract Docket DMEA 2492, Empire Mining & Engineering Company (Fluorspar)

Enclosed are six copies of a contract between the Government and the Empire Mining & Engineering Company. All copies have been properly executed by the applicant and signed by the Executive Officer, DMEA Field Team, Region IV.

Please assign a contract number and return the required number of copies of the contract to this office.

W. H. King
W. H. King

Enclosures

RECEIVED
SEP 30
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DENVER
SEP 18 1952

DMEA-2492

1000 Fidelity Bldg.
Cleveland 14, Ohio
April 11, 1952

Mr. John H. East, Jr.
Regional Director, Bureau of Mines,
274 New Customhouse,
Denver 2, Colorado.

Dear Mr. East:

Enclosed you will find four copies of Form MF 103 in which we apply for an exploration loan to be used in driving a crosscut tunnel on our Saddle Lode No. 6 , with which I believe, you are familiar. A map showing the exact location is attached.

Our Mr. Zahn, while in your office, described in detail the proposed tunnel, and it is my understanding that you approved of this move. Sometime ago, I visited your friend, F.C. Bowman, who made a complete survey on this property back in 1943. It is his belief that by progressing as outlined, we should strike Spar in not over 400 feet, with indications pointing to the strong possibility of striking a Glory Hole. Mr. Bowman also points out that, in this area, veins varying in width from 20 to 50 feet are common.

Since Mr. Bowman's inspection, a shaft some 20 feet in depth has been sunk on a vein that surfaced at about 18" square. At the 20 ft. depth, this vein now has widened to a five foot vein of solid spar. Samples taken from the floor of this shaft and assayed by Mr. V. L. Mattson of the Colorado School of Mines (Feb. 9, 1951) showed an assay of 0.02 oz. of Gold per ton of ore, 1 oz. of Silver per ton of ore and the following percentages of Lead - 0.8%, Iron 0.82% and 86.96% CaF_2.

As Mr. Zahn told you, we have contracted for this crosscut tunnel with Eugene D. Bishopp of Boulder. We have checked Mr. Bishopp's record closely and find that he is well qualified to perform this work, has ample equipment and manpower to do a creditable job, and is financially stable. A copy of the contract we have signed with Mr. Bishopp, is attached to Form MF 103. (As a side light, I might add that Mr. Bishopp likes the prospect of this exploration so much that he asked to purchase stock in our company).

map in folder #2

1000 Fidelity Bldg.
Cleveland 14, Ohio
April 11, 1952

Mr. John H. East, Jr.
Regional Director, Bureau of Mines,
Denver 2, Colorado

I have been in contact with officials of both Ozark-Mahoning and General Chemical Co., and found that both are interested in taking our output of crude ore at a favorable price.

It is our sincere hope that you will find this application in order for we, as well as Bishopp, are anxious to get underway now that the weather has become favorable. If there is any additional information or data needed, I would appreciate your calling me collect at the 'phone number shown below.

Yours very truly,

EMPIRE MINING and ENGINEERING CO., INC.

Warren H. Edwards,
Vice President.

WHE:HEK

1000 Fidelity Bldg.
Cleveland 14, Ohio
PHONE: MAin 1-8600

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-2492
Metal or Mineral
Date Received 4-21-52
Amount $
Participation (Government %)

Name and address of applicant

Empire Mining & Engineering Company
P. O. Box 763
Boulder, Colorado

Date April 11, 1952

If you have already filed MF-100, give date filed May 21, 1951, type of assistance requested Loan,

DMA Docket Number (if available) 1209

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. See attached.

   (*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. Inapplicable.

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

   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? Fluorspar

   (*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.
   See attached.

16—64067-2

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.

Empire Mining & Engineering Company By Warren H. Edwards
(Name of company) (Signature of authorized official)
Warren H. Edwards

April 12, 1952 Vice President
(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

1. (a) The real property involved in the project is described as follows: The Saddle Lode Number Six located in the central Mining District of Boulder County, Colorado, in the North part of Section 24, Township 2, North Range 72 West - about one mile northwest of Jamestown and just south of the Emmett Mine. The exact location is shown on Exhibit "G" of our MF 100 - DMA 1209. The Location Certificate is recorded in the office of the County Clerk and Recorder of Boulder County, Boulder, Colorado, in Book 722, at page 352.

(c) Included in the answer to 1 (a).

2. (b) A complete report of Saddle Lode No. 6 is filed with our DMA 1209. It includes a complete report done in 1943 by Frank C. Bowman, with other maps showing clearly the various veins of Fluorspar on this particular property.

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, - Colorado

3. (a) The proposed work consists of driving a cross-cut tunnel northwesterly from a point one hundred fifty feet (150') from the corner Number 1 on south line of Saddle Six. Indications are that this cross-cut tunnel will strike the vein at approximately four hundred feet (400') which will allow two hundred feet (200') drifting on the vein.

The total cost of the project should not exceed Twenty-Five Thousand Dollars ($25,000.00). This includes Eighteen Thousand Dollars ($18,000.00) to cover the enclosed proposed contract with Bishopp, plus the additional cost of dozing out a road to top of Adit Portal and dozing out the entrance in order that tunnel can be started. Also included is an allowance for one hundred feet of timbering at a cost of Twenty Dollars ($20.00) per foot. A map showing location of this cross-cut tunnel was added to DMA 1209 after field examination had been made.

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, - Colorado

3. (b) The project can be started and completed in a period of one hundred twenty days (120) after signing of contract.

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, - Colorado

4. A complete set of maps showing the location of the ore was filed with our MF 100 - DMA 1209.

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, - Colorado

5. There are no existing facilities, buildings, installations or fixtures.

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, - Colorado

6. No facilities, buildings or fixtures will be purchased, installed or erected by the applicant. All mining is to be done through independent contractors.

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, - Colorado

7. All of the operating equipment is to be furnished by Eugene D. Bishopp, the independent contractor, as outlined in the attached contract.

8. All labor is to be furnished by the independent contractor as outlined in the attached contract.

9. See the attached contract with Eugene D. Bishopp.

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, - Colorado

10. (a) $15,000

(b) Yes.

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, - Colorado

11. None.

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, - Colorado

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

OFFICIAL BUSINESS

Mittelhauser

Room 4451

~~Lawrence~~ G. Houk
~~Room~~ 4451

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

April 14, 1953

Memorandum

Project Summary

Docket No. DMEA-2492 - Fluorspar
Empire Mining & Engineering Company
Orion #16111 and Saddle #6 Claims
Boulder County, Colorado
Contract No. Idm-E401

To: Administrator

From: Nonmetallic Minerals Division

Subject: Resume and concurrence on Certification of Discovery

4/11/52 Application received Region IV delegation proposing 400' crosscut and 200' drifting and 200' of timbering. Total less than $25,000 (indefinite).

6/2/52 Field Team recommends aid of $5,500.

9/8/52 Short Form contract executed for $5,425.00, total 50% Government participation, $2,712.50 Government share. Drill 3 - BX diamond drill holes at $7.75 per foot including all costs. Owner's Consent to Lien from Henry R. Evans, dated August 20, 1952.

Drilling started October 25, 1952.
Drilling completed December 30, 1952.

Work was completed satisfactorily. The Operator drilled hole #4 (240') and an excess of 30 feet in holes 1 and 3 at his own expense.

The final field team report resulted in an estimated 13,400 tons of measured, indicated and inferred ore (54.9% CaF_2 - 0.7% $CaCO_3$ - 23.0% SiO_2 - 8.2% Fe - 17.2% Al_2O_3 - 2.5% S.)

The fluorspar deposits on Orion and Saddle #6 claims are short narrow steep dipping veins and mineralized breccia zones in sheared and jointed altered granodiorite. Primary mineralization is fluorite (20 - 80%) and quartz with minor sulphide generally less than 1% (Fe - Pb - Zn - Cu).

About 300 feet north of these claims fluorspar is being mined to depth of 1,200 feet at Emmet Mine. Similar ore is being beneficiated successfully in the district.

Measured Reserves	73	tons ore projected 5' from sampled face
Indicated Ore	4400	tons ore from d.d.h's. to surface
Inferred ore	8900	tons ore single drill hole - ore projected 50% below d.d.h. penetration

The reserves are ore in place and do not include dilution, pillars, metallurgical losses.
13,400 tons @ $40.00 metallurgical grade @ 80% overall recovery equals - $228,800.00.

The Nonmetallic Minerals Division concurs in certifying this project as a discovery of medium significance. The work performed has added to known reserves and will be of material benefit to the Operator in planning development work and should, therefore, be certified. The possibilities of economic operation under present fluorspar prices $40.00 per ton are remote.

4/10/53 Mr. Warren H. Edwards, Vice President, Empire Mining & Engineering Company, telephoned Mr. Mittendorf from Cleveland, Ohio, requesting a report of the work completed, and information on where he would apply for additional Government aid. Mr. Mittendorf stated that the Field Team Report's contents were for the use of the Government and that his application for additional assistance should be directed to DMPA.

2492

#1-INSTRUCTIONS TO DELIVERING EMPLOYEE

☐ Deliver *ONLY* to addressee ☐ Show address where delivered

(Additional charges required for these services)

RETURN RECEIPT

Received the numbered article described on other side.

SIGNATURE OR NAME OF ADDRESSEE *(must always be filled in)*

Empire Mining & Eng. Co

SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

Mrs. Chas. E. Zahn Jr.

DATE DELIVERED	ADDRESS WHERE DELIVERED *(only if requested in item # 1)*
10-2-62	

CSS—16—71548-4 GPO

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 8 1962

5 Oct. 1962

W. R. Griswold, Chief
Division of Minerals
United States Department of the Interior
Office of Minerals Exploration
Washington 25, D.C.

10/9 800
120
100
10/9 110
500
10/10 500
10-12 220

Re: DMEA - 2492 (Fluorspar)
Contract Idm - E 401

Dear Sir:

Referring to your letter 11 Sept. 1962 subject reference above the information forms requested are attached hereto.

At the time of the last fluorspar subsidy program I personally made a trip to Washington contacting the GSA for a possible allotment and was assured by the GSA representative that the subsidy was for the benefit of the small producer however this did not turnout to be the case and I was unable to put the properties in production due to the unavailibilty of a market.

You are no doubt aware of the market situation concerning domestic producers. However I wish to assure you, although the Government does release the referenced lien against these properties, that I shall consider the contract as a personal responibility and at any time in the future these propertities can be put into production the Government will be reimbursed for their very kind help during the exploratory work.

Exploration letter sent Sept. 27, 1962

The Bureau of Mines was quite cooperative during the peroid of the contract and I wish to express my appreciation for their assistance during this effort.

Sincerely yours,

C. E. Zahn, Jr.
P.O.Box 763
Boulder, Colo.

Copy letter and MME Form 63 to R-III

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

September 11, 1962

Re: DMEA-2492 (Fluorspar)
Empire Mining &
Engineering Company
Orion & Saddle Claims
Boulder County, Colo.
Contract Idm-E401

Empire Mining and Engineering Company
P. O. Box 763
Boulder, Colorado

Gentlemen:

After the completion of the approved exploration work under the contract identified above, we asked to be informed about changes in the status of the property and production from it during the period of royalty obligation.

To assist you to furnish this information and to assure the accuracy of our records, please answer the questions on the back of this letter and return two copies to this office with copies of any pertinent documents.

We wrote you previously on July 27 but we have had nothing from you. We would like to hear from you so that we may release the Government lien against any production from the property; it actually would be for your own benefit.

Sincerely yours,

W. R. Griswold

W. R. Griswold, Chief
Division of Minerals

MME Form 63
Revised 3-62

DMEA-2492
Idm-E401

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

1. Since **March 1, 1960**, has there been a change in ownership, lease, or sublease? If yes, please state details of the transaction below and provide a true or signed copy of the pertinent documents, unless they have been provided before. Yes [X] No [ ]

   The Empire Mining & Engineering Company, a family holding company, has been dissolved and the properties returned to C. E. Zahn, Jr. the origional owner. Transfer of the properties is of record in the recorder's office, Boulder County, Boulder, Colorado.

2. Since **March 1, 1960**, has there been any production from the land subject to the contract? Yes [ ] No [X]

   A. If so and it was shipped, give quantity, value, and name and address of purchaser.

	Quantity	Value

   B. If stockpiled awaiting sale, state quantity, grade, and location.

Type	Quantity		Estimated Grade	Location
Ore	none	Tons		
Concentrates	none	Tons		
Other	none	Tons		

3. Since **to date**, has any production been transported through workings (see of contract)? Yes [ ] No [X]

   A. If so, state quantity, value, and disposition of material.

Disposition of Material	Quantity	Value

Submitted by:

Name C. E. Zahn, Jr. Title Owner

Address P.O.Box 763, Boulder, Colo. Date 5 Oct. 1962

4511

#1-INSTRUCTIONS TO DELIVERING EMPLOYEE

☐ Deliver *ONLY* to addressee

☐ Show address where delivered

(Additional charges required for these services)

RETURN RECEIPT

Received the numbered article described on other side.

SIGNATURE OR NAME OF ADDRESSEE *(must always be filled in)*

Robert C Burt

SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

DATE DELIVERED	ADDRESS WHERE DELIVERED *(only if requested in item #1)*
10-6-62	

C55—16—71548-4 GPO

POST OFFICE DEPARTMENT
OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

BOULDER
OCT 6
1 30PM
1962
COLO.

POSTMARK OF DELIVERING OFFICE

INSTRUCTIONS: Fill in items below and complete #1 on other side, when applicable. Moisten gummed ends and attach to back of article. Print on front of article RETURN RECEIPT REQUESTED.

RETURN TO

REGISTERED NO.	NAME OF SENDER
598414	MINERALS EXPLORATION
CERTIFIED NO.	STREET AND NO. OR P. O. BOX
	18th C st N.W.(DEPT OF INTR
INSURED NO.	CITY, ZONE AND STATE
	WASH 25,d.c.

POD Form 3811 Jan. 1958

C55—16—71548-4

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
9/27	Holt	500
	Dissell	500
9/27	On leave	800
"	On leave	120
		110
9/27	On leave	100
		220

REGISTERED MAIL
RETURN RECEIPT REQUESTED

SEP 27 1962

Empire Mining and Engineering Company
P. O. Box 763
Boulder, Colorado

Re: DMEA-2492 (Fluorspar)
Empire Mining and Engineering Company
Orion and Saddle Claims
Boulder County, Colorado
Contract Idm-E401

Gentlemen:

By the terms of the subject Exploration Project Contract and the certification of discovery or development dated April 13, 1953, all minerals mined or produced from September 8, 1952, to September 8, 1962, were subject to the Government's percentage royalty as set forth in the said contract.

As the period during which production was subject to royalty has now expired, the Government according to its present records retains no claim or lien against the property subject to the contract or any future production therefrom. We, therefore, are closing our books and records on this contract. Your attention, however, is called to the provisions of the contract which require the Operator to keep and preserve certain records for the periods indicated.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Director

(SPH)

SPHolt/gla
9-27-62
cc to: Director's Reading File
Region III (2)
Docket
Contract Division
Code 500

43683

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

Building 20 - Federal Center
Denver 25, Colorado

OFFICIAL FILE COPY
O. M. E
RECEIVED SEP 24 1962

DATE	INITIALS	CODE
9/24	[illegible]	800
"	[illegible]	500
"	~~Holt~~ S.T.H	500
		220

September 21, 1962

Memorandum

To: W. R. Griswold, Acting Chief
Division of Field Operations, OME
Washington 25, D. C.

From: Acting Field Officer, OME, Region III

Subject: DMEA-2492 (Fluorspar)
Contract No. Idm-E401
Empire Mining & Engineering Company
(Orion & Saddle No. 6 Claims)
Boulder County, Colorado

I made an inspection of the subject claims on September 20, 1962 and found no signs of recent mining activity. I talked to Mr. Sheriff, Superintendent of the Burlington Mine, which is about a mile from the subject property, and is being operated by the Allied Chemical Company and is the only fluorspar mine now operating in that mining district. He stated that there has been no activity on the subject claims for years.

I also talked to Mr. Harvey Craig in Boulder. He knows all of the operators in the area. He stated that no work has been done on the claims since the expiration of the DMEA work. He also stated that Mr. Zahn's son, who had charge of the property after his father's death, was killed in an automobile accident. Mr. Craig has no knowledge of anyone connected with the Empire Mining and Engineering Company.

I believe that there has been no production from this property during the time of Government subordination and I recommend that the files be closed on this contract.

Hugh M. Connors
Hugh M. Connors

Royalty period expired Sept. 8, 1962

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

September 11, 1962

Re: DMEA-2492 (Fluorspar)
Empire Mining &
Engineering Company
Orion & Saddle Claims
Boulder County, Colo.
Contract Idm-2401

Empire Mining and Engineering Company
P. O. Box 765
Boulder, Colorado

Gentlemen:

After the completion of the approved exploration work under the contract identified above, we asked to be informed about changes in the status of the property and production from it during the period of royalty obligation.

To assist you to furnish this information and to assure the accuracy of our records, please answer the questions on the back of this letter and return two copies to this office with copies of any pertinent documents.

We wrote you previously on July 27 but we have had nothing from you. We would like to hear from you so that we may release the Government lien against any production from the property; it actually would be for your own benefit.

Sincerely yours,

W. R. Griswold

W. R. Griswold, Chief
Division of Minerals

MME Form 63
Revised 3-62

DMSA-2492
Idm-5401

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

1. Since March 1, 1960, has there been a change in ownership, lease, or sublease? If yes, please state details of the transaction below and provide a true or signed copy of the pertinent documents, unless they have been provided before. Yes ☐ No ☐

2. Since March 1, 1960, has there been any production from the land subject to the contract? Yes ☐ No ☐

   A. If so and it was shipped, give quantity, value, and name and address of purchaser.

	Quantity	Value
_____		
_____	_____	_____

   B. If stockpiled awaiting sale, state quantity, grade, and location.

Type	Quantity		Estimated Grade	Location
Ore	_____	Tons	_____	_____
Concentrates	_____	Tons	_____	_____
Other	_____	Tons	_____	_____

3. Since _____, has any production been transported through _____ workings (see _____ of contract)? Yes ☐ No ☐

   A. If so, state quantity, value, and disposition of material.

Disposition of Material	Quantity	Value
_____	_____	_____

Submitted by:

Name _____ Title _____

Address _____ Date _____

4511

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

July 27, 1962

Re: [illegible]-2492 (Fluorspar)
Empire Mining & Engineering Co.
Orion and Saddle Claims
Boulder County, Colorado
Contract [illegible]-[illegible]01

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, Colorado

Gentlemen:

After the completion of the approved exploration work under the contract identified above, we asked to be informed about changes in the status of the property and production from it during the period of royalty obligation.

To assist you to furnish this information and to assure the accuracy of our records, please answer the questions on the back of this letter and return two copies to this office with copies of any pertinent documents.

Sincerely yours,

W. R. Griswold

W. R. Griswold, Chief
Division of Minerals

MME Form 63
Revised 3-62

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

1. Since March 1, 1960, has there been a change in ownership, lease, or sublease? If yes, please state details of the transaction below and provide a true or signed copy of the pertinent documents, unless they have been provided before. Yes ☐ No ☐

2. Since March 1, 1960, has there been any production from the land subject to the contract? Yes ☐ No ☐

   A. If so and it was shipped, give quantity, value, and name and address of purchaser.

	Quantity	Value
_____		
_____	_____	_____

   B. If stockpiled awaiting sale, state quantity, grade, and location.

Type	Quantity	Estimated Grade	Location
Ore	_____ Tons	_____	_____
Concentrates	_____ Tons	_____	_____
Other	_____ Tons	_____	_____

3. Since _____, has any production been transported through _____ workings (see _____ of contract)? Yes ☐ No ☐

   A. If so, state quantity, value, and disposition of material.

Disposition of Material	Quantity	Value
_____	_____	_____

Submitted by:

Name _____ Title _____

Address _____ Date _____

4511

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
~~WASHINGTON 25, D.C.~~
Building 20 - Federal Center
Denver 25, Colorado

OFFICIAL FILE COPY
O. M. E.
RECEIVED APR 11 1960

DATE	INITIALS	CODE
4-11	gad	VVO
4	JE	110
4/26	[illegible]	800
4/25	gd	500
		225

April 8, 1960

Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Statement in Lieu of Annual Report of Certified Project.

Enclosed are the original and two copies of the following subject report for the period January 1, 1959 through December 31, 1959:

DMEA Docket 2492
Contract Idm-E401 (Fluorspar)
Empire Mining and Engineering Co.
(Orion and Saddle claims)
Boulder County, Colorado.

J. W. Townsend

Enclosure

OFFICIAL FILE COPY
O. M. E.
RECEIVED APR 11 1960

DATE	INITIALS	CODE

OFFICE OF MINERALS EXPLORATION

REGION III

Statement in Lieu of ~~Interim~~ Annual Report
of Certified Project

Reporting Period January 1, 1959 through March 1, 1960

Docket and Contract Number DMEA-2492 -- Idm-E401 (Fluorspar)

Operator Empire Mining and Engineering Co.
(Orion and Saddle claims), Boulder Cty, Colo

The project has been inactive during the reporting period [x]

Pertinent data relative to the subject contract has remained unchanged since the last report [x]

Remarks:
The President of the Company stated as noted above.

Signed H. M. Connors

H. M. CONNORS

Date March 7, 1960

OFFICIAL FILE COPY
O. M. E.
RECEIVED JAN 25 1960

DATE	INITIALS	CODE
1-25	gad	VVO
1-25	CEP	800
1/26	CLT	~~500~~
		225

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
Building 20 - Federal Center
Denver 25, Colorado

January 22, 1960

Empire Mining & Engineering Co.
P. O. Box 763
Boulder, Colorado

Re: Docket No. ~~DMEA 2492~~ (Fluorspar)
Contract No. Idm-E401
(Orion & Saddle No. 6 claims)
Boulder County, Colorado

Gentlemen:

In reference to the "Certification by the United States of America of a Discovery or Development under an exploration Project Contract" and the instructions in the Washington Office letter of transmittal of the Certification on the captioned project, please indicate your answer to the following questions and return one copy of the questionnaire immediately to this office.

Very truly yours,

Original signed by

J. W. Townsend
Executive Officer, OME
Field Team, Region III

1. Has the property been sub-leased or any change made in ownership other than this office has been notified? Yes ___ No___. If yes, please furnish details of the transaction on a separate sheet and include a true or signed copy of any instrument that was executed in conjunction with the matter.

2. Has there been production from the land subordinated under the referenced contract since January 1, 1959 ? Yes___ No___. If yes, and shipments made, who was the purchaser? _____

3. Is any of the following material stockpiled? Yes___ No___.

(a) Ore, Tons _____ Estimated grade _____
(b) Concentrates, lbs. _____ Estimated grade _____
(c) Low grade ore, tons _____ Estimated grade _____
Place stockpiled _____

Signed _____

Title _____ Date _____

RMC:ltm cc: Chmn. Op. Comm. Roy. Corres. E401 Chron.

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
6/16	G	220
6/17	alA.	~~600~~
6/17	G	225
		~~600~~

JUN 16 1959

Memorandum

To: Mr. Donald T. Finch, CME Auditor

From: E. D. Talbert, Acting Chief (Signed) E. D. Talbert
Contract Administration and Audit Division

Subject: Docket No. DMEA-2492 (Fluorspar)
Empire Mining and Engineering Company
Contract No. Idm-E401

Your Report of Royalty Review on the subject contract is acceptable and distribution of the regional copies is authorized.

EDTalbert/ama
June 15, 1959

Copy to: Docket
Director's Reading File
Code 800

43683

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado

January 22, 1959

OFFICIAL FILE COPY
O. M. E.
RECEIVED JAN 26 1959

DATE	INITIALS	CODE
1-26	C	220
"	[illegible]	110
1/28	[illegible]	800
1/20	[illegible]	600
		770

Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1, 1958 to December 31, 1958 Docket DMEA 2492 (Fluorite) Contract Idm-E401, Empire Mining and Engineering Company (Orion and Saddle No. 6 claims) Boulder County, Colorado

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

J. W. Townsend

J. W. Townsend

Enclosures

OME
DEPARTMENT OF THE INTERIOR
JAN 22 1959
REGION III
DENVER, COLORADO

OME, REGION III

Statement in Lieu of Semiannual Report

Reporting Period	**July 1, 1958 to December 31, 1958**
Docket and Contract Number	**Docket No. 2492, Contract Idm-E401 (Fluorite)**
Operator	**Empire Mining and Engineering Company (Orion and Saddle No. 6 claims) Boulder County, Colo.**

The project has been inactive during the reporting period [x]

Pertinent data relative to the subject contract has remained unchanged since the last report [x]

Remarks:

The company has not resumed work during the reporting period.

Signed Carl Belser
Carl Belser

Date **Jan. 21, 1959**

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

224 New Customhouse
Denver 2, Colorado
September 25, 1958

RECEIVED SEP 29 1958

DATE	INITIALS	CODE
9-29	C	220
9/29	Com	100
	JH	110
9/30	EEG	800
10/1	Hawks	600

Memorandum

To: Chairman, Operating Committee, OME

From: Acting Executive Officer, OME Field Team, Region III

Subject: Semiannual Report of Certified Project for the Period January 1 to June 30, 1958
Docket No. DMEA-2492 (Fluorspar), Contract Idm-E401
Empire Mining and Engineering Company (Orion and Saddle No. 6 claims) Boulder County, Colorado

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

E. N. Harshman

E. N. Harshman

Encls.

DMEA
DEPARTMENT OF THE INTERIOR
SEP 18 1958
REGION III
DENVER, COLORADO

DMEA, REGION III

Statement in Lieu of Semiannual Report

Reporting Period	January 1, 1958 to June 30, 1958
Docket and Contract Number	Docket No. 2492, Contract Idm-E401
Operator	Empire Mining and Engineering Company (Orion and Saddle No. 6 claims)

The project has been inactive during the reporting period [X]

Pertinent data relative to the subject contract has remained unchanged since the last report [ ]

Remarks:

The son of the late Mr. C. E. Zahn, former president of the operating company, was in Jamestown and Boulder on September 13, 1958 on business related to the possible future mining of fluorspar.

Son predecease
See Reg III memo
9.27.62

Signed Carl Belser
Carl Belser

Date 9/17/58

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

February 18, 1958

DMEA
RECEIVED FEB 21 1958

2/21	C	220
21	Com	100
"	FEJ	110
2/24	EEF	800
		225

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1, 1957 to December 31, 1957

DMEA Docket 2492 (Fluorspar)
Contract Idm-E 401, Empire Mining and Engineering Company (Orion and Saddle No. 6 claims) Boulder County, Colorado

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

W S King

Executive Officer, DMEA
Field Team, Region III

Enclosures
MHM:jy

cc: Semiannual Report File E 401
Harshman
DMEA,DFC -2-
Chron.

DMEA
DEPARTMENT OF THE INTERIOR
FEB 6 - 1958
REGION III
DENVER COLORADO

DMEA, REGION III

Statement in Lieu of Semiannual Report

Reporting Period July 1, 1957 to December 31, 1957
Docket and Contract Number Docket No. 2492, Contract Idm-E401
Operator Empire Mining and Engineering Company (Orion and Saddle No. 6 claims)

The project has been inactive during the reporting period [X]

Pertinent data relative to the subject contract has remained unchanged since the last report [ ]

Remarks:

The former president of the operating company, C. E. Zahn, died during 1957. Mr. Zahn's son lives in Denver and seemingly is in charge of any company actions.

Zahn died 1958

Signed Carl Belser
Carl Belser

Date 1/30/58

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

FILE COPY
DMEA
RECEIVED JUL 15 1957

DATE	INITIALS	CODE
7 18	C	220
18	Com	100

July 11, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project ~~for the period~~
January 1, 1957 through June 30, 1957
DMEA Docket 2492 (Fluorspar)
Contract Idm-E 401, Empire Mining and Engineering Company
(Orion & Saddle No. 6 Claims), Boulder County, Colorado

Enclosed are the original and ~~three~~ two copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

W H King
~~H. M. Trower~~
Executive Officer, DMEA
Field Team, Region III

Enclosures

MHM/vj

cc: Semiannual Report File E 401
Royalty File E401
Harshman
DMEA/DFC
Chron.

DMEA, REGION III

DMEA
DEPARTMENT OF THE INTERIOR
JUN 19 1957
REGION III
DENVER, COLORADO

STATEMENT IN LIEU OF SEMIANNUAL REPORT

Reporting Period Jan. 1, 1957 to May 30, 1957
Docket and Contract Number DMEA 2492, Contract Idm-E401
Operator Empire Mining and Engineering Co.
Orion and Saddle No. 6 claims

The project has been inactive during the reporting period [X]

Pertinent data relative to the subject contract has remained unchanged since the last report [X]

Remarks:
The property was visited on June 13, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 15 1957

DATE	INITIALS	CODE

Signed W. J. Tesch Jr.
W. J. Tesch, Jr.
Bureau of Mines

Date
June 14, 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

224 New Customhouse
Denver 2, Colorado

Date: February 28, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1, 1956 through December 31, 1956
DMEA Docket 2492 (Fluorspar)
Contract Idm-E 401, Empire Mining and Engineering Co. (Orion and Saddle No. 6 Claims), Boulder County, Colorado

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office~~, and~~ Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

E. N. Harshman

for W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures

MHM/vj
cc: Semiannual Report File E 401
J. F. Shaw (2)
E. N. Harshman
Chron.

OFFICE COPY
DMEA
MAR 4 1957
DATE | INITIALS | CODE
3/5 | CORR | 100
3/7 | C | 220

DMEA, REGION III

DMEA
DEPARTMENT OF THE INTERIOR
FEB 27 1957
REGION
DENVER

STATEMENT IN LIEU OF SEMIANNUAL REPORT

Reporting Period July 1, 1956 - December 31, 1956
Docket and Contract Number DMEA 2492, Contract Idm-E401
Operator Empire Mining and Engineering Co.

The project has been inactive during the reporting period [X]

Pertinent data relative to the subject contract has remained unchanged since the last report [ ]

Remarks:

None

OFFICIAL FILE COPY
1957

Signed

D. E. Redmon

D. E. Redmon
Mining Engineer
U. S. Bureau of Mines

Date

February 26, 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

RECEIVED
SEP 24 1956

224 New Customhouse
Denver 2, Colorado

Date: September 19, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period January 1, 1956 through June 30, 1956
DMEA Docket 2492 (Fluorspar)
Contract Idm-E 401, Empire Mining and Engineering Co. (Orion and Saddle No. 6 claims), Boulder County, Colorado

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office~~, and~~ Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures
MHM/vj
cc: Semiannual Report File E 401
J. F. Shaw (2)
E. N. Harshman
Chron.

DMEA, REGION III

STATEMENT IN LIEU OF SEMIANNUAL REPORT

DMEA
DEPARTMENT OF THE INTERIOR
SEP 10 1956
REGION
GRAND JUNCTION, COLO.

Reporting Period Jan. 1, 1956 to June 30, 1956
Docket and Contract Number DMEA 2492, Contract Idm-E401
Operator
Empire Mining and Engineering Co.

RECEIVED
SEP 24 1956

	"X" one
The project has been inactive during the reporting period	X
Pertinent data relative to the subject contract has remained unchanged since the last report	X

Remarks:

none

Signed C. M. Harrer
C. M. Harrer

Date
Sept. 5, 1956

U. S. DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

RECEIVED
MAY 28 1956

224 New Customhouse
Denver 2, Colorado

Date: May 24, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty payments, Docket DMEA 2492 (Fluorspar), Contract Idm-E401, Empire Mining & Engineering Company (Orion and Saddle No. 6 claims), Boulder County, Colorado

Period: March, 1956

During the above month the following royalty payments were received for ore or concentrates shipped from the subject property:

Date	Lot No.	Dry Tons	Royalty Due	Royalty Paid	Bonus Roy. Due	Bonus Roy. Pd.

(NONE)

U. S. DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

RECEIVED
MAY 28 1956

224 New Customhouse
Denver 2, Colorado

Date: May 24, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty payments, Docket DMEA 2492 (Fluorspar), Contract Idm-2401, Empire Mining & Engineering Company (Orion and Saddle No. 6 claims), Boulder County, Colorado

Period: March, 1956

During the above month the following royalty payments were received for ore or concentrates shipped from the subject property:

Date	Lot No.	Dry Tons	Royalty Due	Royalty Paid	Bonus Roy. Due	Bonus Roy. Pd.

(NONE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

224 New Customhouse
Denver 2, Colorado

Date: May 15, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: ~~Semiannual~~ Annual Report of Certified Project for the period January 1, 1955 through December 31, 1955
DMEA Docket 2492 (Fluorspar)
Contract Idm-E 401 Empire Mining and Engineering Company (Orion and Saddle No. 6 claims), Boulder County, Colorado

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office and Memorandum 29.

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures
RDB/vj
cc: Semiannual Report File E 401
Royalty File E401
J. F. Shaw (2)
E. N. Harshman
Chron.

RECEIVED
MAY 17 1956

Semi-Annual Report of Certified Projects

DMEA
Date Rec'd.
APR 30 1956
BUREAU OF MINES
Denver, Colorado

Reporting Period January 1, 1955 to December 31, 1955

Docket and Contract Number DMEA 2492 Idm-E401

Operator Empire Mining & Engineering Co.

Commodity Fluorspar

Mine Name Orion and Saddle No. 6 claims

County and State Boulder County, Colorado

Date of Contract September 8, 1952

Date of Certification April 13, 1953

Expiration Date of Royalty Payments September 8, 1962

Date of Examination for this Report April 3, 1956 (office records examined)

Total Amount of Contract $5,425.00

Total Expenditures under Contract $5,425.00

Amount of Government Participation at 50 % $2,712.50

Royalty Payments this Period None

Previous Royalty Payments None

Total Royalty Payments to Date None

% Loan Repayment Completed 0%

RECEIVED
MAY 17 1956

Amount of Royalty Due None

Royalty Remarks

Original Estimate of Reserves
(from Final Engr.-Geol. Report): 13,400 short tons averaging 54.9% CaF_2

Increase of Reserves by work performed subsequent to expiration or termination of contract: None

Revised Estimate of Reserves:

Production this Period (Ore or Concentrates) None

Amount of Previous Production (since date of contract) None

Total DMEA Production to date None

% of Revised Reserves Mined 0%

Production Remarks: There has been no production from the property during the reporting period and none is anticipated in the immediate future.
Note: On Uranium projects check with AEC to assure that our records are in agreement with theirs.

Other Remarks:

Signed R. L. Bolmer (Engineer)
R. L. Bolmer

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

224 New Customhouse
Denver 2, Colorado

March 21, 1955

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Semi-annual Report - Docket DMEA-2492, Contract Idm-E401, Empire Mining and Engineering Company, Inc., Boulder County, Colorado

Enclosed are four copies of the Semi-annual Report on Contract Idm-E401.

W. M. Traver

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

SEMI-ANNUAL REPORT OF CERTIFIED PROJECT

Period:	July 1, 1954, to December 31, 1954
Docket No.:	DMEA 2492, Contract: Idm-2401
Operator:	Empire Mining and Engineering Company, Inc. P. O. Box 763 Boulder, Colorado
Name of mine:	Orion-Saddle No. 6 claims
County:	Boulder County, Colorado
Date certified:	April 13, 1953
Contract amount:	$5,425.00 Amount spent: $5,425.00
Government participation:	50 percent, or $2,712.50 (on September 8, 1952)
Remarks:	There has been no production from the property for the 6-month period ending December 31, 1954, and none is anticipated in the immediate future. Fluorspar occurs in steeply dipping veins, 85 to 140 feet long and 1.1 to 2.6 feet thick. Total reserves were estimated as 13,400 tons, assaying 54.9 percent CaF_2, 6.7 percent $CaCO_3$, 23.0 percent SiO_2, 3.2 percent Fe, 17.2 percent Al_2O_3, and 2.5 percent S.

Carl Behm

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
SEMI-ANNUAL REPORT OF CERTIFIED PROJECT

Period:	January 1, 1954 to June 30, 1954
Docket No.:	DMEA 2492 Contract: Idm-E401
Operator:	Empire Mining and Engineering Company C. E. Zahn, Jr., President P. O. Box 763, Boulder, Colorado
Name of mine:	Orion - Saddle No. 6 claims
County:	Boulder County, Colorado
Date Certified:	April 13, 1953
Contract amount:	$5,425.00 Amount spent: $5,425.00
Government participation:	$2,712.50
Reserves:	13,400 tons averaging 54.9 percent CaF_2
Remarks:	The property is not in operation nor has it been operated since the completion of the exploration project. To date, no production has resulted from the certified discovery. During preceding 6-month period, only annual assessment work has been performed on the claims. It is understood that the operator presently desires to develop the discovery and has already, or shortly will, make application for a production loan with the Small Business Administration.

RLB/ici

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

SEMI-ANNUAL REPORT OF CERTIFIED PROJECT

Period:	July 1, 1953 to December 31, 1953
Docket No.:	DMEA 2492 Contract: Idm-E401
Commodity:	Fluorspar
Operator:	Empire Mining and Engineering Company, Inc.
Address:	P. O. Box 763, Boulder, Colorado
Name of mine:	Orion-Saddle No. 6 claims
County:	Boulder County, Colorado
Date Certified:	April 13, 1953
Contract Amount:	$5,425.00 Amount Spent: $5,425.00
Government Participation:	50 percent, or $2,712.50 (Completed in December 1952)
Remarks:	The Orion-Saddle No. 6 claims have not been operated since the diamond drilling contract was completed. Charles E. Zahn, Jr., president of Empire Mining and Engineering Company, is now living in the East but expects to return at some later date and drive a tunnel into the deposit from a point near the main road. Fluorspar occurs in several short, narrow veins and mineralized breccia zones in a sheared, jointed, and altered granodiorite. Total reserves of measured, indicated, and inferred ore are estimated as 13,400 tons--assaying about 54.9 percent CaF_2 and having a relatively high silica content.

CB/le
E401

mds

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

224 New Customhouse
Denver 2, Colorado

September 22, 1953.

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: Semiannual Report - Docket No. DMEA-2492, Contract No. Idm-E401 (Fluorspar), Empire Mining and Engineering Company, Inc.

Enclosed are four copies of the Semiannual Report on Contract No. Idm-E401.

W. H. King

W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

SEMI-ANNUAL REPORT OF CERTIFIED PROJECT

Period: January 1, 1953 to June 30, 1953

Docket No.: DMEA 2492 Contract: Idm-E401

Commodity: Flourspar

Operator: Empire Mining and Engineering Company, Inc.

Address: P. O.Box 763, Boulder, Colorado

Name of Mine: Orion-Saddle No. 6 claims

County: Boulder, Colorado

Date Certified: April 13, 1953

Contract Amount: $5,425.00 Amount Spent: $5,425.00

Government Participation: 50 percent, or $2,712.50 (on September 8, 1952)

Remarks: There has been no production from the property for the 6-month period ending June 30, 1953, and none is anticipated in the immediate future.

Flourspar occurs in steeply-dipping veins, 85 to 140 feet long and 1.1 to 2.6 feet thick. Total reserves were estimated as 13,400 tons assaying 54.9 percent CaF_2, 0.7 percent $CaCO_3$, 23.0 percent SiO_2, 8.2 percent Fe, 17.2 percent Al_2O_3, and 2.5 percent S.

CMH/eb

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

April 22, 1953

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Commodity-Industry Analyst, Construction and Chemical Materials Branch, Minerals Division

Subject: DMEA 2492 (Fluorspar), Contract Idm-E401, Empire Mining & Engineering Company, Boulder County, Colorado

I concur in the recommendations that a certification of discovery be made as outlined in attached Form B and detailed in the attached engineering and geologic reports.

Joseph C. Arundale

Joseph C. Arundale, Commodity-Industry Analyst
Construction and Chemical Materials Branch

Enclosures 4

FILE COPY
SURNAME:

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

Hauk
Anbin
Hoffman
Chambers
Turnbull
Hedges
Sawbridge
Johnson

Empire Mining & Engineering Company
P. O. Box 763
Boulder, Colorado

APR 14 1953

Re: Docket No. DMEA-6492 - Fluorspar
Orion No. 16111 and Saddle #6 Claims
Boulder County, Colorado
Contract No. Idm-8401

Gentlemen:

Transmitted herewith is a Certification of Discovery or Development on Contract No. Idm-8401 on the Orion No. 16111 and Saddle #6 Claims in Boulder County, Colorado. J. C. 4/14/53

By the terms of the Exploration Project Contract and of the Certification, all production from the aforesaid claims from the date of the Exploration Project Contract, September 5, 1952, is subject to the Government's percentage royalty as set forth in the contract until the sum of $2,712.50 is paid or until September 5, 1962, whichever occurs first.

Payments should be made to Mr. W. R. King, Executive Officer, Defense Minerals Exploration Administration Field Team, Region IV, Bureau of Mines, 224 New Customhouse Building, Denver 2, Colorado. Checks should be drawn payable to the Treasurer of the United States. The purchaser should be advised to deduct the royalties from the amount due on each shipment and forward check direct to the Executive Officer.

Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets showing quality and grade of the ore sold, the name of the purchaser, and the price and charges certified to be correct by your company.

You are requested to notify Mr. King of any changes in ownership or production rights that might have an effect on the Government's right to its percentage royalty. Also, if production ceases at any time for any extended period, please notify Mr. King at six-month intervals that no production has been made.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

LCHauk:gad 4/6/53
Enclosure

Copy to: Admr. R. File
Mr. Johnson
Field Team, Region IV
Docket File
Mr. Hodgson, 4604
Mr. Chambers
Operating Committee
Mr. Thayer, 5216 GSA Bldg.
Mr. Hauk

FILE COPY
SURNAME:

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

Hoch
Phelps
Hoffman
Chamberlain
Dunbar
Hedges
Schmidt
Hyslop

Mr. Russell Parker
Acting Administrator, Defense Materials
Procurement Agency
General Services Administration Bldg.
Washington 25, D. C.

APR 14 1953

Re: Docket No. [illegible] - Fluorspar
Empire Mining & Engineering Company
Grim No. Hill and Neville #6 Claims
Boulder County, Colorado
Contract No. [illegible]

Dear Mr. Parker,

I am enclosing one copy each of "Certification of Discovery or Development" and final report by the Field Team, both relating to the subject contract.

J.C. 4/14/53

The exploration contract was signed September 8, 1952, with the Government participating to the extent of 90% of $8,[illegible] or $[illegible],712.50.

The project was completed December 30, 1952, after the expenditure of $5,425, which is the total accepted cost according to the report of review issued March 4, 1953.

There were three DH holes drilled totaling 700 feet for an over-all cost of $7.75 per foot. The final field team report estimates 13,400 tons of fluorspar reserves in three short veins with an average grade of 54.9% CaF_2, [illegible]% $CaCO_3$, 23.4% SiO_2, [illegible] Fe, 17.2% Al_2O_3, and [illegible] S.

The DMEA concurs with the field team evaluation of the work performed and has certified that a discovery or development has resulted from the work under the contract.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

Enclosures 2

LMHook:gad 4/3/53
Copy to: Admr. R. File Operating Committee Mr. Hedges, 4604
Field Team, Eng.IV Mr. Thayer, 5216 GSA Bldg. Mr. Chambers
Mr. Markland Mr. F.E.Johnson Docket File Mr. Hook

IN REPLY REFER TO:

G-MD-CNM

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 6 1953

April 3, 1953

Memorandum

To: L. G. Houk, Defense Minerals Exploration Administration

From: R. E. Van Alstine, U. S. Geological Survey

Subject: DMEA-2492 (fluorspar), Empire Mining and Engineering Company, Boulder County, Colorado; review of final reports submitted March 19, 1953, recommending certification.

Exploration at the applicant's property in the Jamestown district resulted in the discovery of 4,400 tons of indicated ore and 8,900 tons of inferred ore, averaging 54.9 percent CaF_2 and 23 percent SiO_2. Although the tonnage is not impressive, the grade is quite typical of material currently being mined and milled from much larger deposits in this district. The applicant's veins are indicated to be short and narrow, ranging from less than a foot to 2.6 feet in thickness. Such a deposit must be regarded as submarginal now, as only a small tonnage was discovered at depths that ranged through several hundred feet.

I suppose that this deposit may be mined during the next 10 years, but doubt that the operation would be profitable. Nevertheless the fact that a small deposit has been found, which might be considered mineable by someone, seems to require that a certificate of discovery be issued. The certificate should make no mention of the quantity of reserves established by the exploration work, contrary to the "Form B" suggested by the Field Team.

R. E. Van Alstine

R. E. Van Alstine

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

Defense Minerals Administration
RECEIVED
MAR 23 1953

224 New Customhouse
Denver 2, Colorado

March 19, 1953

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Field Team, DMEA, Region IV

Subject: Docket DMEA 2492 (Fluorspar), Contract Idm-E401, Empire Mining and Engineering Company, Boulder County, Colorado.

Enclosed are the following reports and data which constitute the final reports on work performed under the subject contract:

1. Original and one copy of the Operator's final report.

2. Original and three copies of the final geologic report by the Geological Survey.

3. Original and three copies of the final engineering report by the Bureau of Mines.

4. Original and three copies of "Form B", which was prepared to detail information relative to the recommended certification of discovery.

Work was completed in conformance with the short form contract, which authorized three core drill holes with an aggregate total footage of 700 feet. The Operator drilled hole No. 4 and an excess in holes 1 and 3 of 30 feet at his own expense. The project work resulted in the development of an estimated 13,400 tons of measured, indicated and inferred ore.

We concur in the recommendations of the Engineer and Geologist that a certification of discovery be issued as detailed on "Form B" and in the Engineering and Geologic Reports.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Reviewed by
DMEA OPERATING COMMITTEE
3-22-53
(date)

Enclosures

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

200 New Customhouse
Denver 2, Colorado

March 18, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 23 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2492, Empire Mining and Engineering Company, Orion and Saddle No. 6 Claims, Boulder County, Colorado.

Attached are 8 copies of the final geologic report by E. N. Harshman covering Contract Idm-E401, DMEA Docket 2492, Empire Mining and Engineering Company, Boulder County, Colorado.

The applicant applied for a loan to explore by diamond drilling for fluorspar. The subject contract authorized drilling 3 holes with a total length of 700 feet at a cost of $5425. Fluorspar veins were cut in each of the holes and proved the downward extension of the veins to a depth of at least 200 feet below the surface, that the width of the veins is about the same as in the surface workings, and that there is no appreciable change in grade. Downward extension of the veins can reasonably be expected. It is, therefore, recommended that certification of discovery be made.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

Field Team
Final Rept

3-27-53
(date)

EMPIRE MINING AND ENGINEERING COMPANY

ORION AND SADDLE NO. 6 CLAIMS

BOULDER COUNTY, COLORADO

DMEA DOCKET 2492

Final Geologic Report

By E. N. Harshman
U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
3-27-53
(date)

EMPIRE MINING AND ENGINEERING COMPANY
BOULDER COUNTY, COLORADO

INTRODUCTION

In DMA Docket 1209, the Empire Mining and Engineering Co., P. O. Box 763, Boulder, Colorado, applied for a $100,000 development and production loan to explore for fluorspar ore bodies on the Orion and Saddle No. 6 claims, and to construct a 75 ton-per-day mill to beneficiate this ore. C. S. Robinson, U. S. Geological Survey, and F. D. Everett, U. S. Bureau of Mines, in a report dated November 14, 1951, concluded that the estimated ore reserves were insufficient to justify the expenditure of the requested sum for mine development and mill construction. The application for a DMA development loan was denied.

The applicant subsequently applied for a loan of $25,000, DMEA Docket 2492, to explore for fluorspar ore bodies by means of a 650-foot adit. In a second report, dated May 28, 1952, Robinson and Everett concluded that although the possibility of finding significant fluorspar ore bodies was poor, a limited diamond drilling program was justified. The applicant and the examining team agreed upon a 700 foot drilling program, at an estimated cost of $5,500.

On September 8, 1952, Exploration Project Contract Idm-E401 (short form), between the Government and the Empire Mining and Engineering Co., was signed. This contract authorized drilling 3 holes (combined length of 700 feet) at a cost of $5,425 (Government participation $2,712.50). Drilling was started on October 25, 1952, and completed on December 30, 1952.

HISTORY AND PRODUCTION

Gold was discovered in the Jamestown district in 1865 and although small shipments of fluorspar may have been made as early as 1873 or 1874, the first production of any significance occurred in 1903 when 400 tons of fluorspar ore were shipped from the Blue Jay mine. In the years following, production was increased until a high point was reached in 1918 when 22,810 tons of fluorspar ore were shipped. Production rapidly declined in the following years and between 1930 and 1940 there was almost no activity in the fluorspar mines. In 1940 there was renewed interest in the Jamestown fluorspar deposits and several large operators acquired most of the best properties. Since that time there has been a continuous production of fluorspar from the district. Between 1903 and 1944 about 100,000 tons of acid and metallurgical grade fluorspar were produced. Since 1944 production of crude ore has ranged from 30,000 to 75,000 tons per year.

GEOLOGY

The geology of the Jamestown district has been described by E. N. Goddard (1946) and T. S. Lovering and E. N. Goddard (1950). Much of the following description is based on their excellent discussions.

The Jamestown district lies at the extreme northeast end of the Colorado mineral belt in an area of pre-Cambrian metamorphic and intrusive rocks, and Tertiary intrusive rocks. The fluorspar deposits are localized in an area of pre-Cambrian Silver Plume granite intruded by stocks and dikes of Tertiary granodiorite and sodic granite-quartz monzonite porphyry. The fluorspar deposits occur in a northwestward trending belt 2 miles long, half a mile to 1 mile wide, located on the south and west side of the Porphyry Mountain

stock. The position and shape of the belt is determined by 2 major fracture zones. One of these, represented largely by breccia zones, strikes N. 70° W., and lies near the western edge of the Porphyry Mountain stock; the other, consisting chiefly of fissures, strikes N. 40° W., and lies a quarter to half a mile south of the stock. The brecciation and fracturing are believed to be related to the forces accompanying intrusion of the porphyry stock.

Fluorspar has been mined from both fissure vein and breccia deposits. The vein deposits range from a few inches to 20 feet in width and from 100 to 1000 feet in length. The ore shoots are lenticular and may swell or pinch within a short distance along their strike or dip.

The breccia zones are lenticular bodies of brecciated granodiorite and fluorite cemented with a fine grained mixture of fluorite and clay minerals. They range from 10 to 70 feet in width and from 50 to 350 feet in length. Portions of the breccia zones may carry little or no fluorite but within them there are commonly several high-grade veins.

The fluorspar deposits on the Orion and Saddle No. 6 claims consist of several short narrow veins and mineralized breccia zones in a sheared, jointed, and altered granodiorite. In plan, the veins have a random orientation; dips are steep, generally greater than 80° (fig. 1). A few of the wider veins are paralleled by several narrow veinlets, forming a zone of mineralized rock up to 5 feet wide. Vein lengths range from 50 to 200 feet.

The primary vein minerals are fluorite and quartz, with minor amounts of pyrite, galena, sphalerite, and chalcopyrite. The fluorite and quartz are fine to medium-grained and the sparse sulfides are generally fine-grained. The CaF_2 content of the vein material ranges from 20% to 80%; the sulfide content is generally 1% or less.

Goddard (1946) believes that the brecciation and mineralization of the main breccia zone, which passes several hundred feet northeast of the Saddle No. 6 claim, are related to the Porphyry Mountain stock to the east. Genetically, the breccia zones and veins on the Orion and Saddle No. 6 claims appear to be related to the same intrusive stock, but since they are located on the western border of the zone of ore deposits, the structures are more narrow and the mineralization of lower intensity than in the deposits to the east of these claims.

EXPLORATION

Under the terms of the exploration contract, three diamond drill holes were authorized with a combined total length of 700 feet. The Empire Mining and Engineering Company, at their expense, extended each of the three holes an average of 10 feet beyond their proposed depths and drilled a fourth hole (D.D.H. No. 4) to explore a fluorspar vein not proposed for exploration under the contract. Logs of the four holes are included with this report.

Basic exploration data follow:

Hole No.	Bearing	Dip	Total Depth	Objective
DDH 1	S. 60° W.	65°	260'	Vein A
DDH 2	N. 85° W.	65°	240'	Vein A
DDH 3	S. 79° W.	55°	230'	Vein A, B, & C
DDH 4	N. 11° W.	55°	240'	Vein exposed in Orion adit

Fluorspar veins were cut in each of the 3 DMEA holes, and in hole No. 4, drilled by the applicant. Pertinent data on the results of the drilling follow:

Hole No.	Fluorite encountered between depths	Actual vein width	Sample No.	% CaF_2
1	150.0' to 159.0'	4.6'	H645	50.10
2	203.5' to 205.5'	0.8'	H646	20.16
2	214.5' to 217.5'	1.4'	H647	32.60
3	82.8' to 86.0'	1.8'	H648	57.91
3	188.5' to 190.0'	0.8'	H649	36.50
3	217.7' to 221.2'	1.3'	H650	81.36
4	167.5' to 173.9'	3.5'	EM105	73.78

The exploration program was successful in proving the downward extension of the fluorspar veins to a depth of about 200 feet below the ground surface. Further, the exploration has shown that the average vein widths at this depth are about the same as the average vein widths in the surface workings, and that there is little or no change in the average CaF_2 content of the vein material between the surface and a depth of 200 feet.

There is no evidence to indicate that the bottom of the zone of fluorite deposition has been reached by the present drilling; downward extension of the fluorspar veins can be expected. Several hundred feet north of the Orion and Saddle No. 6 claims, fluorspar is being mined to a depth of 1200 feet below the ground surface.

ORE RESERVES

Three veins were explored under contract Idm-E401. They are shown on Fig. 1 as veins A, B, and C. A fourth vein, explored by the applicant, is exposed in the Orion tunnel (fig. 1) and was cut in DDH No. 4. For the purpose of this report, none of the ore is considered as measured. The ore on vein A above the depths explored by drill holes 1, 2, and 3 is considered as indicated. Ore on veins B, C, and on the Orion tunnel vein, explored by a single drill hole, is considered as inferred. Inferred ore is calculated to extend to a depth 50% greater than the depth determined by exploration. Ore block lengths are taken as the length of the known fluorspar vein outcrop.

Ore reserves follow:

Vein	Length	Average Width	Depth	ft^3/ton	Type ore	Tons*	% CaF_2
A	140'	2.6'	146'	12	Indicated	4400	49.7
A	140'	2.6'	73'	12	Inferred	2200	49.7
B	85'	2.3'	250'	12	Inferred	4000	48.3
C	100'	1.1'	300'	12	Inferred	2700	76.9
Orion tunnel	150'	2.4'	210'	12	Inferred	6300	68.7

13,300

19,600

* -- to nearest 100 tons

CONCLUSIONS AND RECOMMENDATIONS

1. Fluorspar exists to a depth of at least 200 feet below the outcrop of vein A, B, and C, explored under contract Idm-E401, and to a similar depth below the Orion Tunnel exposure, explored by the applicant.

2. Because of the narrowness of the veins and the probability of considerable dilution during mining, these deposits are considered marginal at present market prices.

3. Some fluorspar might be produced at a profit by careful, small scale mining from the upper portions of the wider veins, particularly vein A and the vein exposed in the Orion tunnel. An insignificant production would result from such operations.

4. The recently completed exploration program has defined the extent and character of the fluorite deposits to a degree commensurate with their importance. Additional government assistance, either for exploration or for production is not recommended.

5. Certification of a discovery is recommended on the grounds that an estimated 13,300 tons of indicated and inferred ore was outlined by work accomplished with government assistance; while this ore is considered marginal

at present market prices, profitable operations could result from an improvement in the fluorspar market.

REFERENCES

Goddard, E. N., Fluorspar deposits of the Jamestown district, Boulder County, Colorado: Colo. Sci. Soc. Proc., vol. 15, No. 1, 1946.

Lovering, T. S., and Goddard, E. N., Geology and ore deposits of the Front Range, Colorado: U. S. Geol. Survey Prof. Paper 223, pp. 255-279, 1950.

DH No. 1
EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 CLAIM
BOULDER COUNTY, COLORADO

Started: November 14, 1952
Completed: December 5, 1952

Dip: 65°
Bearing: S. 60° W.
Length: 260 feet

0' to 82.5'	Granodiorite, altered, jointed, iron stained; disseminated pyrite throughout core.
82.5' to 111.0'	Granodiorite breccia, somewhat altered. Contains occasional nodules of fluorite. Pyrite disseminated throughout core. At 88.0' a ½" veinlet of fluorite cuts core at angle of 20° with axis of core. From 108.0 to 108.2 massive fluorite forms about 75% of core.
111.0' to 115.0'	Granodiorite, altered and jointed.
115.0' to 131.5'	Granodiorite breccia, trace of fluorite and disseminated pyrite throughout core.
131.5' to 145.0'	Granodiorite, altered and jointed, some pyrite.
145.0' to 150.0'	Granodiorite and granodiorite breccia; disseminated pyrite throughout core.
150.0' to 159.0'	Fluorite in granodiorite breccia; CaF_2 content 50.1% (sample H645).
159.0' to 161.0'	Granodiorite breccia containing less than 5% fluorite, some pyrite.
161.0' to 184.0'	Granodiorite and granodiorite breccia in alternating zones. Core is jointed and somewhat altered, and contains less than 5% fluorite in breccia zones. Trace of pyrite throughout core.
184.0' to 184.3'	Fluorite in granodiorite breccia; fluorite estimated at 40% of core.
184.3' to 185.0'	Granodiorite.
185.0' to 185.2'	Fluorite in granodiorite breccia; fluorite estimated at 60% of core.
185.2' to 195.0'	Granodiorite, altered, jointed, pyritic.

195.0' to 255.0' Granodiorite breccia, scattered fluorite nodules estimated at less than 5% of core. A 1½" veinlet of fluorite at 201.5' cutting core at 25° to axis and a 1" veinlet at 254.0' cutting core at 20° to axis. Disseminated pyrite in core.

255.0' to 260.0' Granodiorite, altered.

Average core recovery 73% Bx core.
Split core for assay samples: 1. 150.0' to 159.0'.

DH NO. 2
EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 CLAIM
BOULDER COUNTY, COLORADO

Started: October 25, 1952
Completed: November 14, 1952

Dip: 65°
Bearing: N. 85° W.
Length: 240 feet

0' to 40.0'	Granodiorite, iron stained, altered, weathered. Disseminated pyrite throughout core.
40.0' to 103.0'	Granodiorite, altered, disseminated pyrite.
103.0' to 105.0'	Granodiorite breccia; fluorite in nodules makes up about 10% of core.
105.0' to 112.0'	Granodiorite, slightly altered. Pyrite disseminated throughout core.
112.0' to 136.5'	Granodiorite, altered. Contains some pyrite.
136.5' to 141.0'	Granodiorite breccia; fluorite in nodules less than 5% of core.
141.0' to 148.0'	Granodiorite, altered. Some pyrite throughout core.
148.0' to 150.5'	Granodiorite breccia; trace of fluorite.
150.5' to 153.5'	Granodiorite, slightly altered.
153.5' to 176.0'	Granodiorite and granodiorite breccia in alternate zones. Less than 5% fluorite in breccia zones.
176.0' to 196.5'	Granodiorite, altered, pyritic. Occasional ¼" seams of fluorite.
196.5' to 198.0'	Granodiorite breccia containing less than 5% fluorite.
198.0' to 203.5'	Granodiorite; trace of pyrite.
203.5' to 205.5'	Granodiorite breccia; CaF_2 content 20.2% (sample H646).
205.5' to 208.0'	Granodiorite.
208.0' to 209.5'	Granodiorite breccia; about 10% of core is fluorite.
209.5' to 211.0'	Granodiorite.

211.0' to 212.0'	Granodiorite breccia, some fluorite. 3" vein of fluorite at 212.0' at angle of 45° to axis of core.
212.0' to 214.5'	Granodiorite; fluorite less than 5% of core.
214.5' to 217.5'	Fluorite in granodiorite breccia CaF_2 content 32.6% (sample H647).
217.5' to 222.0'	Granodiorite. Occasional brecciated zones containing trace of fluorite.
222.0' to 240.0'	Granodiorite, altered. Some pyrite in core.

Average core recovery 79% Bx core.
Split core for assay samples: 1. 203.5' to 205.5'
2. 214.5' to 217.5'.

DH NO. 3
EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 CLAIM
BOULDER COUNTY, COLORADO

Started: December 9, 1952
Completed: December 30, 1952

Dip: 55°
Bearing: S. 79° W.
Length: 230 feet

0' to 26.0'	Granodiorite, altered and iron stained.
26.0' to 46.0'	Granodiorite, somewhat altered. Gouge zone from 29.5' to 30.0'. A 4" fluorite veinlet at 46.0', cuts core at 45° to axis. At 39.0', a 1" zone of disseminated fluorite.
46.0' to 54.0'	Granodiorite.
54.0' to 72.0'	Granodiorite, altered, iron stained, some pyrite. Isolated nodules of fluorite from 59.0' to 62.0'. A 1" seam of fluorite at 61.0'.
72.0' to 74.5'	Granodiorite. A brecciated zone with trace of fluorite and pyrite at 74.5'. At 75.5' a 1" seam of fluorite in core.
74.5' to 78.0'	Granodiorite, somewhat altered.
78.0' to 80.5'	Granodiorite.
80.5' to 82.8'	Granodiorite, altered.
82.8' to 86.0'	Fluorite in granodiorite breccia cuts core at 20° to axis of core. CaF_2 content 57.9% (sample H648).
86.0' to 119.0'	Granodiorite, altered. At 105.0' a trace of fluorite in gouge zone.
119.0' to 124.0'	Granodiorite breccia containing small seams and nodules of fluorite. At 122.0' a 1" seam of fluorite cuts core at 20° to axis.
124.0' to 129.0'	Granodiorite, altered. Contains some pyrite.
129.0' to 130.0'	Granodiorite breccia; seams of fluorite cut core at 20° to axis of core.
130.0' to 134.0'	Granodiorite, altered.

134.0' to 173.5'	Granodiorite breccia with small patches of fluorite in amounts less than 5% of core.
173.5' to 175.0'	Granodiorite, altered. Some pyrite.
175.0' to 176.5'	Granodiorite breccia, fluorite less than 5% of core.
176.5' to 188.5'	Granodiorite, altered and slightly brecciated.
188.5' to 190.0'	Fluorite seam cuts core at 45° to axis. CaF_2 content 36.5% (sample H649).
190.0' to 192.4'	Granodiorite, altered and pyritic.
192.4' to 194.0'	Granodiorite breccia.
194.0' to 195.5'	Granodiorite, slightly altered.
195.5' to 211.0'	Granodiorite breccia. At 196.0' a 4" seam of fluorite cuts core at 20° to axis; at 197.0' a 2" seam cuts at 30°; at 202.0' a 5" seam cuts at 40°; at 203.0' a ½" seam cuts at 45°; at 204.8' a ½" seam cuts at 45°. At 205.0' to 205.8' a fluorite seam (80% of core) cuts core at 40° to axis. From 205.8' to 209.5' some fluorite (less than 5%) in breccia. From 209.5' to 211.0' some fluorite (about 20%) in breccia.
211.0' to 217.7'	Granodiorite breccia, fluorite less than 5% of core.
217.7' to 221.2'	Fluorite. Vein cuts core at 65° to axis. CaF_2 content 81.4% (sample H650).
221.2' to 222.5'	Granodiorite breccia.
222.5' to 226.5'	Granodiorite.
226.5' to 230.0'	Granodiorite breccia.

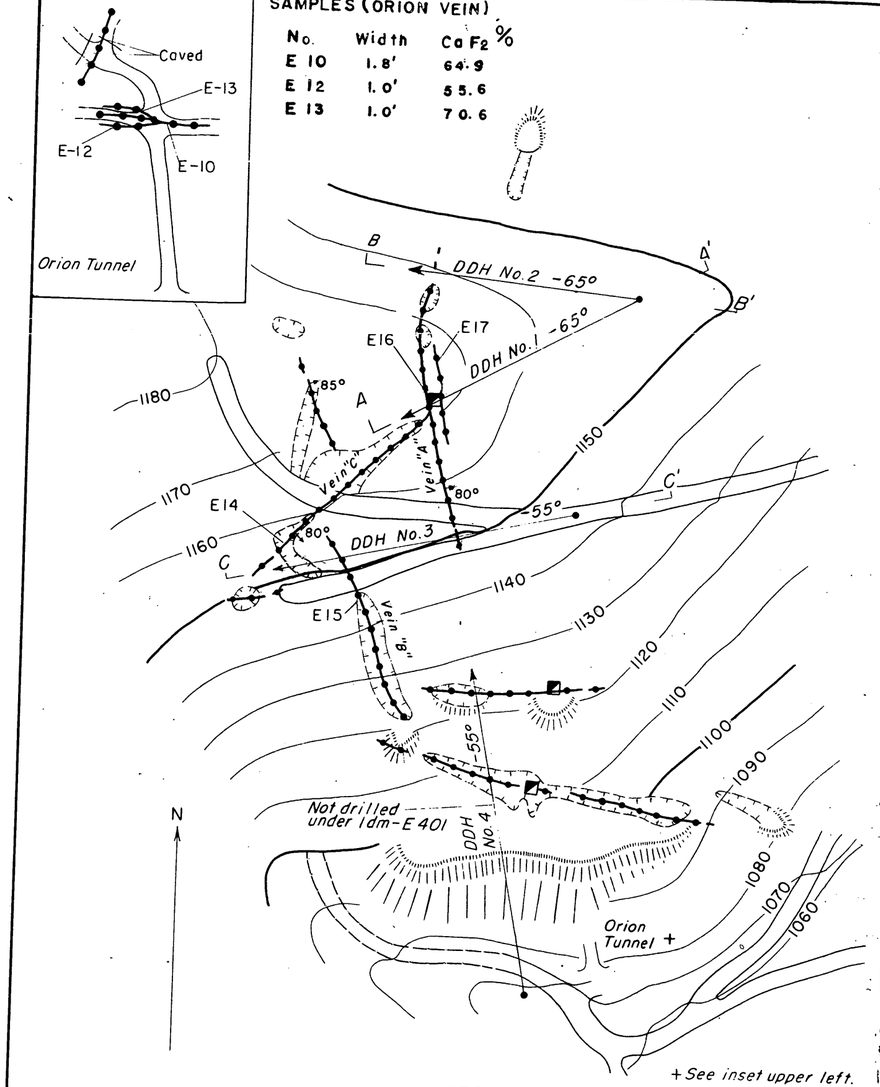
Average core recovery 77% Bx core.
Split core for assay samples:
1. 82.8' to 86.0'
2. 188.5' to 190.0'
3. 217.7' to 221.2'

DH NO. 4
EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 CLAIM
BOULDER COUNTY, COLORADO

Started: January 2, 1953 | Dip: 55°
Completed: About January 15, 1953 | Bearing: N. 10° W.
NOTE: NOT DRILLED UNDER CONTRACT Idm-E401 | Length: 240 feet

0' to 15.0'	Granodiorite, iron stained, weathered, pyritic.
15.0' to 33.0'	Granodiorite, medium-grained, hard, unweathered, pyritic.
33.0' to 50.5'	Granodiorite, hard, unaltered; occasional inclusions of schist.
50.5' to 124.0'	Granodiorite, hard, unaltered, pyritic; occasional inclusions of schist, and narrow (1" to 4") breccia zones. From 60.5' to 61.3' are blebs and 1/8" veinlets of fluorite. Veinlets cut core at 45° angle. From 62.5' to 62.8' granular fluorite in core. At 69.5' a ¼" veinlet of fluorite parallel to axis of core. From 70.0' to 72.1' a number of narrow veinlets of fluorite in core. At 76.7' a ¼" veinlet cuts core at 45° to axis. At 82.3' a 3/4" veinlet of fluorite cuts core at 60° to axis. At 93.2' a 3" vein of fluorite cuts core at 45° to axis. At 99.6' a 1/8" veinlet of fluorite cuts core at 45° to axis. At 101.0' a ¼" veinlet of fluorite cuts core at 20° to axis. At 106.5' a ½" veinlet of fluorite cuts core at 45° to axis. At 108.4' a ½" veinlet of fluorite cuts core at 30° to axis. At 114.4' a ¼" veinlet of fluorite cuts core at 30° to axis.
124.0' to 147.0'	Granodiorite, medium-grained, hard, pyritic. At 135.2' a ½" veinlet of fluorite cuts core at 40° to axis. At 141.2' a ½" veinlet of fluorite cuts core at 40° to axis.
147.0' to 167.5'	Granodiorite, unaltered, pyritic.
167.5' to 173.9'	Fluorspar, fine to medium-grained, purple. CaF_2 73.8% (sample EM105).
173.9' to 192.0'	Granodiorite, firm but somewhat altered, pyritic. At 180.2' fine grained purple fluorite in core. Estimated at 10%. At 190.0' a ½" veinlet of fluorite.
192.0' to 240.0'	Granodiorite, somewhat altered, pyritic. 1/8" veinlets of fluorite at 109.0' and 112.0'. At 235.8' a ¼" fluorite veinlet cuts core at 40° to axis. At 233.1' a 3/4" fluorite veinlet cuts core at 20° to axis.

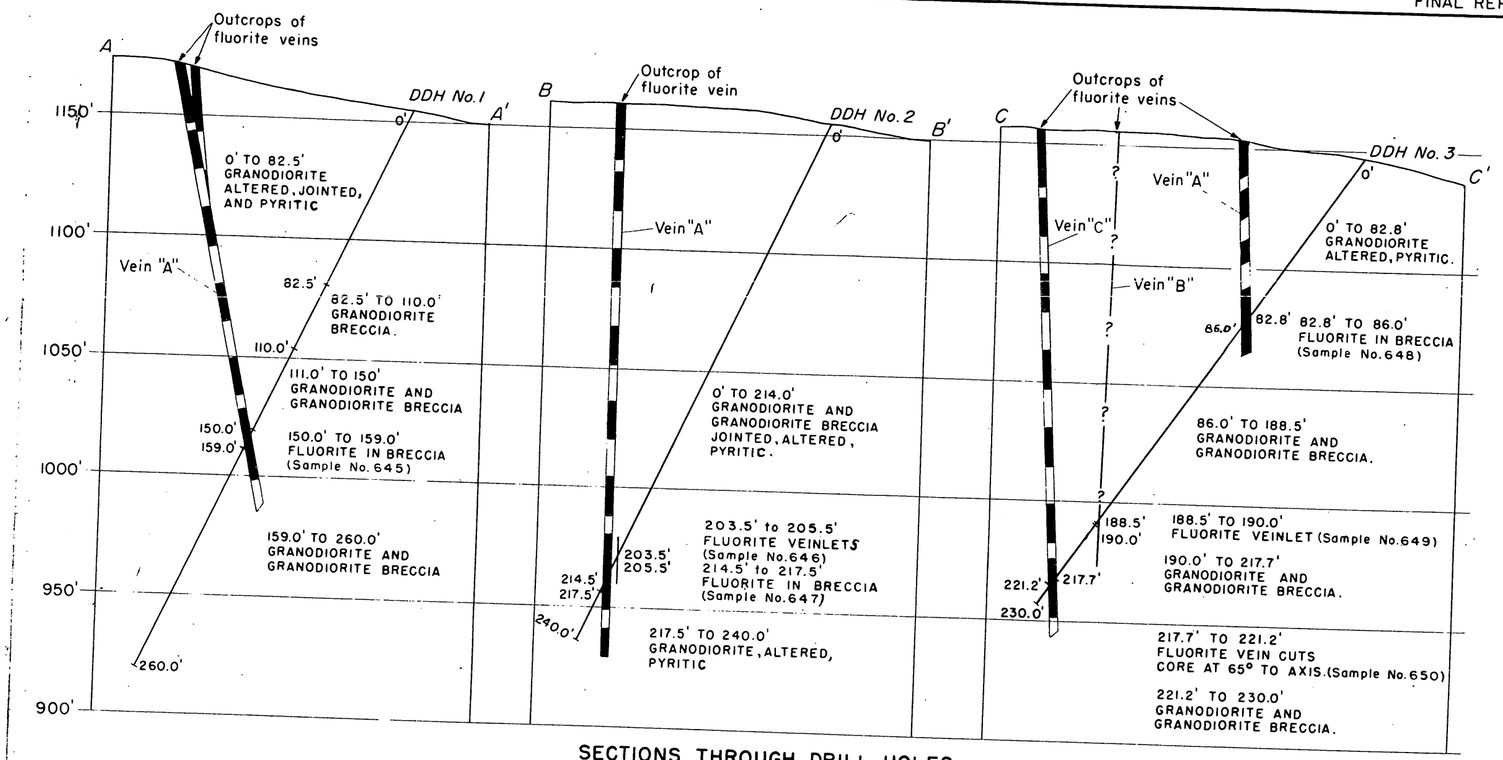
Bx core.
Split core for assay samples: 1. 167.5' to 173.9'.



GEOLOGIC PLAN

SAMPLES (ORION VEIN)

No.	Width	CaF_2 %
E 10	1.8'	64.9
E 12	1.0'	55.6
E 13	1.0'	70.6



SECTIONS THROUGH DRILL HOLES

SAMPLE TABLE

No.	Width	CaF_2%	$CaCo_3$%	SiO_2%
E 14	1.0'	71.0	0.15	—
E 15	3.9'	50.7	0.15	—
E 16	2.6'	52.7	0.15	32.2
E 17	5.6'	29.5	Tr	—
H 645	4.6'*	50.10	1.38	20.08
H 646	0.8'*	20.16	1.17	36.12
H 647	1.4'*	32.60	1.17	35.36
H 648	1.8'*	57.91	1.26	22.00
H 649	0.8'*	36.50	1.61	27.80
H 650	1.3'*	81.36	0.99	10.16

* See note 3

EXPLANATION

- 80° — Vein showing dip (Dashed where projected)
- Shaft at surface
- Adit
- Prospect trench or pit
- Dump
- Drill hole
- Fluorite vein (Dashed where projected)

NOTE

(1) Topography and surface geology after C.S. Robinson DMA Docket 1209 and DMEA Docket. 2492

(2) Assumed base elevation 1000' higher than on original map to avoid negative elevations on sections.

(3) Sample Nos. H 645 to H 650 incl., corrected to give estimated vein widths.

FIGURE 1 —EMPIRE MINING AND ENGINEERING COMPANY, JAMESTOWN, BOULDER COUNTY, COLORADO
GEOLOGIC PLAN AND SECTIONS

By E.N. Harshman. Jan. 1953

50 0 50 100 Feet

DMEA 2492
Contract Idm-E401

EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 FLUORSPAR LODE
BOULDER COUNTY, COLORADO

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ILLUSTRATIONS

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1. Location map, Empire Mining and Engineering Company, Saddle No. 6 claim, Boulder County, Colorado 2
2. Exploration plan, Empire Mining and Engineering Company, Boulder County, Colorado 12

DMEA 2492
Contract Idm-E401

EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 FLUORSPAR LODE
BOULDER COUNTY, COLORADO

FINAL ENGINEERING REPORT

By

C. M. Harrer

SUMMARY AND INTRODUCTION

Empire Mining and Engineering Company, a Colorado corporation, originally applied for a production loan of $100,000.00 during July 1951, under Defense Minerals Administration docket 1209. This request was denied because of insufficient ore reserves.

The applicant later applied for a Defense Minerals Exploration Administration loan (DMEA 2492) of $25,000.00 to explore the fluorspar occurrences on the Orion - Saddle No. 6 claims.

The Defense Minerals Exploration Administration examination team in their report, dated May 28, 1952, recommended a total of 700 feet of exploratory diamond drilling, distributed in three holes, at an estimated cost of $5,500.00.

An exploration contract between the Defense Minerals Exploration Administration and the Empire Mining and Engineering Company of Boulder, Colo. (DMEA 2492, contract Idm-E401), authorized three diamond drill holes, NX or BX size, totaling 700 feet, and specified their locations and depths.

U.S. DEPARTMENT OF THE INTERIOR

March 3, 1849

Operator = Owner.
Empire Oil & Gas Co
Beaumont, Tex.

Drilling was contracted to George Marshall, of Idaho Springs, and work, started October 25, was completed December 30, 1952. A total of 730 feet of hole was completed, or 30 feet in excess of contract allowance.

The work conforms to the terms of the exploration project contract and was performed in an efficient manner on rough terrain.

The total allowed cost of the project was that specified in the contract, i.e., 700 feet of BX diamond drill hole at an over-all cost of $7.75 per foot or $5,425.00, Government participation--50 percent or $2,712.50.

Total fluorspar reserves developed by the project are estimated as 13,400 tons, assaying approximately 54.9 percent CaF_2, 0.7 percent $CaCO_3$, 23.0 percent SiO_2, 8.2 percent Fe, 17.2 percent Al_2O_3, and 2.5 percent S.

LOCATION AND OWNERSHIP

The standard unpatented mining claim Saddle No. 6 and the patented mining claim Orion, survey number 16111, which is enclosed within its boundaries, are in the Central (Jamestown) Mining District (fig. 1), in sec. 24, T. 2 N., R. 72 W., sixth principal meridian, Boulder County, Colo. These claims are owned by Empire Mining and Engineering Company, Inc., of Boulder, Colo., and are located about 17 miles northwest of Boulder on good roads which parallel Little James Creek. The claims are on the east slope of Bueno Mountain at an altitude of 7,500 feet.

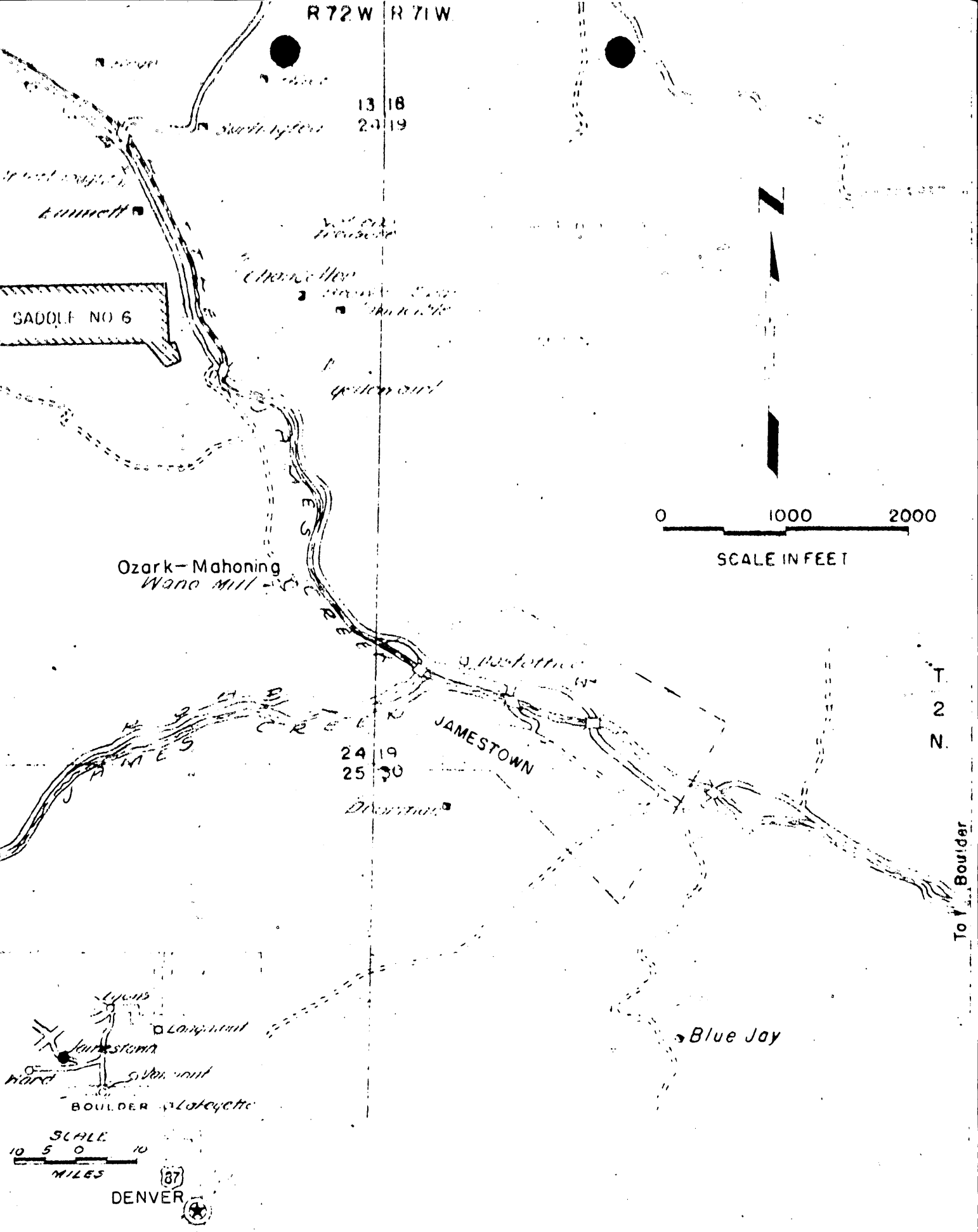


FIGURE 1 - LOCATION MAP, EMPIRE MINING AND ENGINEERING COMPANY, SADDLE NO. 6 CLAIM, BOULDER COUNTY, COLORADO - DMEA 2492

PROPERTY DEVELOPMENT

Development of the property is limited to several shallow trenches and open pits on promising vein segments, as shown on figure 2 and the illustration with the geological report. About 110 feet of crosscut and 40 feet of drift, which constitute the Orion adit, explore three narrow fluorspar veins to shallow depths. There is no mining or milling equipment or other facilities on the property.

DESCRIPTION OF THE DEPOSITS

Rock exposed on the Orion and Saddle No. 6 claims is an altered granodiorite cut by many small shear zones, brecciated in part. Purple fluorspar occurs in many short veins having an irregular surface pattern.

The fluorspar occurs as narrow veins in a wider shear structure. Fluorspar veinlets roughly parallel the main veins, and dips are very steep to vertical. The purple fluorspar occurs with quartz, fine-grained pyrite, and very minor amounts of galena, sphalerite, and chalcopyrite in the sheared and hydrothermally altered granodiorite.

The walls of the fluorspar veins stand well in small excavations; however, in general, the granodiorite is altered and brecciated and weak where influenced by fluorspar mineralization and hydrothermal alteration.

SAMPLING

Eight samples of accessible fluorspar exposures on the Orion - Saddle No. 6 claims were taken during the first examination by the Bureau of Mines engineer, September 13, 1951. They are described as follows:

Sample Data
Orion - Saddle No. 6 Claims

Sample	Vein Width feet	Ounces per ton Au	Ounces per ton Ag	Percent CaF_2	Percent $CaCO_3$	Percent SiO_2	Remarks
E-10	1.8	<0.005	1.6	64.9	0.5	15.0	Back of east drift, Orion adit
E-11	0.8	-	-	68.1	1.05	-	Quartz-CaF_2 vein near end of adit
E-12	1.0	-	-	55.6	0.35	-	Quartz-CaF_2 vein in west drift, Orion adit
E-13	1.0	-	-	70.6	1.05	-	Quartz-CaF_2 vein in Orion adit
E-14	1.1	-	-	71.0	0.15	-	Quartz-CaF_2 vein "C" in surface trench
E-15	3.9	<0.005	-	50.7	0.15	-	Quartz-CaF_2 vein "B" in surface trench, 5 feet below surface
E-16	2.6	-	-	52.7	0.15	32.2	Quartz-CaF_2 vein "A" in surface trench, 20 feet below surface
E-17	5.6	<0.005	-	29.5	Trace	-	Breccia, quartz, CaF_2 vein in trench

< Less than.

In addition, the significant fluorspar zones encountered in the drill holes were assayed and the table below gives data regarding them.

Diamond Drill-Hole Assay Data
Saddle No. 6 Claim

Sample	Drill hole	Feet of core assayed	Core interval	Calculated vein thickness	Percent CaF_2	Percent $CaCO_3$	Percent SiO_2
H-645	1	9.0	150.0 to 159.0	4.6	50.10	1.38	20.08
H-646	2	2.0	203.5 to 205.5	0.8	20.16	1.17	36.12
H-647	2	3.0	214.5 to 217.5	1.4	32.60	1.17	35.36
H-648	3	3.3	82.8 to 86.0	1.8	57.91	1.26	22.00
H-649	3	1.5	188.5 to 190.0	0.8	36.50	1.61	27.80
H-650	3	3.5	217.7 to 221.2	1.3	81.36	0.99	10.16

A composite of samples H-645 to H-650, inclusive, assayed 8.20 percent Fe, 17.22 percent Al_2O_3, and 2.47 percent S.

PRODUCTION AND RESERVES

The property is not in production. A small tonnage of fluorspar was reported to have been produced during World War I from surface cuts and the Orion adit. No recorded production statistics on the property are available.

Reserves on the Orion and Saddle No. 6 claims were estimated by the team making the original examination as 712 tons of inferred fluorspar ore, averaging 30 to 40 percent CaF_2.

WORK COMPLETED UNDER THE EXPLORATION CONTRACT

The Defense Minerals Exploration Administration contract Idm-E401 was dated September 8, 1952, and, on October 25, exploratory drilling by subcontract started on hole 2. It was completed on November 14, 1952, to a depth of 240 feet.

Hole 1 was started from the same drill site November 14 and it was completed to a depth of 260 feet on December 5, 1952.

December 6 and 8, 1952, were spent moving drill equipment to the site of hole 3, which was started on December 9 and completed to a depth of 230 feet on December 30, 1952. This completed exploratory drilling under the contract.

Data on drilling operations are shown in the following table:

Diamond Drill-Hole Data

Diamond drill hole	Bearing	Length, feet	Length allowed by contract, feet	Dip	Bit size	Percent: Over-all core recovery	Percent: Core recovery in ore	Ore zone intervals, feet
1	S. 60°-25' W.	260	240	-65°	BX	73	99	150.0 - 159.0
2	N. 85°-00' W.	240	240	-65°	BX	79	(100 (98	203.5 - 205.5 214.5 - 217.5
3	S. 78°-51' W.	230	220	-55°	BX	77	(97 (73 (83	82.8 - 86.0 188.5 - 190.0 217.7 - 221.2

DESCRIPTION OF DISCOVERY

Exploratory diamond drilling on the Orion - Saddle No. 6 claims resulted in a discovery of fluorspar ore in short narrow veins. Veins exposed in surface trenches and pits were drilled to determine any changes in the pattern of fluorspar mineralization and possible increases in vein widths at depth. The results of drilling indicate that fluorspar veins occur to depths of over 200 feet below the surface and may continue to even greater depths. At the presently operating Emmett mine, about 300 feet to the north, veins have been mined to a depth of 1,200 feet below surface.

Fluorspar reserves were developed on the three short veins designated "A", "B", and "C" (fig. 2).

Data on vein "A", which strikes about N. 10° W. and is farthest north, are included in one surface channel sample, E-16, over a vein width of 2.6 feet and samples H-645, H-647, and H-648 from the fluorspar zones crossed in diamond drill holes 1, 2, and 3, respectively. Average vein width for the three holes is 2.6 feet.

Measured reserves for vein "A" are estimated to extend 5 feet beyond exposures and total about 22 tons.

Indicated fluorspar reserves are estimated as occupying a block 2.6 feet wide by 140 feet long and 146 feet deep. On the basis of 12 cubic feet per ton, 4,400 tons of fluorspar ore, assaying about 49.7 percent CaF_2, 1.02 percent $CaCO_3$, 25.5 percent SiO_2, 8.2 percent Fe, 17.2 percent Al_2O_3, and 2.5 percent S, are developed.

Inferred ore is assumed to have the same horizontal dimensions and grade as the indicated ore but should extend 73 feet farther down the dip and is estimated as 2,200 tons.

Data on vein "B", which is southwest of vein "A" and in echelon, are included in one surface channel sample, E-15, over a vein width of 3.9 feet, and one core sample, H-649, from the fluorspar zone in diamond drill hole 3. The true vein width from drill hole data is 0.8 feet. The vein strikes N. 24° W. Average vein width is 2.3 feet.

Measured fluorspar reserves for vein "B" are projected 5 feet beyond exposures and total about 19 tons.

Because of the limited data, fluorspar in vein "B" other than measured ore is considered entirely as inferred ore. Inferred fluorspar reserves are estimated as occupying a block 2.3 feet wide by 85 feet long and 250 feet deep. On the basis of 12 cubic feet per ton, 4,000 tons of inferred fluorspar ore, assaying about 48.3 percent CaF_2, 0.4 percent $CaCO_3$, 27.8 percent SiO_2, 8.2 percent Fe, 17.2 percent Al_2O_3, and 2.5 percent S, are developed.

Data on vein "C", which strikes N. 45° E., are included in one surface channel sample, E-14, over a vein width of 1.0 feet, and one core sample, H-650, from diamond drill hole 3, over a true vein width of 1.3 feet. Average vein width is 1.1 feet.

Measured fluorspar reserves are estimated to extend 5 feet beyond exposures and total 9 tons. Because of limited data, fluorspar reserves other than measured ore are considered entirely as inferred ore.

Inferred reserves are estimated as occupying a block 1.1 feet wide by 100 feet long and 300 feet deep. On the basis of 12 cubic feet per ton, 2,700 tons of fluorspar, assaying about 76.9 percent CaF_2, 0.6 percent $CaCO_3$, 10.2 percent SiO_2, 8.2 percent Fe, 17.2 percent Al_2O_3, and 2.5 percent S, are developed.

Recapitulation of Fluorspar Reserves

	Feet		Short tons			Percent					
Vein	Average vein width	Vein length	Measured	Indicated	Inferred	CaF_2	$CaCO_3$	SiO_2	Fe	Al_2O_3	S
"A"	2.6	140	22	4,400	2,200	49.7	1.02	25.5	8.20	17.22	2.47
"B"	2.3	85	19	-	4,000	48.3	0.4	27.8	8.2	17.22	2.47
"C"	1.1	100	9	-	2,700	76.9	0.6	10.2	8.2	17.22	2.47
Adit			23	-	-	63.9	0.6	-	-	-	-
Totals			73	4,400	8,900						

Total reserves are estimated as 13,400 tons, assaying about 54.9 percent CaF_2, 0.7 percent $CaCO_3$, 23.0 percent SiO_2, 8.2 percent Fe, 17.2 percent Al_2O_3, and 2.5 percent S.

PRODUCTION FROM DISCOVERY

There has been no production from the discovery and none is contemplated at this time.

EXPENDITURES

Costs incurred by the exploration project between September 8, 1952, and December 30, 1952, when the project was completed, were approved for a total amount of $5,425.00. This amount is for 700 feet of BX diamond drilling at a cost of $7.75 per foot, Government participation--50 percent or $2,712.50.

EFFICIENCY OF OPERATIONS

Exploratory diamond drilling operations were in conformance with the terms of the contract and good drilling practice on rough terrain. Water was hauled to the drilling sites.

CONCLUSIONS

Three diamond drill holes, totaling 700 feet, were authorized and completed and six fluorspar zones were crossed. Operating diamond drill data are tabulated on the following page.

The project resulted in proving an estimated 13,400 tons of fluorspar ore, averaging 54.9 percent CaF_2, 0.7 percent $CaCO_3$, 23.0 percent SiO_2, 8.2 percent Fe, 17.2 percent Al_2O_3, and 2.5 percent S. Approximately 2,700 tons of the reserves, assaying 77 percent CaF_2, are included in vein "C" which is too narrow to mine without serious dilution.

Sufficient information is now developed in surface exposures and exploratory drilling on four veins to conclude that fluorspar extends in excess of 200 feet below the surface, with little change in vein widths and CaF_2 content.

The CaF_2 content of all veins, undiluted by mining, is above the minimum requirement of 40 percent CaF_2 demanded by local custom mills.

The results of drilling, while insufficient to block out measured ore, are sufficient to prove the veins very narrow. Veins "A", "B", and "C" (fig. 2) explored under the contract have widths of 2.6, 2.3, and 1.1 feet, respectively.

Diamond Drill Data

Diamond drill hole	Feet drilled	Feet under contract	Bearing	Dip	Cost per foot	Minimum feet per shift	Maximum feet per shift	Average feet per shift	Operating days	Percent over-all core recovery	Percent core recovery in ore	Ore zone limits
1	260	240	S. 60° 25' W.	-65°	$7.75	10	30	22.6	11.0	73	99+	150.0 - 159.0
2	240	240	N. 85° 00' W.	-65°	$7.75	5	30	15.5	15.5	79	(100 (98	203.5 - 205.5 214.5 - 217.5
3	230	220	S. 78° 51' W.	-55°	$7.75	18	27	19.1	12.0	77	(97 (73 (83	82.8 - 86.0 188.5 - 190.0 217.7 - 221.2

Two days were required for moving between drill sites.

Vein "D" was drilled by the operator at his own expense and has an estimated width of 2.4 feet. Approximately 6,300 tons of inferred fluorspar ore were developed, assaying about 69 percent CaF_2.

Because the veins are narrow and short, daily production would be small and mining operations result in considerable dilution. Operations will result in small, marginal, high-cost production.

There is a possibility that the upper portions of the veins could be mined if prices for crude CaF_2 increase.

RECOMMENDATIONS

No further exploration, with or without Government assistance, is recommended since sufficient data are now developed to prove fluorspar occurrence in short and narrow veins.

Government participation in a development or production loan is not recommended because of the limited, sporadic, and marginal character implied for any future operations.

On the premise that mining of narrow fluorspar veins may prove attractive with advancing prices for custom crude CaF_2, certification is recommended for any minerals mined or produced from the Orion - Saddle No. 6 claims within 10 years from the date of the contract, in accordance with article 6 of the contract.

amh

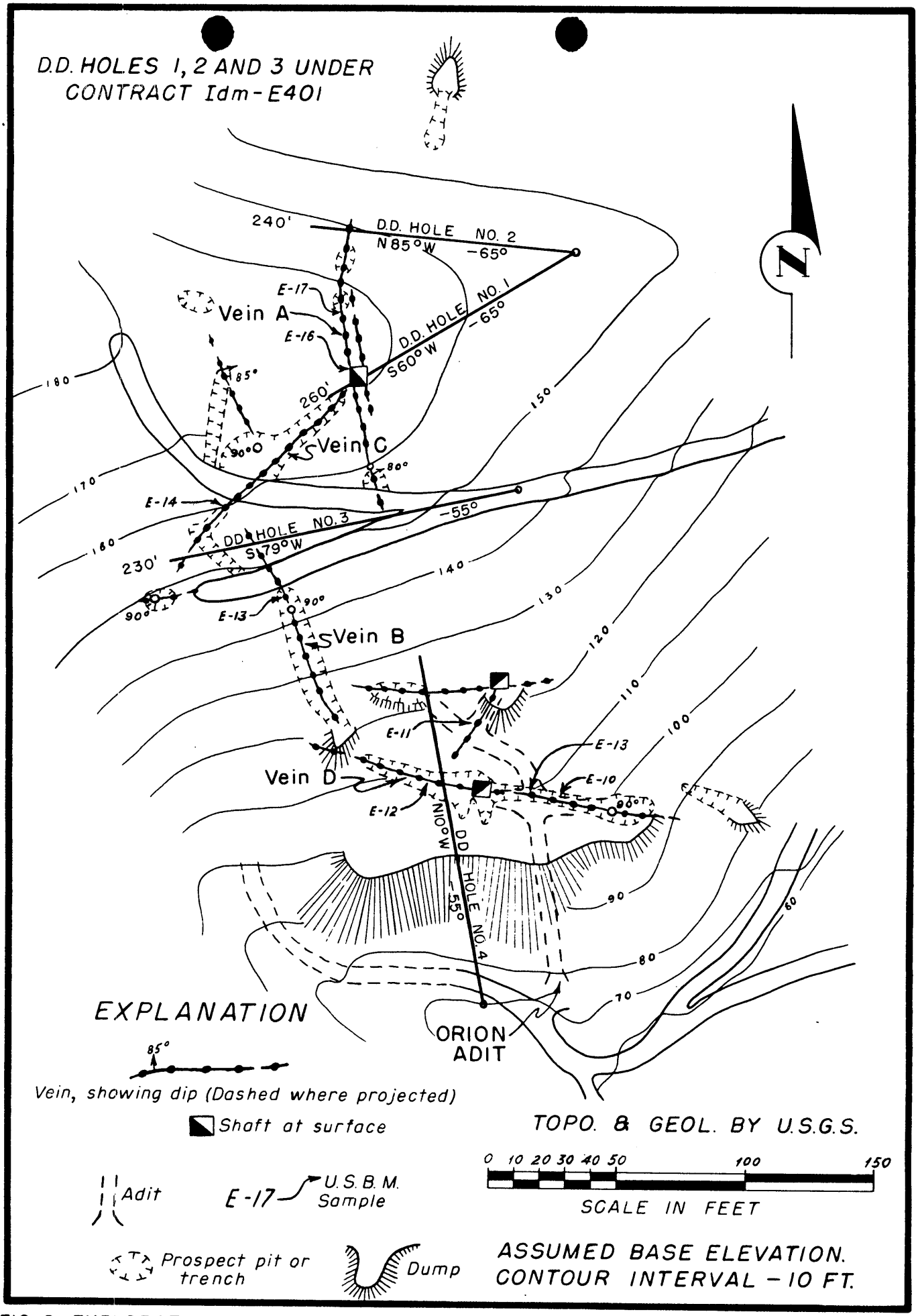


FIG. 2-EXPLORATION PLAN, EMPIRE MINING & ENG. CO., BOULDER CO., COLO. DMEA 2492

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

DEPARTMENT OF THE INTERIOR
Bureau of Mines Administration
RECEIVED
MAR 23 1953
Mining Division
Date Rec'd
MAR 18 1953
BUREAU OF MINES
Denver, Colorado

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
March 17, 1953

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 2492, Contract Idm-E401 (Fluorspar), Empire Mining and Engineering Company (Saddle No. 6 claim), Boulder County, Colorado - Final Engineering Report

Please find enclosed the original and eight copies of the subject report, by C. M. Harrer, and the original and five copies of a suggested form B certification.

Harrer estimates 13,400 tons of fluorspar reserves in three short veins, with an average grade of 54.9 percent CaF_2, 0.7 percent $CaCO_3$, 23.0 percent SiO_2, 8.2 percent Fe, 17.2 percent Al_2O_3, and 2.5 percent S.

I would be inclined to add that, under present economical conditions, the reserves cannot be considered as mineable because of the extremely narrow veins in which they occur. It is doubtful if the deposit will ever support a commercial operation. However, in the event production results within ten years, the Government is entitled to the prescribed royalty.

W. M. Traver

W. M. Traver

enclosures

WMT/amh

cc: 8
E401
DMEA Chron.

Operations
Final Rpt

Reviewed by
DMEA OPERATING COMMITTEE

(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

FINAL ENGINEERING REPORT

DMEA 2492, Exploration Project Contract Idm-E401

Empire Mining and Engineering Company, Contractor

Saddle No. 6 Fluorspar Lode

Boulder County, Colorado

Fluorspar

C. M. Harrer, Mining Engineer
Bureau of Mines

March 12, 1953

CERTIFICATION BY THE UNITED STATES OF AMERICA
OF A DISCOVERY OR DEVELOPMENT UNDER
AN EXPLORATION PROJECT CONTRACT

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 23 1953

FORM B

To:[1/] Empire Mining and Engineering Company, Inc., a Colorado corporation, P. O. Box 763, Boulder, Colorado

Pursuant to the provisions of Exploration Project Contract No. Idm-E401, dated September 8, 1952, (Docket No. DMEA 2492), hereinafter called the "contract" between you and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien thereon and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made, has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows:

> Fluorspar reserves were developed in three short veins "A", "B", and "C", shown on a plan map accompanying the final project report. They are estimated as 73 tons of measured, 4,400 tons of indicated, and 8,900 tons of inferred ore--or a total of 13,400 tons--assaying about 54.9 percent CaF_2, 0.7 percent $CaCO_3$, 23.0 percent SiO_2, 8.2 percent Fe, 17.2 percent Al_2O_3, and 2.5 percent S.

Dated: March 12, 1953.

THE UNITED STATES OF AMERICA

By _____
Administrator, Defense Minerals
Exploration Administration

1/ Insert full name of operator as it appears in the Exploration Project Contract.

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

224 New Customhouse
Denver 2, Colorado

March 6, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 12 1953

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, Field Team, Region IV

Subject: Final Form MF-104, DMA Docket 2492, Contract Idm-E401, (Fluorspar), Empire Mining and Engineering Company, Inc., Boulder County, Colorado

Enclosed are two copies of the Operator's Final Progress Report MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report for the month of December 1952.

A the work was performed under contract prepared on Form MF-200A, there is no jointly-owned property in which the Government owns an equity.

Final payment was made in conformance with the final Audit Report by the Contract Administration and Audit Division dated March 4, 1953.

Copies of Engineer's Final Report, Geologist's Final Report, and Operator's Final Report will be transmitted at a later date after all have been submitted.

W. H. King

W. H. King

Enclosures

DMEA -2492

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

March 6, 1953

Memorandum

To: Chairman of the Operating Committee

From: Executive Officer, DMEA, Region IV

Subject: Docket No. DMEA 2492-Contract No. Idm-E401 - Empire Mining & Engineering Co.

Reference is made to your letter dated March 2, 1953 regarding completion of contract Idm-E401.

The December Monthly Operator's Report and Voucher will be forwarded to your office as soon as it has been processed. The Operator's Final Report and Final Field Team Report with our recommendations for certification of this project will be forwarded to your office as soon as they have been completed.

All the above could not be completed until we received a Final Report of Review by the Contract Administration and Audit Division,

W. H. King

W. H. King

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

COPY COPY

224 New Customhouse
Denver 2, Colorado

March 6, 1953

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, Field Team, Region IV

Subject: Final Form MF-104, DMA Docket 2492, Contract Idm-E401 (Fluorspar), Empire Mining and Engineering Company, Inc., Boulder County, Colorado

Enclosed are two copies of the Operator's Final Progress Report MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report for the month of December 1952.

A the work was performed under contract prepared on Form MF-200A, ther is no jointly-owned property in which the Government owns an equity.

Final payment was made in conformance with the final Audit Report by the Contract Administration and Audit Division dated March 4, 1953.

Copies of Engineer's Final Report, Geologist's Final Report, and Operator's Final Report will be transmitted at a later date after all have been submitted.

/s/ W. H. King
W. H. King

Enclosures

FILE COPY
SURNAME:

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

600

MAR 2 1953

Mr. W. H. King
Executive Officer, DMEA
Field Team, Region IV
Bureau of Mines
224 New Customhouse Building
Denver 2, Colorado

Subject: Docket No. DMEA-2492 - Fluorspar
Empire Mining & Engineering Co.
Brion and Saddle #6 Claims
Boulder County, Colorado
Contract No. Idm-2401

BW

Dear Mr. King:

Reference is made to the subject contract dated September 8th, 1952, to be brought to completion by January 8th, 1953. Receipt is acknowledged of the Narrative Report of the Operator, dated December 1, 1952, and the November Operator's Report and Voucher.

The memorandum from C. M. Harrer to the Chief, Mineral Resources Branch, Mining Division, Region IV, dated January 7, 1953, states in the second paragraph:

"The subject project was completed at the time of inspection (1-5-52) and the total progress was in excess of contract stipulations."

This office will be pleased to receive the December Monthly Operator's Report and Voucher, the Operator's Final Report, and the Final Field Team Report together with your recommendations as to the certification of this project.

Sincerely yours,

S.N. 3/2/53

George C. Selfridge

(WB)

Chairman, Operating Committee

Approved:

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

D. M. Lemmon (WB)
Member, Geological Survey

LGHouk:gad 2/27/53
Copy to: Admr. R. File
Docket File
Operating Committee
Mr. Davis, 3519
Mr. Norton, G-232 GSA Bldg.
Mr. Houk

FILE COPY
SURNAME:

Houk

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

600

February 27, 1953

Memorandum

To: Mr. C. O. Mittendorf

From: Lawrence G. Houk

Subject: Completed projects, certification likely.

Reference is made to your memorandum of February 26th listing the following four projects:

Docket No.	Contract No.	Name of Operator
2492	401	Empire Mining & Engineering Co.
2416	328	Yancey Mica Mines, Inc.
1198	194	The Hitchcock Corp.
2377	311	Piedmont Miners

Empire Mining & Engineering Co. The January Monthly Report of Region IV indicates this project will be certified for discovery. This Division has written Region IV, letter dated (3/2/53) requesting the Final Field Team and Final Operator's Reports, and formal recommendations as to certification. This is a Region IV delegation.

Yancey Mica Mines, Inc. (Jess Autrey Mine) Amendment No. 2, dated 1-15-53, is a supplemental exploration amendment to do additional work on this project beyond what was contemplated in the original contract. Amendment No. 2 was transmitted to the field 2-20-53.

The Hitchcock Corp. According to a letter, dated January 9, 1953, from the Executive Officer to the Operating Committee, the Executive Officer will send termination forms by mutual agreement to the Operator upon receipt of the Operator's Final Voucher.

Piedmont Miners (Self Mine) Amendment No. 2, dated 2-4-53, gives the Operators 15 months to complete the project. The time will expire in August 1953. The Operators have been unable to hold the heavy ground and are attempting to lower the water table in the area of the shafts by deepening the open pit and continuous pumping.

LGHouk:gad 2/27/53

Copy to: Admr. R. File
Docket file
Mr. Houk

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

[illegible] New Customhouse
Denver 2, Colorado

February 17, 1953

Memorandum

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 12 1953

To: T. A. Christensen

From: Executive Officer, Field Team, Region IV

Subject: DMEA Docket 2492, Contract Idm-2401 (Fluorspar) Empire Mining and Engineering Company, Inc., Boulder County, Colo. Operator's Monthly Progress Report for the period of December, 1952 - Final Report

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 50 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

This report will constitute final payment under the contract.

Remarks:

Date of Report - January 2, 1953
Date Received in Field Office - January 5, 1953
Date Received in Region Office - January 8, 1953
Date Processed for Payment - February 16, 1953

Report was held up pending receipt of Operator's Final Report which was received in this office February 16, 1953.

W. H. King
W. H. King

Enclosures

RDB:oc
cc: Contract
Secretary to the Oper. Comm. (2)
WMTraver
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
January 7, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 12 1953

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 2492, Contract Idm-B401 (Fluorspar), Empire Mining and Engineering Company, Inc., Jamestown, Boulder County, Colorado - Progress report for December 1952

Please find enclosed the original and four copies of the above progress report--forms MF-104 and MF-104A, with narrative--and the original and six copies of C. M. Harrer's memorandum covering inspection of the surface core drilling progress and approval of the contractor's claim.

The report shows completion of the contract prepared on a short form MF-200 (A) calling for 700 feet of BX size drilling at a unit price of $7.75 per foot.

U. S. Geological Survey's inspection in the field work and of the cores which are stored at Building 701, Denver Federal Center, has been requested. When their work is completed, a final report should be requested from the operator and the participating agencies. In the meantime, it is presumed payment of this final voucher will be withheld although that does not seem necessary as the work has been performed in a satisfactory manner and has Branch approval.

Payment is approved of $1,069.50, or 50 percent of the total $2,139.00 claimed by the contractor.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures
WMT/amh
cc: 4
B401
DMEA Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
January 7, 1953

Memorandum

To: Chief, Mineral Resources Branch, Mining Division, Region IV

From: C. M. Harrer

Subject: DMEA 2492, Contract Idm-8401 (Fluorspar), Empire Mining and Engineering Company, Inc., Jamestown, Boulder County, Colorado - Progress report for December 1952

The project diamond drilling sites on the Saddle No. 6 claim were visited by C. M. Harrer and Carl Belser on January 5, 1952. Drilling was discussed with George Marshall, contract driller, in the absence of C. E. Kahn, president of Empire Mining and Engineering Company, Inc.

The subject project was completed at the time of inspection and total progress was in excess of contract stipulations.

Diamond drill hole 1, started on November 14, was completed to a total depth of 260 feet on December 5, 1952, as verified by the driller's daily log and examination of the BX core. The operator has reported only the 240 feet of this hole mentioned in the contract.

In addition, equipment was moved to the site of diamond drill hole 3 during December 6-8, 1952, and drilling started on December 9. Drill hole 3 was completed to a depth of 230 feet on December 30, 1952, as verified by the driller's daily log and examination of the BX core. The operator has reported only the 220 feet stipulated under the contract.

The total advance of 276 feet, reported by the operator in his forms MF-104 and MF-104A to the completion of the project on December 30, 1952, is approved for payment at the contract stipulated rate of $7.75 per foot.

Total expenditures of $2,139.99 by Empire Mining and Engineering Company, Inc., for the month of December 1952 and the completion of the project are approved for payment. U. S. Government participation of 50 percent will be $1,069.50.

C. M. Harrer
C. M. Harrer
Mining Engineer

CMH/amh
cc: 6, 8401, DMEA Chron.

Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S MONTHLY REPORT AND VOUCHER

Department of the Interior
Defense Minerals Administration
RECEIVED
MAR 12 1953

Month of November, 1952 Docket No. DMEA 2490 Contract No. [illegible]
Operator's Name Empire Mining & Engineering Co., Inc. Minerals Fluorspar
Address Box 763, Boulder, Colorado.
Contract Amount, $5425.00 Government Participation: 50 % Amount, $2712.50

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) ~~Independent~~ Short Form Contracts:						
Drilling	2139.00	3286.00	5425.00			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	2139.00	3286.00	5425.00	2139.00	3286.00	5425.00

I certify that the above bill is correct and just and that payment therefor has not been received.

Date Jan. 2, 1953 Payee Empire Mining & Engineering Co.

Per [signature] Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$1069.50

Signature [signature]
(Authorized Certifying Officer)

Date 3/5/53 Voucher No. DMA 53-104
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E401 in accordance with the terms of the contract.

Signature C. M. Harrison $1069.50 Title Mining Engineer Date Jan. 6, 1953

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: R.D.B.

Signature W. H. King Title Executive Officer Date FEB 17 1953

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 12 1953

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of December 1952 Docket No. DMEA 2492 Contract No. Idm-[illegible]401
Operator's Name Empire Mining & Engineering Co., Inc. Minerals Fluorspar
Address Box 763, Boulder, Colorado.

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	Ft.	$2139.00	276	$5425.00	700	$7.75	700	$7.75
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		$2139.00		$5425.00				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		$2139.00		$5425.00				$5425.00

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

REMARKS:

Date Jan. 2 1953 Operator Empire Mining & Engrg. Co.

Per [signature] Title President

→ NOTE.—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.

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 88-38475

EMECO

Jan. 2 1953

Exploration Project Contract No. Idm-E401
Docket No. DMEA 2492.

Narrative Report No. 2.

Under above contract DDH 3 was completed Dec. 30 1952 being the final hole and drilling of 700ft. under this contract. DDH 1 & 2 were drilled at locations shown on map C-101-1 Oct. 20 1952, and at angles of 65 degrees from the horizontal. DDH 3 location was moved 45 feet east of point shown on map C-101-1, Oct. 20 1952, along same bearing as origionally shown, the angle being 55 degrees from the horizontal. All drill holes were left in condition to drill deeper if thought advisable.

The following logs are the drillers logs as soon as the geologist report is received after examination of the cores, exact findings will be plotted on map C-101-1 revised, as log sections showing the identified strata which will be correlated on the map of the area with reference to location of fluorspar veins as shown by logs. Upon completion of the revised map five copies will be forwarded to Mr. Traver's office as an attachment to this report.

Log DDH 1 (con't.)

184'	to	197'	Conglomerate w/ spar seams
197		202	Spar vein
202		205	" seams
205		248	Conglomerate w/ spar crystals
248		260	" " seams.

Log DDH 3

38' 47'		59' 60'	Conglomerate w/ spar seams at these points
60		78	" " " "
82		86	4' spar vein
87		147	Conglomerate w/ spar seams
147		180	" w/ spar crystal in white rock could be spar.
180		184	Seams of spar & pyrite
184		189	" " "
189		190	1' spar vein
195		197	2' " "
		202	6" " "

Jan. [illegible] 1973
Narrative Report No. 2

[illegible] No. Idm-401
Docket No. [illegible] 2492.

DH 3 Cont'd.

	205'	4" Spar vein
208'	212	Conglomerate w/ spar crystals
217	[illegible]	6" Spar vein
223	227	Spar seams w/ pyrite
233	223	" "
220	233	Rock.

[illegible] Mining & Milling Co.

By: [illegible] Jr.
[illegible] Jr. Engineer

COPY

CHAS. E. ZAHN, JR.
PRESIDENT
WARREN H. EDWARDS
VICE PRES.-MGR. OF SALES

C. E. ZAHN, SR.
CHAIRMAN OF THE BOARD

FANCHEON M. ZAHN
SECRETARY
CLARICE M. THRUSH
TREASURER

Empire
MINING AND ENGINEERING CO., INC.
P. O. BOX 763 BOULDER, COLORADO

Feb. 16 1953

Exploration Contract No. Idm-E401
Docket No. DMEA 2492

Final Report

Operations were started Oct. 25 1952 and completed Dec. 30 1952 under the above contract. Three BX core holes were drilled on the Empire Mining & Engineering Co. Saddle Lode No.6 claim near Jamestown in the Central Mining District. The cores were delivered to W. M. Traver, Chief Mineral Resources Branch Mining Division, Region IV, who furnished sacked splits of six samples to the operator for assaying.

There is attached to this report EMECO map C-101-1 Rev. showing in detail all information developed from the core drilling operations including the information developed by the USBM Field Team in their initial surface investigation of this property. Although not a part of this contract the operator drilled DDH-4 the results from hole are neccessarily important to the overall evaluation of this project, the information developed from this hole is shown on the map referred to above.

The overall results obtained from compilation of data as shown by the core holes and surface investigation would seem to indicate that there is some 365 feet of vein matter at a depth 200 feet below surface at No. 6 shaft, varing in width from 3.73 to 1.27 feet which would result in an indicated tonnage of some 13,000 tons of CaF_2 with an average CaF_2 of 66%. The Operator wishes to have further study made of these data by a competent consulting engineer for recomendations as to procedure on further exploration or development. Upon the completion of this report and receipt of recommendations contained therein the operator will present the findings to the US Bureau of Mines for their suggestions.

The Empire Mining & Engineering Co. is very grateful to the U S Bureau of Mines for their kind help and participation in this exploratory project.

C. E. Zahn, Jr. Engineer

2114 Curtis Street

TELEPHONE MAin 1852

CHEMISTS • ASSAYERS • ENGINEERS

DENVER 2, COLO.

Folio 5992-5

Date Feb. 6, 1953.

Super Mining & Engineering Co.,
Box 763,
Boulder, Colo.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
		Calcium Fluoride (CaF_2)			Calcium Carbonate ($CaCO_3$)			Silica
B-645		50.10%			1.35%			20.08%
B-646		20.16%			1.17%			50.12%
B-647		32.00%			1.17%			39.36%
B-648		57.91%			1.26%			22.00%
B-649		36.50%			1.01%			27.80%
B-650		61.30%			0.99%			10.16%
B-105		73.75%			1.97%			12.84%
		Iron (Fe)	Alumina (Al_2O_3)		Sulfur (S)			
B-105		3.76%	3.8%		3.17%			
Composite B-645 to B-650 inclusive		8.25%	17.2%		2.47%			

Gold at_____per ounce Copper at_____per unit

Silver at_____per ounce Zinc at_____per unit

Lead at_____per unit _____

Charge $ 51.00

CHARLES O. PARKER & CO.
CHEMISTS, ASSAYERS and ENGINEERS

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 22 1953

224 New Customhouse
Denver 2, Colorado

January 20, 1953

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, Field Team, Region IV

Subject: Form MF-104, DMEA Docket 2492, Contract Idm-E401 (Fluorspar) Empire Mining and Engineering Company, Inc., Boulder County, Colorado

Enclosed are two copies of the Operator's Monthly Progress Report MF-104 and 104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data for the month of October 25 to November 30, 1952, pertaining to DMEA Docket 2492, Contract Idm-E401, Empire Mining and Engineering Company, Inc.

W. H. King

W. H. King

Enclosures

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 22 1953

224 New Customhouse
Denver 2, Colorado

January 12, 1953

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2492, Contract Idm-E401 (Fluorspar), Empire Mining and Engineering Company, Inc., Boulder County, Colorado - Operator's Monthly Progress Report for the period October 25 to November 30, 1952

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 50 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

Remarks:	Date of Report	December 1, 1952
	Date Received in Colo. Branch Office	December 15, 1952
	Date Received in Region IV Office	January 8, 1953
	Date Processed for Payment	January 9, 1953

W. H. King
W. H. King

Enclosures
FPB:es

cc: Sec. to the Operating Committee (2)
Contract
Traver
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 23 1953

Building 20
Denver Federal Center
Denver 14, Colorado
January 7, 1953

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMMA 2492, Contract Idm-B401 (Fluorspar), Empire Mining and Engineering Company, Inc., Jamestown, Boulder County, Colorado - Progress report for October 25 to November 30, 1952

Please find enclosed the original and four copies of the subject progress report--forms MF-104 and MF-104A, with narrative--and the original and six copies of C. M. Harrer's memorandum covering inspection and approval of the contractor's report on surface core drilling operations, totaling 424 feet. The contract is on short form MF-200 (A) allowing 700 feet of drilling BX size at $7.75 per foot.

Payment is approved of $1,643.00, or 50 percent of the total $3,286.00 claimed by the contractor.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

WMT/amh

cc: 4
B401
DMMA Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
January 7, 1953

Memorandum

To: Chief, Mineral Resources Branch, Mining Division, Region IV

From: C. M. Harrer

Subject: DMEA 2492, Contract Idm-2401 (Fluorspar), Empire Mining and Engineering Company, Inc., Jamestown, Boulder County, Colorado - Progress report for October 25 to November 30, 1952

The project diamond drilling sites on the Saddle No. 6 claim were visited by C. M. Harrer and Carl Belser on January 5, 1952. Drilling was discussed with George Marshall, contract driller, in the absence of C. E. Zahn, president of Empire Mining and Engineering Company, Inc.

The subject project was completed at the time of inspection and total progress was in excess of contract stipulations.

Diamond drilling started with hole 2 on October 25, 1952. It was completed to a depth of 240 feet on November 14, as verified by inspection of the BX diamond drill core and the driller's daily log.

In addition, diamond drill hole 1 was started November 14, and advanced to 184 feet at the end of November 1952, as reported by the operator. This was verified by the driller's daily log and examination of the BX core.

The operator's total advance of 424 feet from the start of the project to the end of November 1952 is approved for payment at the contract stipulated cost of $7.75 per foot.

Total expenditures of $3,286.00 by Empire Mining and Engineering Company, Inc., for the period October 25 through November 30, 1952, is approved for payment. U. S. Government participation of 50 percent will be $1,643.00.

C. M. Harrer

C. M. Harrer
Mining Engineer

CMH/amh
cc: 6, 2401, DMEA Chron.

Form MF-104 (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.3.
Approval expires 1-30-53.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 22 1953

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of November, 1952 Docket No. DMEA 52-92 Contract No. 10n-1401
Operator's Name Empire Mining & Engineering Co., Inc. Minerals Manganese
Address Box 763, Boulder, Colorado
Contract Amount, $3286.00 Government Participation: 50 % Amount, $2710.50

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent / Short Form Contracts:						
Drilling 6000	3286.00	none	3286.00			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	3286.00	none	3286.00	3286.00	none	3286.00

I certify that the above bill is correct and just and that payment therefor has not been received.

Date Dec. 1, 1952 *Payee Empire Mining & Engineering Co.

Per [signature] Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

→ NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$1643.00

Signature [signature]
(Authorized Certifying Officer)

Date 1/14/53 Vou. No. DMA 53-81

(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E401 in accordance with the terms of the contract.

Signature C. M. Harper Title Mining Engineer Date Jan. 6, 1953

$1643.00

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: R.D.B.

Signature W. H. King Title Executive Officer Date JAN 12 1953

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

U. S. GOVERNMENT PRINTING OFFICE 205675

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 23 1953

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of Nov. 1952 Docket No. DMEA 2492 Contract No. Idm-2401

Operator's Name Empire Mining & Engineering Co., Inc. Minerals

Address Box 763, Boulder, Colorado Fluorspar

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	Ft.	3286.00	424	$3286.00	424	$7.75	700	$7.75
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		$3286.00	424	$3286.00				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		$3286.00		$3286.00				$5425.00

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

Date Dec. 1 1952 Operator Empire Mining & Engrg. Co.

Per [signature] Title President

NOTE.—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.

REMARKS:

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

U. S. GOVERNMENT PRINTING OFFICE 205676

EMECO

DIST.	
EXAMINATION	
DIST. CLERK	
PERSONNEL	
FILES	

Colorado Branch

Date Rec'd
DEC 1 2 1952
BUREAU OF MINES
Denver, Colorado

December 1 1952

Exploration Project Contract No. Idm-E401
Docket No. DMEA 2492.

Narrative Report No. 1.

Under above contract operations were started Oct. 25 1952 on DDH2 and completed Nov. 14 1952. DDH1 was completed to 184 feet on Dec. 1 1952.

Log DDH1

55'	- 60'	Spar seams
	87	" "
107	- 111	" "
	113'6"	Spar seam
150	- 184	Conglomerate w/ spar seams

Log DDH2

	54'	Small spar streak
60	- 65	Spar seams
103	- 105	Spar
105	- 108	" seams
116	- 125	" "
135	- 141	" "
148	- 176	" "
180	- 215	" "
215	- 218	Spar
218	- 220	" "
230	- 233	" "
239	- 240	" "

After a cursory examination of the log of DDH2 there would seem to be no evidence of sufficient amount of ore to be commercially profitable although little can be determined until all holes are completed and logs plotted for correlation and further study.

Upon completion of DDH3 the various logs will be plotted on map C-101-1 prints of the completed map will be attached to narrative report No. 2.

No unusal conditions have been encountered during the drilling operations after determining the proper diamond bit for the ground

Dec. 1 1952
Narrative Report No. 1

EPC No. Idm-E401
Docket No. DMEA 2492.

characteristics. A Turco bit with diamonds set in hard matrix appears to give the best results, 100 to 125 feet is the average for this bit without damage. The drilling has been averaging approximately 25 feet per eight hour day.

Empire Mining & Engineering Co.

By: C.E. Zahn, Jr.
C.E. Zahn, Jr. Engineer

COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

November 10, 1952

Memorandum

DMEA-2492 - Fluorspar
Empire Mining & Engr. Co.
Boulder County, Colorado

To: Operating Committee

From: Lawrence G. Houk, Chief, Nonmetallic Minerals Division

Subject: Review of Empire Mining and Engineering Company, DMEA-2492, Contract Idm-E401, Region IV Delegation.

Recommendation:

The Nonmetallic Minerals Division concurs with Region IV in the method of exploration for this project and in the funds proposed for doing the work.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

October 31, 1952

Memorandum

To: Mr. Lawrence G. Houk

From: L. F. Hearne

Docket No. DMEA-2492 - Fluorspar
Empire Mining & Engr. Co.
Orion and Saddle #6 Claims
Boulder County, Colorado
Contract No. Idm-E401

Subject: Comments on Region IV Contract Idm-E401

Recommendation: Concurrence

The Jamestown District has mined and milled about 300,000 tons of fluorspar since 1944, an important tonnage for a small area. The Orion and Saddle No. 6 Claims border on the Emmett Claim which apparently has been one of the district's best producers and is still working at 1,200 feet. However, the Emmett is in a brecciated zone in granodiorite, whereas the subject mine may be on the outer edge of this brecciation. The possibilities indicate a conservation (conservative?) preliminary exploration program in the absence of more detailed information. According to the field report the three drill holes, calculated to explore the vein at 200 feet are located near brecciated conditions at the surface, which should be favorable to continuation of the mineralization at depth if an anology can be drawn with the Emmett Claim. Assuming that all three holes cut ore averaging 3 feet wide at 200 ft. $\frac{200 \times 200 \times 3}{13}$ = 9,231 tons of probable ore with 7.40 x 9,231 = $68,309.40 at the near-by Ozark Mahoning Mill if it averaged 48% - 5% calcium Fluoride might be indicated at an exploration cost of $5,425.00, or $0.59 per ton.

Resume:

USBM & USGS reports dated May 28, 1952

USBM report transmitted to Denver June 2, 1952

USGS report transmitted to Denver June 4, 1952

Contract and final report to Washington Oct. 17, 1952

Contract and final report received in Washington Oct. 20, 1952

Contract and final report reviewed by Operating Committee Oct. 24, 1952.

Laurance F. Hearne

Laurance F. Hearne

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

224 New Customhouse
Denver 2, Colorado

October 17, 1952

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2492, (Fluorspar) Empire Mining & Engineering Co., Boulder County, Colorado

Enclosed are four copies of the ~~final~~ report on DMEA-2492.

The contract has been signed and is in effect.

John F. Shaw for
W. H. King

A. H. Koschmann

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
OCT 2 1952

Mining Division
Region IV

June 2, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2492, Empire Mining and Engineering Co. (Fluorspar) Boulder County, Colorado

Enclosed are nine copies of the engineering report on the Saddle #6 claim by F. D. Everett of the Bureau of Mines.

The original exploration program set forth by the applicant has been revised to consist of drilling three diamond drill holes to explore the vein. The estimated cost of the revised project is $5,500.

We concur with the recommendation of the examining engineers that the revised project be approved.

W. H. King

W. H. King

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 20 1952

Reviewed by
DMEA OPERATING COMMITTEE

10-24-52
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Mining Division
Denver Field

MAY 1952

BUREAU OF MINES
Denver, Colorado

Building 20
Denver Federal Center
Denver 14, Colorado
May 29, 1952

Memorandum

To: Acting Chief, Mining Division, Region IV

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 2492, Empire Mining and Engineering Company (Saddle No. 6 fluorspar lode), Boulder County, Colorado

Please find enclosed the required number of copies of the "Summary, Conclusions, and Recommendations" on the above docket, by F. D. Everett and C. S. Robinson, and of Everett's engineering report. The brochure supplied by the Region IV Field Team with their instructions to make a field examination is also returned herewith.

The application is a substitution for an original direct loan request, Defense Minerals Administration docket 1209, which was denied due to insufficient ore reserves.

In the opinion of the examining team, this request for a $25,000.00 loan to drive a 650-foot exploratory adit at a depth of 200 feet below surface outcrops on the Saddle No. 6 claim is not justified. With the applicants' approval, they have recommended 700 feet of surface core drilling with a service road, to cost about $5,500.00.

Everett considers the drilling will serve to explore the narrow, irregular fluorspar veins and that the entire 700 feet may not be necessary if results are not encouraging. I concur.

Scott W Hagerty
for W. M. Traver, Jr.

enclosures

WMT/dd
cc 8
DMEA 2492
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
200 New Customhouse
Denver 2, Colo.

June 4, 1952

Memorandum

To : DMEA Field Team, Region IV

From : A. H. Koschmann

Subject: DMEA Docket 2492, Empire Mining and Engineering Company, Boulder County, Colorado.

Attached are 8 copies of the geologic report by C. S. Robinson covering DMEA Docket 2492, Empire Mining and Engineering Company, Boulder County, Colorado.

The applicant has applied for a loan of $25,000 to explore fluorspar veins on subject property by means of a 650-foot adit. The veins are narrow, short and widely spaced. There is little probability that the veins increase in size in depth or that the grade will improve and they do not warrant the exploration program proposed by the applicant. Instead, Robinson recommends that the veins be explored by three diamond drill holes, the maximum footage not to exceed 700 feet.

I concur with this recommendation.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 2492, Empire Mining and Engineering Company

Saddle No. 6 Fluorspar Lode

Boulder County, Colorado

On-Site Exam Rpt

Fluorspar

F. D. Everett, Mining Engineer
Bureau of Mines

C. S. Robinson, Geologist
U. S. Geological Survey

May 28, 1952

10-24-52

Owner.
C. E. Zahn, Jr.

UNITED
DEPARTMENT OF
OFFICE OF MINERA

DMEA 2492

EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 FLUORSPAR LODE
BOULDER COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By F. D. Everett
Mining Engineer
Bureau of Mines

and

C. S. Robinson
Geologist
U. S. Geological Survey

EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 FLUORSPAR LODE
BOULDER COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By F. D. Everett and C. S. Robinson

The application by the Empire Mining and Leasing Company requested a $25,000.00 exploration loan to drive a 650-foot adit to explore the projected fluorspar outcrops 200 feet below the surface on the Saddle No. 6 claim located in the Central Mining District, Boulder County, Colo. The proposal was later modified by C. E. Zahn, president of the company, and now consists of diamond drilling from the surface. Three holes drilled with BX-size (core diameter 1-5/8 inches, hole 2-3/8 inches) or larger are suggested to be drilled at 65° from the horizontal in order to intersect the projected vein at the same depth as in the originally proposed adit.

The cost of drilling three holes for an aggregate length of 700 feet, bulldozing to prepare drill sites and service the road, and supervision is estimated at $5,500.00. The participation by the Government would be 50 percent, or $2,750.00.

The ore occurs in narrow and short veins which appear to follow no pattern in an altered and sheared granodiorite. The veins are composed primarily of fluorite and quartz with minor amounts of galena, sphalerite, pyrite, and chalcopyrite. The Saddle No. 6 claim is estimated to have 712 tons of inferred

fluorspar ore averaging between 30 and 40 percent CaF_2. Sorting could raise the grade of these reserves to over 50 percent CaF_2, but would materially reduce the total tonnage. The ore could probably be sold to the Ozark-Mahoning Company, who has a mill within a mile of the property, or to the General Chemical Division of the Allied Chemical and Dye Corporation, who has a mill at Valmont, about 17 miles distant.

A diamond drilling project, similar to one herein suggested, is recommended for approval.

bam

Empire Mining and Engineering Company, Boulder County, Colorado

DMEA DOCKET 2492

Geologic Report

By C. S. Robinson
U. S. Geological Survey

EMPIRE MINING AND ENGINEERING

COMPANY, BOULDER COUNTY, COLORADO

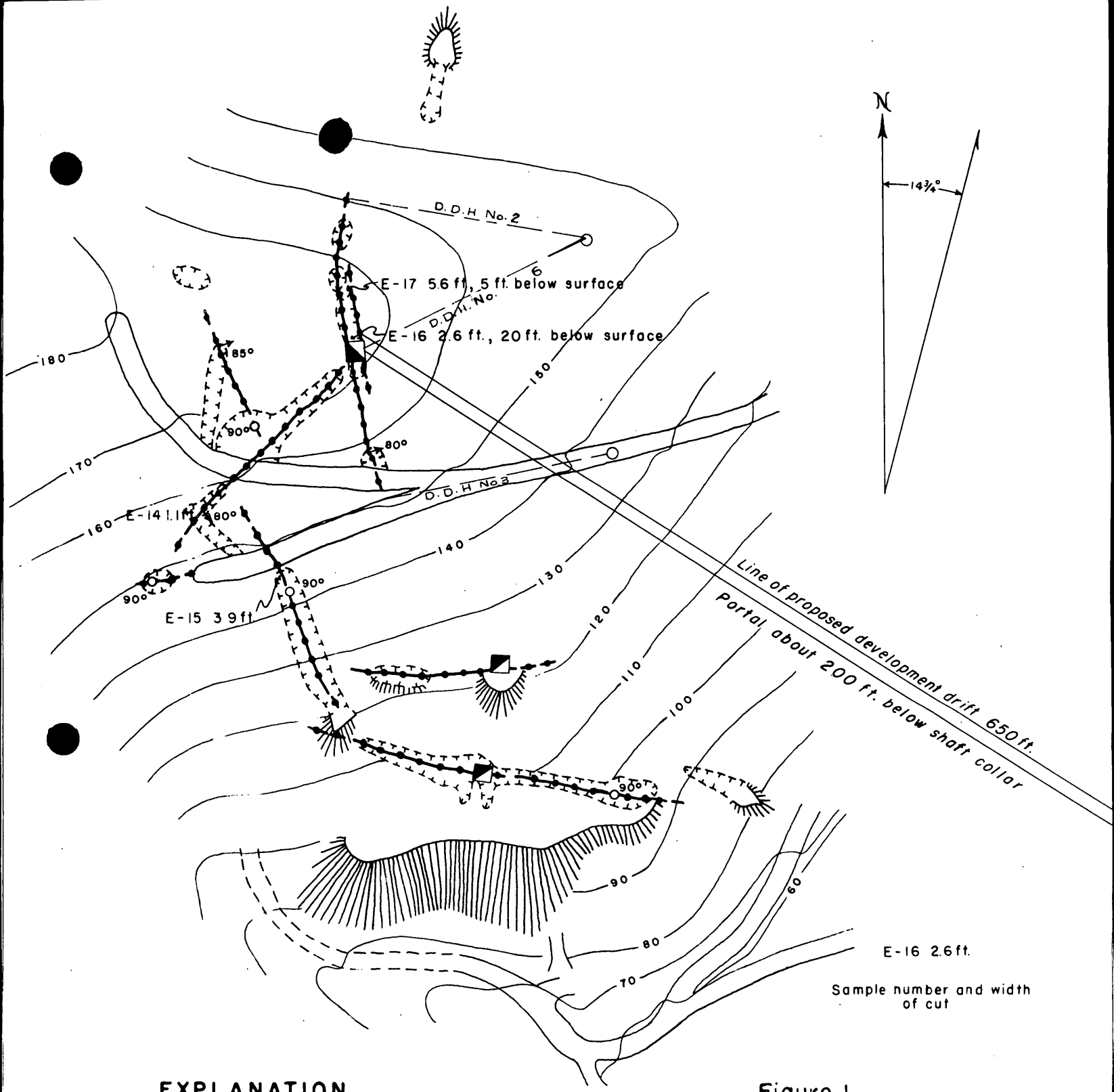
The Empire Mining and Engineering Company in September 1951 applied for a DMA development loan of $100,000, DMA Docket 1209. This loan was to be used in constructing a fluorspar mill and for development work on the company's property in the Jamestown district, Boulder County, Colorado. At that time the property was mapped, the veins sampled, and a geologic and engineering report submitted recommending that the loan be denied. A new application has been submitted by the company, DMEA Docket 2492, requesting a loan of $25,000 for exploration work on their Saddle Lode No.6. This is essentially the same proposal as submitted under DMA Docket 1209 except they dropped the cost of the mill and now consider the project as exploration rather than development. The company proposes to use the $25,000 to drive a 650 foot adit to a point about 200 feet below the outcrop of the main vein. (See attached map).

The geology of the deposits is described in detail in the geologic report under DMA Docket 1209. The veins are narrow, short and widely spaced with an average grade of 47 percent CaF_2. There are no measured or indicated ore reserves and only 712 tons of inferred ore. The ore would have to be hand-cobbed to maintain mill grade of about 50 percent $Ca\ F_2$. It is believed that the mineralization on this property does not warrant the exploration proposed by the applicant.

The owner of the property, Mr. C. E. Zahn Jr., thinks that the width of the main vein might increase with depth as did the vein in the Emmett mine to the north. The Emmett vein is in a wide breccia zone characteristic of the major deposits of the Jamestown district. The veins on the Saddle

Lode No. 6 are not in a breccia zone and in the opinion of the author there is little probability that minable ore would be found at depth. However, to prove that the veins do not widen at depth a limited drilling program might be carried out.

The following program of three diamond drill holes is suggested: Holes 1 and 2 started at a point 100 feet N. 65° E. from the main shaft. (See attached map.) Hole 1 should be drilled on a bearing of S. 65° W. at a dip of -65 degrees and hole 2 on a bearing of N. 80° W. at a dip of -65 degrees. Holes 1 and 2 would be 200 to 240 feet in length to their intersection with the vein at 200 feet vertically below the vein outcrop. Hole 3 should be drilled from a point about 105 feet S. 70° E. from the main shaft. This hole to be drilled on a bearing of S. 78° W. and a dip of -67 degrees. The hole would be 180 to 220 feet in length at its intersection with the vein. The maximum footage for the three holes should not exceed 700 feet and it is estimated by the U. S. Bureau of Mines that this drilling program would cost about $5,500.



EXPLANATION

80°

Vein, showing dip (Dashed where projected)

Shaft at surface

Adit

Prospect pit or trench

Dump

Figure 1

Department of Interior
U.S. GEOLOGICAL SURVEY

EMPIRE MINING and ENGINEERING Co.

Boulder County, Colorado

DMA DOCKET 2492

Topography by M. R. Brock, U.S.G.S., Sept. 1951
Assumed base elevation. Geology by C.S. Robinson

Scale: 1" = 50'

10 ft. contour intervals

DMEA 2492

EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 FLUORSPAR LODE
BOULDER COUNTY, COLORADO

Engineering Report

By F. D. Everett
Mining Engineer
Bureau of Mines

EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 FLUORSPAR LODE
BOULDER COUNTY, COLORADO

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ILLUSTRATIONS

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EMPIRE MINING AND ENGINEERING COMPANY
SADDLE NO. 6 FLUORSPAR LODE
BOULDER COUNTY, COLORADO

ENGINEERING REPORT

By

F. D. Everett

INTRODUCTION

The Empire Mining and Engineering Company applied for an exploration loan under the Defense Production Act of 1950 to investigate fluorspar deposits on the Saddle No. 6 claim near Jamestown, Boulder County, Colo. The exploration loan, as applied for, requested financial assistance in a project estimated to cost $25,000.00 and replaces a direct loan application for $100,000.00, Defense Minerals Administration Docket 1209, submitted in July 1951. The project proposed driving 650 feet of adit toward fluorspar veins projected down from the surface. The president of the company, C. E. Zahn, Jr., later modified the proposal to one consisting of about 1,000 feet of diamond core drilling, estimated to cost $5,000.00.

The original direct loan request was denied because of insufficient ore reserves.

ACKNOWLEDGMENTS

Acknowledgment is made of the helpful cooperation given by C. E. Zahn, president of the Empire Mining and Engineering Company, in showing the property. E. G. Ovitz, superintendent

of the Ozark-Mahoning fluorspar milling operation at Jamestown, gave freely information on fluorspar mining and milling in the area with prices currently paid at his company's mill for custom ore.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The fluorspar properties are near Jamestown, Boulder County, Colorado. The Saddle No. 6 claim, the only one being considered, is in sec. 24, T. 24 N., R. 72 W., 6th P. M., Central Mining District (fig. 1). A good graveled state secondary road passes through Jamestown and joins an access road to the property about a mile northwest of the town. The access road is three-quarters of a mile long from the road junction near Jamestown to the deposit. Boulder, the county seat (Boulder County), is connected to Jamestown by 7 miles of hard, oiled road, State Highway 7, and 10 miles of graveled road. Roads to the area are maintained for hauling during winter months.

Boulder is 33 miles from Denver by U. S. Highway 287 and State Highway 7, and is served by two railroads, the Union Pacific and the Colorado and Southern.

The fluorspar deposits near Jamestown outcrop in the foothills of the Rocky Mountain Front Range, about 8 miles west of the Great Plains. The topography is rough with fairly high relief. The altitude ranges from 6,400 to 8,000 feet. Vegetation covers the slopes, and timber, consisting chiefly of juniper and pine, is abundant.

Climatic conditions are semi-arid but occasional snowfalls of 2 to 5 feet are not uncommon. Water flows all year 'round

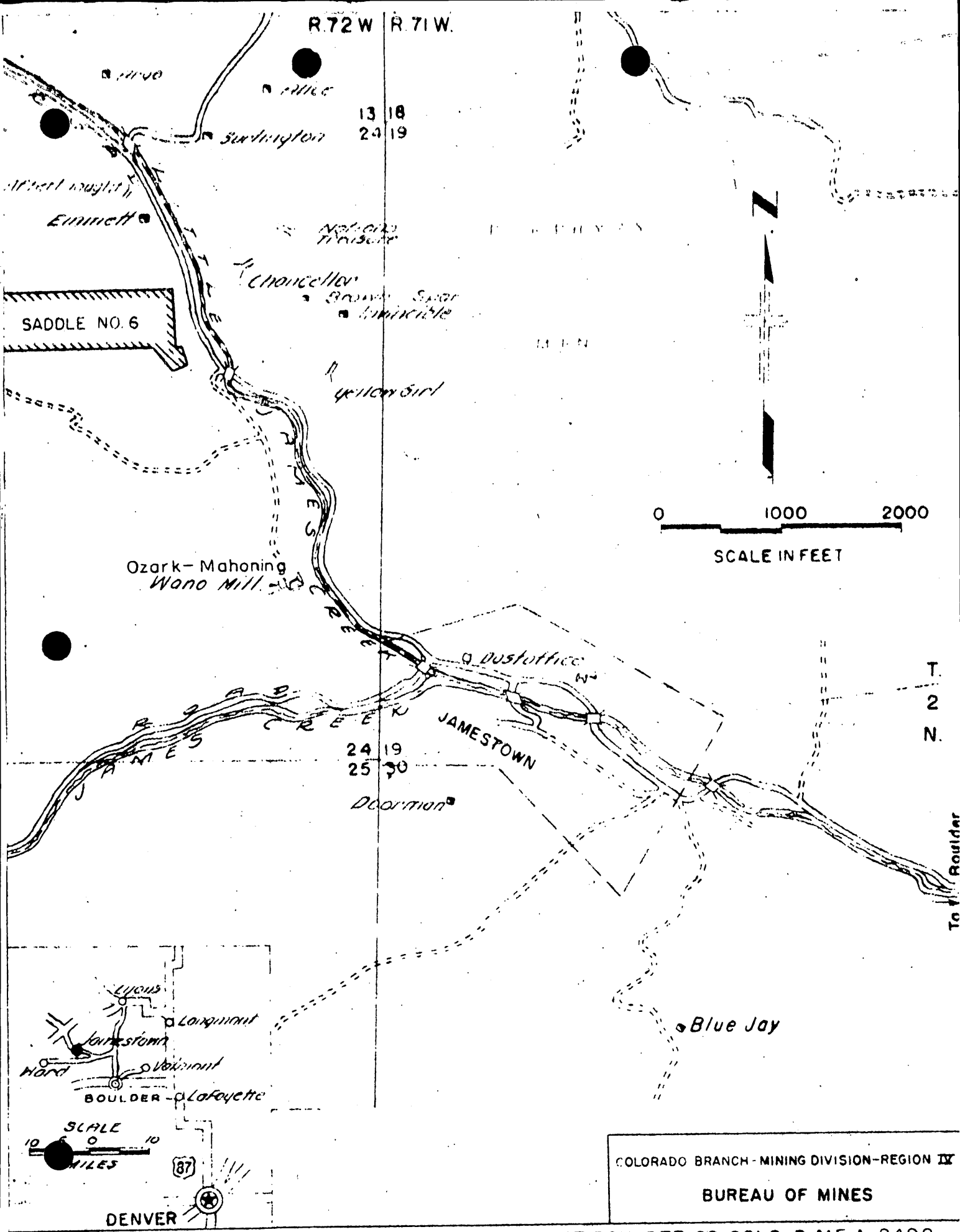


FIG. 1 - LOCATION MAP, JAMESTOWN FLUORITE DISTRICT, BOULDER CO., COLO. D.M.E.A. 2492

in James Creek which runs through Jamestown.

Jamestown has a population of about 100 persons and fluorspar mining and milling is the principal industrial activity.

HISTORY AND PRODUCTION

Fluorspar, although known, was not mined until 1903 when about 400 tons were shipped from Blue Jay Hill. During the following years the output was small and intermittent until World War I when 22,800 tons were produced. After 1920 there was little activity in the district until 1940 when the General Chemical Company purchased several of the mines and started to develop them. In 1941, the company built a 200-ton concentrating mill at Valmont, 7 miles east of Boulder.

Later in 1941, H. M. Williamson & Son, of Boulder and Denver, converted their 100-ton gold concentrating mill to a fluorspar beneficiation plant and began producing fluorspar from the Emmett mine. In 1946, the Ozark-Mahoning Company, producers of fluorspar in Rosiclare, Illinois, purchased the H. M. Williamson & Son, Wano mill. H. M. Williamson & Son do contract mining for the company. The properties mined belong to the Ozark-Mahoning Company.

The the period 1903 - 1944, about 65,838 tons of metallurgical grade fluorspar and 33,826 tons of acid-grade fluorspar were shipped from the district.[1/] Since 1944, about

---

1/ Goddard, E. N., Fluorspar deposits of the Jamestown district, Boulder County, Colorado: Colo. Sci. Soc. Proc., Vol. 15, No. 1, 1946.

Owner -
Conquest Mine Co.
Ag. Produced
[illegible]

U.S. DEPARTMENT OF THE INTERIOR

March 3, 1849

300,000 tons have been mined and milled.

During World War I the deposit on the Orion and Saddle No. 6 claims yielded a very small production. The Saddle group of claims was located in 1942 by Jess Vickery. C. E. Zahn purchased the claims in 1943. The Orion and Saddle No. 6 claims were leased by Vickery in 1944 and some development work done. Zahn and a group of associates organized the Empire Mining and Engineering Company in 1950 for the purpose of mining fluorspar from the Saddle group of claims. No work, except mine rehabilitation and claim surveying, has been done by the applicant up to the present time.

OWNERSHIP AND EXTENT

The company owns, by purchase agreements with C. E. Zahn, six located claims and one patented claim. The patented claim, the Orion, is entirely enclosed by the Saddle No. 6 claim. These two claims, or, as might be stated, the Saddle No. 6 claim, is the only one of concern in this investigation.

The claims held by the company are: Orion and Saddle No. 6, located about a mile northwest of Jamestown and south of the Emmett mine, in sec. 24, T. 2 N., R. 72 W.; Saddle, Saddle No. 2, Saddle No. 5, and Saddle No. 8, located about 1/2 mile southwest of town in sec. 30, T. 2 N., R. 71 W.; Saddle No. 7, joining the Townsite on the north; and Saddle No. 3, 1/4 mile below the town along James Creek.

DESCRIPTION OF THE DEPOSITS

The fluorspar deposits in the Jamestown district consist of breccia zones and veins in a belt in granite and grano-

diorite about 2 miles long and half a mile wide. The breccia zones range from 10 to 70 feet in width and from 50 to 350 feet in length. Purple fluorspar, both coarsely crystalline and granular, occurs as a filling in veins and around breccia fragments. Quartz, clay minerals, disseminated pyrite and small amounts of galena, sphalerite, and chalcopyrite are associated with the fluorspar.

The deposit on the Saddle No. 6 and Orion claims consists of several short veins, having an irregular surface pattern, in an inconsistent breccia zone. The veins appear to vary from a few inches to 6 feet in width and from 10 to 70 feet in length and dip vertically. Most of the fluorspar is in the form of one or more massive veinlets, averaging about a foot in width, in a wider vein type structure.

In the existing development stage the fluorspar occurrences appear too erratic and inconsistent to be mined economically by any pre-planned, systematized method. No estimates can be made as to how deep the deposit might extend, but the Emmett mine, on the adjoining claim to the north, is 1,200 feet deep and still mining fluorspar. However, the Saddle No. 6 deposits may be on the edge of the main breccia zone and in the present state of development cannot be compared to the Emmett.

The remaining Saddle claims, as shown to the examining team, consist of comparatively undeveloped narrow veinlets of fluorspar and are not given any consideration.

The fluorspar vein walls appear strong. In the breccia zone, the fragments have been cemented with fluorspar or

silicious solutions. The vein walls in the Emmett mine are generally in the Silver Plume granite formation and the shrinkage mining method is applicable.

MINEABLE ORE RESERVES

The examining team concurs with the applicant that the Saddle No. 6 and Orion claims offer the best possibilities. Inferred ore blocks, designated as A, B, C, and D, (fig. 2), are calculated from data shown on U. S. Geological Survey maps, using a tonnage factor of 12, as follows:

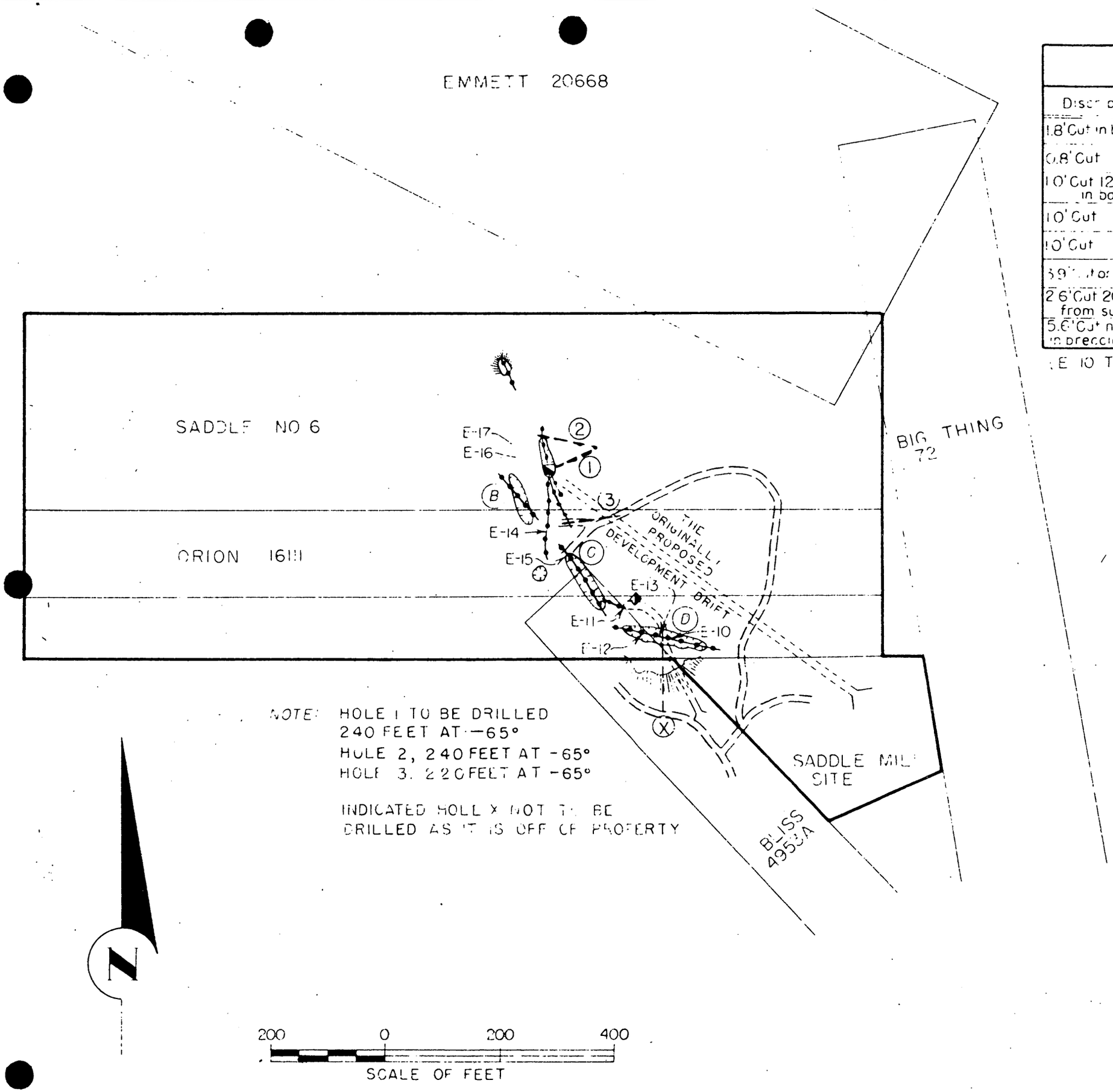
Block A	$\frac{25 \times 30 \times 5 + 40 \times 10 \times 3}{12}$	=	412 tons
Block B	(Based on one 1-foot sample, assaying 71 percent CaF_2)	=	50 tons
Block C	(Based on three 9-foot samples assaying 50.7 percent CaF_2)	=	50 tons
Block D	$\frac{3 \times 25 \times 10 + 3 \times 30 \times 20}{12}$	=	200 tons

Thus, total inferred ore is estimated at 712 tons.

The report by F. C. Bowman, Consulting Engineer, included with the application, credited this area with 2,200 tons. The main difference in the two calculations is that Bowman extended the exposures to 50 feet below the uppermost workings and more or less connected all vein zones.

The other claims do not appear to warrant consideration as they contain no apparent ore reserves.

The ore in the narrow zones encountered assayed in excess of 50 percent CaF_2 with some showing of lead and a trace of gold. In mineable widths, the ore would average between 30 and 40 percent CaF_2. By sorting, the grade of ore could be raised to over 50 percent CaF_2, with a considerable sacrifice of tonnage.



ASSAY DATA

Description	Lab No.	Au	Pb	CaF_2	$CaCO_3$	SiO_2
1.8' Cut in back	E-10	.005	1.6	64.9	0.5	15.0
0.8' Cut	-11			68.1	1.05	
1.0' Cut 12' high in back	-12			55.6	0.35	
1.0' Cut	-13			70.6	1.05	
1.0' Cut	-14			71.0	0.15	
3.9' Cut at surface	-15	.005		50.7	0.15	
2.6' Cut 20' down from surface	-16			52.7	0.15	32.2
5.6' Cut near surf in breccia zone	-17	.005		29.5	tr.	

(E-10 THRU E-13 INCL ARE UNDERGROUND SAMPLES)

LEGEND

- FLUORITE VEIN
- UNDERGROUND WORKINGS
- SURFACE PIT
- (A) ORE RESERVE BLOCK
- ROADS
- E-10 SAMPLE NO.
- SHAFT
- DUMP

COLORADO BRANCH - MINING DIVISION - REGION IV

BUREAU OF MINES

FIG. 2-ORION & SADDLE NO. 6 CLAIMS & WORKINGS OF THE EMPIRE MINING & ENGINEERING CO., JAMESTOWN, BOULDER COUNTY, COLO. D.M.E.A.- 2492

PRESENT STATUS

Exploration and Development

The property is not currently being worked. Other than a little development work done during 1944, very little, if any, work has been done since World War I.

The development work consists of one 115-foot open-cut and 150 feet of underground drifting from the open-cut on the Orion claim; 50 feet of open-cut which has a small underground excavation near the north end; four shallow pits near the upper terminus of the road; and a 25-foot cut 5 feet wide and about 20 feet deep. All of the above work is included within the limits of Saddle No. 6 claim which covers the Orion claim.

A small amount of surface and underground work has been done on the other Saddle claims but the fluorspar exposures appear to have little or no merit.

Mining and Milling Equipment

The company has no mining or milling equipment. Power could be obtained from nearby transmission lines. The present access road to the workings could easily be replaced and maintained. Water for mining would have to be hauled or pumped from Little James Creek.

PROJECT PROPOSALS, WITH COSTS

Exploration

The exploration proposal, as given in the application, consisted of driving a crosscut tunnel 650 feet to a point about 200 feet vertically below the surface discovery shaft.

A drifting contract, submitted with the application, included: (1) driving the drift for $30.00 a foot, (2) enlarging for timber for $40.00 a foot, (3) furnishing and installing timber for $150.00 per 1,000 board feet, (4) furnishing and installing channel supports for $0.20 a pound, and (5) constructing access road at contractor's cost plus 5 percent.

This proposal, although feasible, is inadequate to explore all fluorspar occurrences as noted on the surface, and 300 to 400 feet of drifting would have to be added to the 650 feet to more completely explore the deposits.

In the opinion of the field examiners, the deposits do not merit a $25,000.00 project and it is considered that they could be more economically explored by diamond drilling. In agreement with the suggestion, C. E. Zahn, modified the proposal to include about 1,000 feet of diamond drilling estimated to cost about $6,000.00.

The Defense Minerals Exploration Administration examining team recommend a diamond drilling project subject to the following requirements:

(1) All drilling should be done with NX- or BX-size bits with the object of obtaining not smaller than BX-size core.

(2) Sludges near and in the fluorspar zones should be collected.

(3) Three holes are suggested to be drilled as indicated on figure 2 with the following length and dip:

Hole No.	Bearing	Objective depth vertically below the surface, feet	Length, feet	Dip
1	S. 65° W.	200	240	-65°
2	N. 80° W.	200	240	-65°
3	S. 78° W.	180	220	-65°
		Total	700	

If hole 1 or 2 reveals a vein of fluorspar not worthy of development, further drilling would be useless. If the drilling discloses a fluorspar vein worthy of development, hole X is suggested, but, because it would have to be drilled on property not owned by the applicant, it should not be considered.

The drilling of three holes with an aggregate footage of 700 feet is estimated to cost $7.00 a foot or $4,900.00. Bulldozing charges to service the road and prepare drill sites are estimated at $100.00. The suggested drill sites were selected because of the minimum amount of preparatory work required.

The project should require less than two months for completion.

New Equipment and Facilities

The applicant has no equipment for either drifting or diamond drilling. It is suggested that any approved work be contracted except for the small amount of bulldozer work that might be necessary

Transportation

A bulldozer would be required for one or two days to

prepare drilling sites and to service the existing access road.

Manpower

Manpower should not offer any great problem if the work can be contracted. Miners are paid $1.36 to $1.50 an hour and unskilled labor, $1.10 to $1.35 an hour in the district. Labor at Jamestown is scarce but could probably be recruited from Boulder.

Half time supervision should be allowed in the amount of $200.00 a month.

Power

Power, although not considered necessary for a diamond drill project, is available at the property.

Water

Water for drilling must be hauled from Little James Creek about 1/2 mile from the deposit.

Milling

The applicant proposes to truck any ore mined to one of two mills, namely, the General Chemical Division of the Allied Chemical and Dye Corporation's mill at Valmont, or to the Ozark-Mahoning Company's mill at Jamestown, 3/4 mile from the deposit.

A schedule for purchasing fluorspar ore by the Ozark-Mahoning Company follows:

Grade of ore, percent CaF_2*	Price paid delivered to the mill
48-50	$7.40
51-53	8.00
54-56	8.30
57-59	9.20
60-62	9.90
63-65	10.40
66-68	10.90
69-71	11.90
72-74	12.90
75-77	13.90
78-80	14.90

* 40 percent CaF_2, minimum grade accepted.

Both mills produce acid-grade fluorspar; a sulfide concentrate is also recovered but no allowance is made to the ore seller.

PRODUCTION PLAN

The deposit, if sufficient ore reserves are developed, can probably be mined by the shrinkage method. About 30 tons a day should be produced per shift after the completion of the mine development. Developing by means of a long adit or by sinking would depend on the quantity and quality of the ore reserves indicated by diamond drilling.

SUMMARY: COST OF PROJECT

The cost of the modified project is estimated as follows:

700 feet of diamond core drilling, including sampling and hauling water, at $7.00 per foot	$4,900.00
Bulldozing, 1 day	100.00
65 cardboard core boxes, at $0.60 each	39.00

2 months' supervision at half pay, or $200.00 per month	$400.00
Miscellaneous	61.00
Total	$5,500.00

If possible, a diamond drill contract should be awarded for 480 feet of drilling but, in any event, for not over 700 feet.

PROPOSED FINANCING

The project, costing an estimated $5,500.00, will be financed by the company with the Defense Minerals Exploration Administration participating for 50 percent, or an estimated $2,750.00.

CONCLUSION AND RECOMMENDATION

Exploration by diamond drilling appears justified in a project estimated to cost $5,500.00. All drilling should be with BX-size bits or larger. If possible, a contract should be awarded, allowing for termination after drilling two holes or 480 feet if the results are not considered satisfactory by Defense Minerals Exploration Administration representatives.

The project, subject to the above specifications, is recommended for approval.

bam

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

Ass

Hank Hoffman
Hutt

OCT 6 1952

Mr. W. H. King
Executive Officer, DMEA
Field Team, Region IV
Bureau of Mines
224 New Customhouse Building
Denver 2, Colorado

Subject: Docket No. DMEA-2492 - Fluorspar
Empire Mining & Engineering Co.
Boulder County, Colorado

Dear Mr. King:

Enclosed herewith please find three copies of an exploration project contract for the subject property which you sent to us on September 15, 1952, and which we are now returning. The contract has been assigned Contract No. Idm-2401.

The contract, as written, is approved as to legal form by the Chief Counsel of the Defense Minerals Exploration Administration.

S.H. 10-6-52

Sincerely yours,

(signed) FRANK E. JOHNSON (B. H.)

Chairman, Operating Committee

Approved:

Joe Ko Hedges (B. H.)

Member, Bureau of Mines

G. R. Kickel, Jr. (B. H.)

Member, Geological Survey

Enclosures 3

LGHouk:gad 10/2/52
Copy to: Admin. Reading File
Docket File
Operating Committee (2)
Mr. Davis, 3519
Mr. Norton, G-232 GSA Bldg.
Mr. Houk

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 9 1952

224 New Customhouse
Denver 2, Colorado

June 2, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration
Attention: Code 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2492, Empire Mining and Engineering Co. (Fluorspar) Boulder County, Colorado

Exploration aid in the amount of $5,500 has been approved and the contract will be prepared by this office.

Four copies of the report will be forwarded to you when the contract is signed.

The original and one copy of Form 3b is attached.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 9 1952

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

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W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 9 1952

DMEA Form 3b
(Revised)

DEFENSE MINERALS EXPLORATION ADMINISTRATION

CONTROLLED DOCUMENT
Revised Abstract

DMEA Docket No. 2492

Name of Applicant Empire Mining and Engineering Co.

Change:	From		To	
	III 1	☐	III 1	☒ 6-2-52
	III 2	☐	III 2	☐
	III 3	☐	III 3	☐
	III 4	☐	III 4	☐
	III 5	☐	III 5	☐

Add:

II 7 $ 25,000

II 8 $ 5,500

II 8a % 50

Remarks:

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 9 1952

Initials of person preparing sheet H.M.C.

Date sheet prepared 6-2-52

17367

DMEA Form 3b
(Revised)

DEFENSE MINERALS EXPLORATION ADMINISTRATION

CONTROLLED DOCUMENT
Revised Abstract

DMEA Docket No. 2492

Name of Applicant Empire Mining and Engineering Co.

Change:	From		To	
	III 1	☐	III 1	☒ 6-2-52
	III 2	☐	III 2	☐
	III 3	☐	III 3	☐
	III 4	☐	III 4	☐
	III 5	☐	III 5	☐

Add:

II 7 $ 25,000

II 8 $ 5,500

II 8a % 50

Remarks:

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 9 1952

Initials of person preparing sheet H.M.C.

Date sheet prepared 6-2-52

17367

NATIONAL STOCKPILE
MATERIAL PURCHASE SPECIFICATION

FLUORSPAR, METALLURGICAL GRADE

1. DESCRIPTION

This specification covers two metallurgical grades of fluorspar, A and B, suitable for the processing of steel.

2. CHEMICAL AND PHYSICAL REQUIREMENTS

a. Chemical Requirements

Each lot of material purchased under this specification shall conform, on a dry basis, to chemical requirements as indicated below for Grades A and B of metallurgical grade fluorspar.

		Percent by Weight Dry Basis	
		Grade A	Grade B
Effective Calcium Fluoride (CaF_2) 1/	Minimum	70.00	60.00
Sulphur (As sulphide and/or free sulphur)	Maximum	0.30	0.30
Lead (Pb)	Maximum	0.50	0.50

1/ Percent effective calcium fluoride shall be calculated by deducting from the contained calcium fluoride, 2.5% for each 1% contained silica, fractions pro rata.

b. Physical Requirements

Metallurgical grade fluorspar covered by this specification shall conform to the following size requirement:

All the material must pass through a one inch opening and not more than 15 percent shall pass a No. 16 U. S. Standard Screen.

3. INSPECTION

The material shall be subject to inspection and analysis by the purchaser or its designee.

Building 20 - Federal Center
Denver 25, Colorado

EXTRA COPY
O. M. E.
RECEIVED

800

September 21, 1962

Memorandum

To: W. R. Grimwold, Acting Chief
Division of Field Operations, OME
Washington 25, D. C.

From: Acting Field Officer, OME, Region III

Subject: DMEA-2492 (Fluorspar)
Contract No. Bm-2401
Empire Mining & Engineering Company
(Orion & Saddle No. 6 Claims)
Boulder County, Colorado

I made an inspection of the subject claims on September 20, 1962 and found no signs of recent mining activity. I talked to Mr. Sheriff, Superintendent of the Burlington Mine, which is about a mile from the subject property, and is being operated by the Allied Chemical Company and is the only fluorspar mine now operating in that mining district. He stated that there has been no activity on the subject claims for years.

I also talked to Mr. Harvey Craig in Boulder. He knows all of the operators in the area. He stated that no work has been done on the claims since the expiration of the DMEA work. He also stated that Mr. Hahn's son, who had charge of the property after his father's death, was killed in an automobile accident. Mr. Craig has no knowledge of anyone connected with the Empire Mining and Engineering Company.

I believe that there has been no production from this property during the time of Government subordination and I recommend that the files be closed on this contract.

Original signed by

Hugh M. Connors

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Executive Officer, OME Field Team, Region III, Denver, Colorado pertaining to Contract IMa-2401, Docket No. IMMA 2492, dated September 8, 1952, with

Empire Mining and Engineering Company
P. O. Box 763
Boulder, Colorado

for the purpose of determining the amount of royalties due the U. S. Government on the sales of Flusrspar, from property referred to as Orion and Saddle No. 6 claims, located in Boulder County, Colorado, during the period September 8, 1952 to June 11, 1959.

A Certification of Discovery or Development was issued on April 13, 1953, and accordingly royalty is payable on all production from the land described in Article 2 of the contract for a maximum period of 10 years from the date of the contract. A Report of Review in lieu of final cost audit dated March 4, 1953, indicated accepted costs under the exploration contract amounting to $5,425.00, with the Government's contribution on a 50 percent basis being $2,712.50.

No royalty has been paid to the Government to date in connection with this contract.

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(a) According to the Field Team's Annual Report of certified project for the period January 1, 1955 to December 31, 1955, operation ceased about December 31, 1952; no ore has been shipped since September 8, 1952, (the date of the exploration contract). Subsequent reports of Field Team for the period January 1, 1956 to December 31, 1957 indicate the property inactive and there is no indication of operations or ore shipments during the year 1958, or anticipated change in the property's status during 1959.

(b) The administrative costs to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible royalty which might be disclosed.

June 11, 1959

JUN 15 1959
O.M.E.

Donald T. Finch
Donald T. Finch
OME Auditor

JUN 16 1959

Memorandum

To: Mr. Donald T. Finch, OME Auditor

From: E. D. Talbert, Acting Chief (Signed) E. D. Talbert
Contract Administration and Audit Division

Subject: Docket No. DMEA-2492 (Fluorspar)
Empire Mining and Engineering Company
Contract No. Idm-E401

Your Report of Royalty Review on the subject contract is acceptable and distribution of the regional copies is authorized.

EDTalbert/ama
June 15, 1959

Copy to: Docket
Director's Reading File
Code 800

REPORT
OF REVIEW

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF REVIEW

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 6 1953

I have reviewed the Monthly Reports of:

Empire Mining Co.
P.O. Box 763
Boulder, Colorado

pertaining to Exploration Project Contract No.IDM-E401, Docket No. 2492, covering a project for exploration of Fluorspar, for the months of October 1952 to December 1952.

My review included an examination of the Monthly Reports (Form MF-104) and supporting documents attached thereto, comparison of costs claimed with the contract and pertinent schedules, consultation with the Executive Officer of the Field Team in charge of the project, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reason:

The contract provides for payment by the Government on the basis of agreed estimated costs of work actually performed.

The review disclosed the following facts in regard to the amount paid or to be paid the contractor:

Total cost as billed by Contractor		$5425.00
Exceptions:		
By DMEA Finance Officer	None	
Herewith	None	None
Total Accepted Cost		$5425.00

The contract calls for a 50 per cent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Two thousand seven hundred twelve Dollars and 50/100

-$2,712.50-

is considered valid and proper.

Date: March 4, 1953

T. H. Brading, Auditor

Form MF-94 (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 12 1953

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of December, 1952 Docket No. DMEA 249 Contract No. IDM-3401
Operator's Name Empire Mining & Engineering Co., Inc. Minerals
Address Box 702, Boulder, Colorado. Fluorspar
Contract Amount, $5425.00 Government Participation: 50 % Amount, $2712.50

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) ~~Independent~~ Short Form Contracts:						
Drilling core	2139.00	3286.00	5425.00			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	$2139.00	$3286.00	$5425.00	2139.00	3286.00	5425.00

I certify that the above bill is correct and just and that payment therefor has not been received.

Date Jan. 2, 1953 *Payee Empire Mining & Engineering Co.

Per [signature] Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$1969.50

Signature [signature]
(Authorized Certifying Officer)

Date 3/5/53 Vou. No. DMA 53-104

(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. DMA-E401 in accordance with the terms of the contract.

Signature C. M. Harrer Title Mining Engineer Date Jan. 6, 1953.

$1069.50

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: R.D.B.

Signature W. H. King Title Executive Officer Date FEB 17 1953

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 12 1953

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of December 1952 Docket No. DMEA 2492 Contract No. ICr-2401
Operator's Name Empire Mining & Engineering Co., Inc. Minerals
Address Box 763, Boulder, Colorado. Fluorspar

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	Ft.	$2139.00	276	$5425.00	700	$7.75	700	$7.75
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		$2139.00		$5425.00			TOTAL COSTS AUTHORIZED BY CONTRACT	
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		$2139.00		$5425.00				$5425.00

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

REMARKS:

Date Jan. 2 1953 Operator Empire Mining & Engrg. Co.

Per [signature] Title President

NOTE.—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.

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

EMECO

Jan. 2 1953

Exploration Project Contract No. Idm-E401
Docket No. DMEA 2492.

Narrative Report No. 2.

Under above contract DDH 3 was completed Dec. 30 1952 being the final hole and drilling of 700ft. under this contract. DDH 1 & 2 were drilled at locations shown on map C-101-1 Oct. 20 1952, and at angles of 65 degrees from the horizontal. DDH 3 location was moved 45 feet east of point shown on map C-101-1, Oct. 20 1952, along same bearing as origionally shown, the angle being 55 degrees from the horizontal. All drill holes were left in condition to drill deeper if thought advisable.

The following logs are the drillers logs as soon as the geologist report is received after examination of the cores, exact findings will be plotted on map C-101-1 revised, as log sections showing the identified strata which will be correlated on the map of the area with reference to location of fluorspar veins as shown by logs. Upon completion of the revised map five copies will be forwarded to Mr. Traver's office as an attachment to this report.

Log DDH 1 (con't.)

184'	to	197'	Conglomerate w/ spar seams
197		202	Spar vein
202		205	" seams
205		248	Conglomerate w/ spar crystals
248		260	" " seams.

Log DDH 3

38' 47'		59' 60'	Conglomerate w/ spar seams at these points
60		78	" " " "
82		86	4' spar vein
87		147	Conglomerate w/ spar seams
147		13[illegible]	" w/ spar crystal in white rock could be spar.
180		184	seams of spar & pyrite
184		189	" " "
189		190	1' spar vein
195		197	2' " "
		202	6" " "

Jan. 2 1953
Narrative Report No. 2

EPC No. Idm-E401
Docket No. DWA 2492.

DDH 3 Con't.

	205'	4' Spar vein
208'	212	Conglomerate w/ spar crystals
217	222	5' spar vein
223	227	Spar seams w/ pyrite
228	229	" " " "
229	230	Rock.

Empire Mining & Engineering Co.

By: C. E. Zahn, Jr.
C. E. Zahn, Jr. Engineer

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

224 New Customhouse
Denver 2, Colorado

February 17, 1953

Memorandum

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 12 1953

To: T. A. Christensen

From: Executive Officer, Field Team, Region IV

Subject: DMEA Docket 2492, Contract Idm-8401 (Fluorspar) Empire Mining and Engineering Company, Inc., Boulder County, Colo. Operator's Monthly Progress Report for the period of December, 1952 - Final Report

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 50 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

This report will constitute final payment under the contract.

Remarks:

Date of Report - January 2, 1953
Date Received in Field Office - January 5, 1953
Date Received in Region Office - January 8, 1953
Date Processed for Payment - February 16, 1953

Report was held up pending receipt of Operator's Final Report which was received in this office February 16, 1953.

W. H. King

W. H. King

Enclosures

RDB:oc
cc: Contract
Secretary to the Oper. Comm. (2)
WMTraver
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
January 7, 1953

DEPARTMENT OF THE INTERIOR
Bureau of Mines Administration
RECEIVED
JAN 12 1953

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: BMMA 2492, Contract I4m-B401 (Fluorspar), Empire Mining and Engineering Company, Inc., Jamestown, Boulder County, Colorado - Progress report for December 1952

Please find enclosed the original and four copies of the above progress report--forms MF-104 and MF-104A, with narrative--and the original and six copies of C. M. Harrer's memorandum covering inspection of the surface core drilling progress and approval of the contractor's claim.

The report shows completion of the contract prepared on a short form MF-200 (A) calling for 700 feet of BX size drilling at a unit price of $7.75 per foot.

U. S. Geological Survey's inspection in the field work and of the cores which are stored at Building 701, Denver Federal Center, has been requested. When their work is completed, a final report should be requested from the operator and the participating agencies. In the meantime, it is presumed payment of this final voucher will be withheld although that does not seem necessary as the work has been performed in a satisfactory manner and has Branch approval.

Payment is approved of $1,069.50, or 50 percent of the total $2,139.00 claimed by the contractor.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures
WMT/mmh
cc: 4
B401
BMMA Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
January 7, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 12 1953

Memorandum

To: Chief, Mineral Resources Branch, Mining Division, Region IV

From: C. M. Harrer

Subject: DMEA 2498, Contract Idm-2401 (Fluorspar), Empire Mining and Engineering Company, Inc., Jamestown, Boulder County, Colorado - Progress report for December 1952

The project diamond drilling sites on the Saddle No. 6 claim were visited by C. M. Harrer and Carl Belser on January 5, 1953. Drilling was discussed with George Marshall, contract driller, in the absence of C. E. Zahn, president of Empire Mining and Engineering Company, Inc.

The subject project was completed at the time of inspection and total progress was in excess of contract stipulations.

Diamond drill hole 1, started on November 14, was completed to a total depth of 260 feet on December 5, 1952, as verified by the driller's daily log and examination of the BX core. The operator has reported only the 240 feet of this hole mentioned in the contract.

In addition, equipment was moved to the site of diamond drill hole 3 during December 6-8, 1952, and drilling started on December 9. Drill hole 3 was completed to a depth of 230 feet on December 30, 1952, as verified by the driller's daily log and examination of the BX core. The operator has reported only the 220 feet stipulated under the contract.

The total advance of 276 feet, reported by the operator in his forms MF-184 and MF-184A to the completion of the project on December 30, 1952, is approved for payment at the contract stipulated rate of $7.75 per feet.

Total expenditures of $2,139.00 by Empire Mining and Engineering Company, Inc., for the month of December 1952 and the completion of the project are approved for payment. U. S. Government participation of 50 percent will be $1,069.50.

C. M. Harrer
C. M. Harrer
Mining Engineer

CMH/amh
cc: 6, 2401, DMEA Chron.

Form MF-104 (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 23 1953

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of November, 1952 Docket No. DMEA 2492 Contract No. Icm-2401
Operator's Name Empire Mining & Engineering Co., Inc. Minerals
Address Box 763, Boulder, Colorado Fluorspar
Contract Amount, $5000.00 Government Participation: 50% ~~Amount, $2732.50~~

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) ~~Independent~~ Short Form Contracts:						
Drilling core	3286.00	none	3286.00			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify):						
TOTALS	3286.00	none	3286.00	3286.00	none	3286.00

I certify that the above bill is correct and just and that payment therefor has not been received.

Date Dec. 1 1952 *Payee Empire Mining & Engineering Co.

Per [signature] Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$1643.00

Signature [signature]
(Authorized Certifying Officer)

Date 1/14/53 Vou. No. DMA 53-81

(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. DMA-E401 in accordance with the terms of the contract.

Signature C. M. Harrer Title Mining Engineer Date Jan. 6, 1953

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: R. B.

Signature W. H. King Title Executive Officer Date JAN 12 1953

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

U. S. GOVERNMENT PRINTING OFFICE 205675

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 23 1953

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of Nov. 1952 Docket No. DMEA 2402 Contract No. Dem-1401
Operator's Name Empire Mining & Engineering Co., Inc. Minerals
Address Box 763, Boulder, Colorado Fluorspar

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	Ft.	$3286.00	424	$3286.00	424	$7.75	700	$7.75
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails								
TOTAL DISTRIBUTED COSTS		$3286.00	424	$3286.00				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		$3286.00		$3286.00				$5425.00

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

Date Dec. 1 1952 Operator Empire Mining & Engrg. Co.

Per [signature] Title President

REMARKS:

NOTE.—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.

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

U. S. GOVERNMENT PRINTING OFFICE 205676

EMECO

December 1 1952

Exploration Project Contract No. Idm-E401
Docket No. DMEA 2492.

Narrative Report No. 1.

Under above contract operations were started Oct. 25 1952 on DDH2 and completed Nov. 14 1952. DDH1 was completed to 184 feet on Dec. 1 1952.

Log DDH1

55'	- 60'	Spar seams
	87	" "
107	- 111	" "
	113'6"	Spar seam
150	- 184	Conglomerate w/ spar seams

Log DDH2

	54'	Small spar streak
60	- 65	Spar seams
103	- 105	Spar
105	- 108	" seams
116	- 125	" "
135	- 141	" "
148	- 176	" "
180	- 215	" "
215	- 218	Spar
218	- 220	" "
230	- 233	" "
239	- 240	" "

After a cursory examination of the log of DDH2 there would seem to be no evidence of sufficient amount of ore to be commercially profitable although little can be determined until all holes are completed and logs plotted for correlation and further study.

Upon completion of DDH3 the various logs will be plotted on map C-101-1 prints of the completed map will be attached to narrative report No. 2.

No unusal conditions have been encountered during the drilling operations after determining the proper diamond bit for the ground

Dec. 1 1952
Narrative Report No. 1

EPC No. Idm-E401
Docket No. DMEA 2492.

characteristics. A Turco bit with diamonds set in hard matrix appears to give the best results, 100 to 125 feet is the average for this bit without damage. The drilling has been averaging approximately 25 feet per eight hour day.

Empire Mining & Engineering Co.

By: C.E. Zahn, Jr.
C.E.Zahn, Jr. Engineer

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

224 New Customhouse
Denver 2, Colorado

January 12, 1953

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2492, Contract Idm-E401 (Fluorspar), Empire Mining and Engineering Company, Inc., Boulder County, Colorado - Operator's Monthly Progress Report for the period October 25 to November 30, 1952

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 50 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

Remarks:	Date of Report	December 1, 1952
	Date Received in Colo. Branch Office	December 15, 1952
	Date Received in Region IV Office	January 8, 1953
	Date Processed for Payment	January 9, 1953

W. H. King

W. H. King

Enclosures

RPB:es

cc: Sec. to the Operating Committee (2)
Contract
Traver
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
January 7, 1953

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 2492, Contract Idm-E401 (Fluorspar), Empire Mining and Engineering Company, Inc., Jamestown, Boulder County, Colorado - Progress report for October 25 to November 30, 1952

Please find enclosed the original and four copies of the subject progress report--forms MF-104 and MF-104A, with narrative--and the original and six copies of C. M. Harrer's memorandum covering inspection and approval of the contractor's report on surface core drilling operations, totaling 424 feet. The contract is on short form MF-200 (A) allowing 700 feet of drilling BX size at $7.75 per foot.

Payment is approved of $1,643.00, or 50 percent of the total $3,286.00 claimed by the contractor.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosures

WMT/amh

cc: 4
E401
DMEA Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
January 7, 1953

Memorandum

To: Chief, Mineral Resources Branch, Mining Division, Region IV

From: C. M. Harrer

Subject: DMEA 2492, Contract Idm-2401 (Fluorspar), Empire Mining and Engineering Company, Inc., Jamestown, Boulder County, Colorado - Progress report for October 25 to November 30, 1952

The project diamond drilling sites on the Saddle No. 6 claim were visited by C. M. Harrer and Carl Reiser on January 5, 1953. Drilling was discussed with George Marshall, contract driller, in the absence of C. E. Kahn, president of Empire Mining and Engineering Company, Inc.

The subject project was completed at the time of inspection and total progress was in excess of contract stipulations.

Diamond drilling started with hole 2 on October 25, 1952. It was completed to a depth of 240 feet on November 14, as verified by inspection of the BX diamond drill core and the driller's daily log.

In addition, diamond drill hole 1 was started November 14, and advanced to 184 feet at the end of November 1952, as reported by the operator. This was verified by the driller's daily log and examination of the BX core.

The operator's total advance of 424 feet from the start of the project to the end of November 1952 is approved for payment at the contract stipulated cost of $7.75 per foot.

Total expenditures of $3,286.00 by Empire Mining and Engineering Company, Inc., for the period October 25 through November 30, 1952, is approved for payment. U. S. Government participation of 50 percent will be $1,643.00.

C. M. Harrer

C. M. Harrer
Mining Engineer

CMH/amh
cc: 6, 2401, DMEA Chron.

[redacted]

Empire Mining and Engineering Company
P. O. Box 763
Boulder, Colorado

Re: [redacted]-2497 (Fluorspar)
Empire Mining and Engineering Company
Orion and Saddle Blanket
Boulder County, Colorado
Contract [redacted]

Gentlemen:

By the terms of the subject Exploration Project Contract and the certification of discovery or development dated April 13, 1953, all minerals mined or produced from September 8, 1952, to September 8, 1962, were subject to the Government's percentage royalty as set forth in the said contract.

As the period during which production was subject to royalty has now expired, the Government according to its present records retains no claim or lien against the property subject to the contract or any future production therefrom. We, therefore, are closing our books and records on this contract. Your attention, however, is called to the provisions of the contract which require the Operator to keep and preserve certain records for the periods indicated.

Sincerely yours,

(signed) FRANK E. JOHNSON

ACTING Director

EFHelt/gla
9-27-62
cc to: Director's Reading File
Region III (2)
Docket
Contract Division
Code 500

GOVERNMENT COPY

[illegible]

CERTIFICATE OF THE UNITED STATES OF AMERICA
OF A DISCOVERY OR DEVELOPMENT UNDER
AN EXPLORATION PROJECT CONTRACT

To: Empire Mining & Engineering Company
P. O. Box 763
Boulder, Colorado

Pursuant to the provisions of Exploration Project Contract No. 14m-2421, dated September 3, 1954, (Docket No. [illegible]-492), hereinafter called the "contract", between you and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien thereon and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made, has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows:

Three AX holes drilled under the contract have partially explored three fluorspar veins on the [illegible] No. 1611 and [illegible] 36 Claims in Boulder County, Colorado, and have furnished sufficient data to estimate inferred reserves of fluorspar.

Dated: APR 1 3 1953

THE UNITED STATES OF AMERICA

By C O Mitteneder
Administrator, Defense Minerals
Exploration Administration

[illegible]Hook'gad 4/3/53
Copy to: Mr. Russell Forbes, DMEA
Operating Committee
Admr. [illegible] File
Mr. Hedges, 4604
Field Team, Region IV
Mr. Thayer, 5216 GSA Bldg.
M
E. Chambers
Mr. Kirkland
Mr. Johnson
Docket File
Mr. Hook

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

Mr. Russell Forbes
Acting Administrator, Defense Materials
Procurement Agency
General Services Administration Bldg.
Washington 25, D. C.

Re: Docket No. [illegible]-49x - Fluorspar
Empire Mining & Engineering Company
Orion No. 16111 and Vesta #8 Claims
Boulder County, Colorado
Contract No. [illegible]

Dear Mr. Forbes:

I am enclosing one copy each of "Certification of Discovery or Development" and final report by the Field Team, both relating to the subject contract.

The exploration contract was signed September 8, 195[illegible], with the Government participating to the extent of 50% of $5,425 or $2,712.50.

The project was completed December 30, 195[illegible], after the expenditure of $5,425, which is the total accepted cost according to the report of review issued March 4, 1953.

There were three 3[illegible] holes drilled totaling 700 feet for an over-all cost of $7.75 per foot. The final field team report estimates 13,400 tons of fluorspar reserves in three short veins with an average grade of 54.9% CaF_2, 3.7% $CaCO_3$, 23.0% SiO_2, 8.2% Fe, 17.2% Al_2O_3, and 2.5% [illegible].

The DMEA concurs with the field team evaluation of the work performed and has certified that a discovery or development has resulted from the work under the contract.

Sincerely yours,

C. O. Mitchell

Administrator

Enclosures 2

LMBook:gmd 4/3/53
Copy to: Admr. R. File Operating Committee Mr. Hedges, 4604
Field Team, Reg. IV Mr. Thayer, 5216 GSA Bldg. Mr. Chambers
Mr. Markland Mr. F.E.Johnson Docket File Mr. Hook

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

APR 4 1953

Empire Mining & Engineering Company
P. O. Box 763
Boulder, Colorado

Re: Docket No. DMEA-492 - Fluorspar
Orion No. 16111 and Saddle #6 Claims
Boulder County, Colorado
Contract No. Idm-2401

Gentlemen:

Transmitted herewith is a Certification of Discovery or Development on Contract No. Idm-2401 on the Orion No. 16111 and Saddle #6 Claims in Boulder County, Colorado.

By the terms of the Exploration Project Contract and of the Certification, all production from the aforesaid claims from the date of the Exploration Project Contract, September 8, 1952, is subject to the Government's percentage royalty as set forth in the contract until the sum of $2,714.90 is paid or until September 8, 1962, whichever occurs first.

Payments should be made to Mr. [illegible] King, Executive Officer, Defense Minerals Exploration Administration Field Team, Region IV, Bureau of Mines, 224 New Customhouse Building, Denver 2, Colorado. Checks should be drawn payable to the Treasurer of the United States. The purchaser should be advised to deduct the royalties from the amount due on each shipment and forward check direct to the Executive Officer.

Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets showing quality and grade of the ore sold, the name of the purchaser, and the price and charges certified to be correct by your company.

You are requested to notify Mr. King of any changes in ownership or production rights that might have an effect on the Government's right to its percentage royalty. Also, if production ceases at any time for any extended period, please notify Mr. King at six-month intervals that no production has been made.

Sincerely yours,

C. O. Mitcoldorf

Administrator

LMBook:gad 4/6/53
Enclosure

Copy to: Admr. R. File, Docket File, Operating Committee
Mr. Johnson, Mr. Hedges, 4604, Mr. Thayer, 5216 GSA Bldg.
Field Team, Region IV, Mr. Chambers, Mr. Book

Docket No. 2492

Commodity Fluorspar

DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

STRATEGIC AND CRITICAL MINERALS EXPLORATION PROGRAM

TO: Chief, Finance Section, Budget and Finance Branch, Bureau of Mines

Please enter on the records of the Defense Minerals Exploration Administration, under the Strategic and Critical Minerals Exploration Program, the following contract, or amendment to contract.

Contract No. Idm-E 401

Date of Contract ~~or Amendment~~: Sept. 8, 1952

Name and Address of Operator:
Empire Mining & Engineering Co.
P.O. Box 763
Boulder, Colo.

Amount of Government participation $2,712.50

Percent of Government participation 50 %

Region: IV State: Colorado

J.L. Chambers (Name)
Chief, Contract Administration and Audit Division

(Title)

Date Delivered to Bureau of Mines, Washington Sept. 19, 1952 13808

Government Copy

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 2492

COMMODITY Fluorspar
Idm-E401

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this 8th day of September, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Empire Mining & Engineering Company - A Colorado Corporation, P.O. Box 763, Boulder, Colorado

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Colorado, County of Boulder, described as follows:[3] The Orion Claim U. S. Survey No. 16111 and the Saddle No. 6, an unpatented lode claim recorded in Book 722, Page 352, in the Boulder County Clerk & Recorder's Office, Boulder County Court House, Boulder, Colorado

the Operator represents and undertakes:[4]

of the Saddle No. 6

(*a*) That the Operator is the owner, in possession and entitled to possession/ and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:

None

of the Orion Claim No. 16111

(*b*) That the Operator is a lessee, in possession and entitled to possession/ and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within sixty (60) days from the date of this contract shall commence work on a project of exploration for[5] Fluorspar

in or upon the described land; and shall bring the project to completion within a period of four (4) months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay fifty (50) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $2712.50, which is 50 percent of $5,425.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

Empire Mining & Engineering Co.
(Operator)

By C. E. Zahn Jr.

By W. S. King
Executive Officer, DMEA
Field Team, Region IV

I, Fancheon M. Zahn, certify that I am the duly authorized secretary of the corporation named as Operator herein; that C. E. Zahn, Jr., who signed this contract on behalf of the Operator, was then duly authorized President of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Fancheon M. Zahn [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

MF-203

OWNER'S CONSENT TO LIEN

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

Orion lode mining claim U.S. Survey No. 16111

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Empire Mining & Engineering Company

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 2712.50, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 20 day of August, 1952.

Henry R. Evans [Seal]

[Seal]

[Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

EXHIBIT A

Description of the Work

Three diamond drill holes are to be drilled as indicated on the attached map and with the following specifications:

Hole No.	Approx. Bearing	Approx. Objective depth vertically below the surface	Length of hole	Approx. Dip of hole
1	S.65° W.	200 feet	240 feet	-65°
2	N.80° W.	200 feet	240 feet	-65°
3	S.78° W.	180 feet	220 feet	-65°
		Total -	700 feet	

All drilling is to be done with NX- or BX- size bits with the object of obtaining cores not smaller than BX size.

All drill cores must be stored properly in acceptable core boxes. Cores must be split and one-half retained for the use of the DMEA.

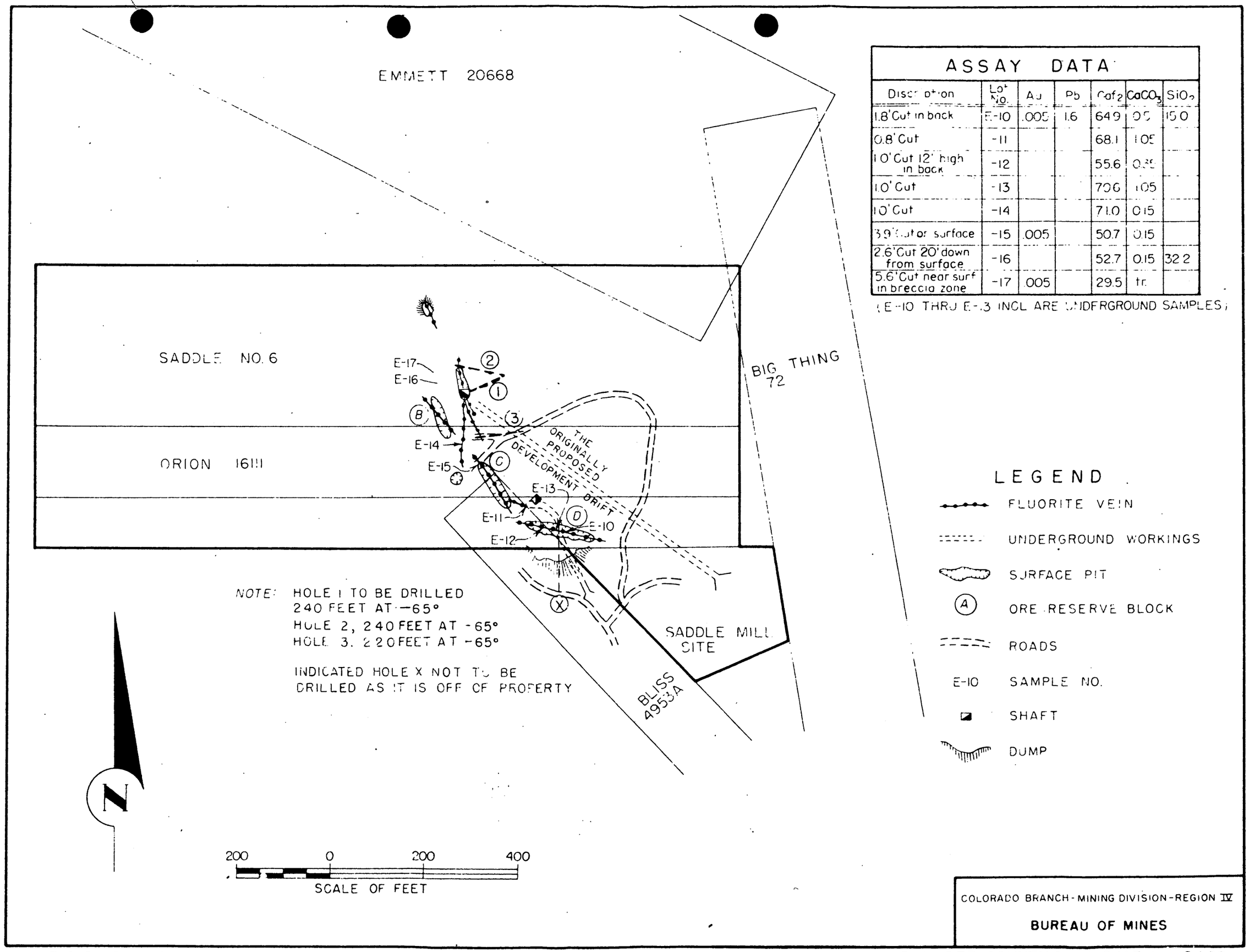
The location of the proposed work is shown on the attached map.

Estimate of Costs

700 feet of diamond core drilling including sampling, hauling water and all other expenses at $7.75 per foot.

Total cost of project - $5,425.00

Government's participation at 50% - $2,712.50

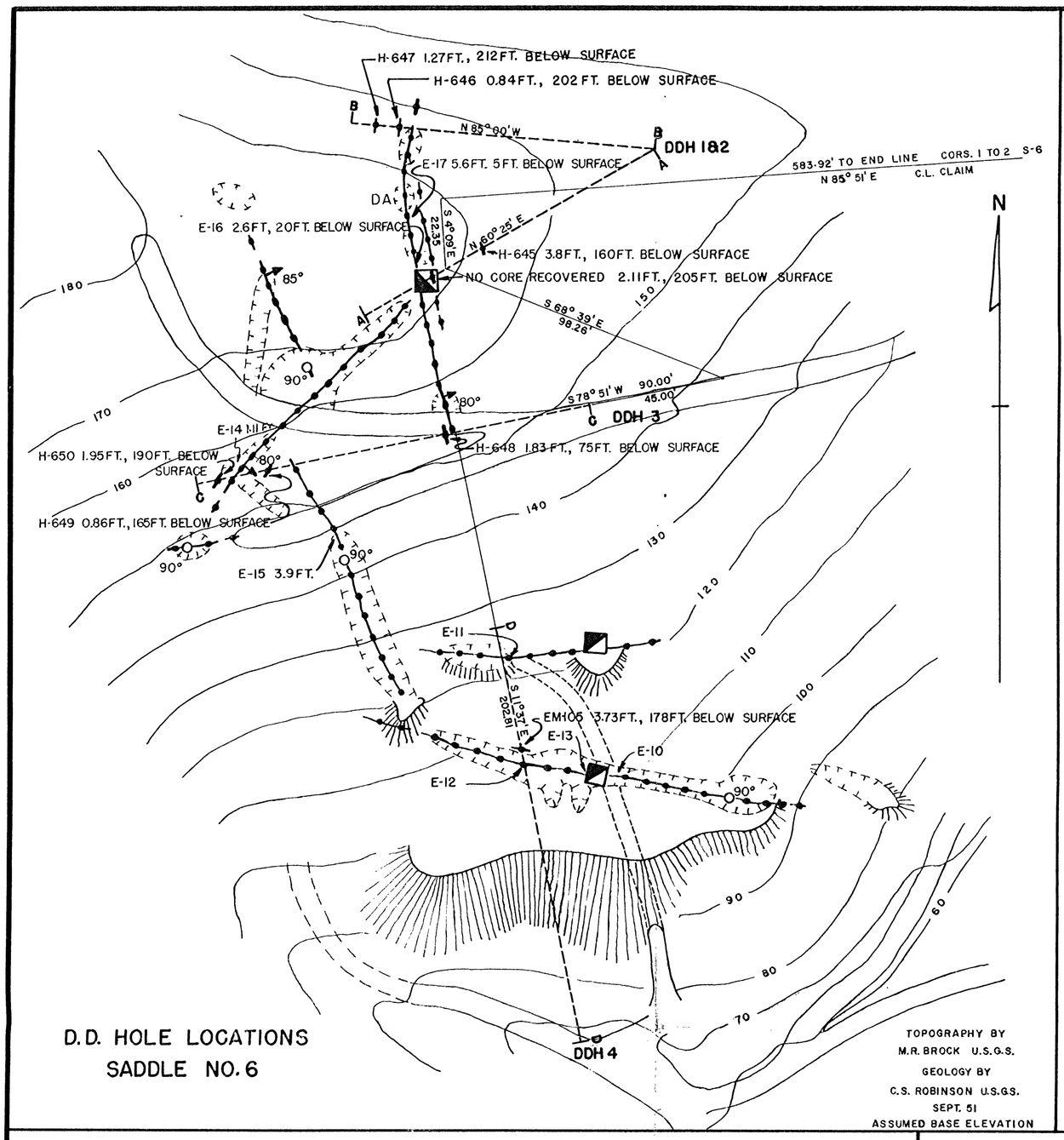


ASSAY DATA

Description	Lab No.	Au	Pb	CaF_2	$CaCO_3$	SiO_2
1.8' Cut in back	E-10	.005	1.6	64.9	0.5	15.0
0.8' Cut	-11			68.1	1.05	
1.0' Cut 12' high in back	-12			55.6	0.35	
1.0' Cut	-13			70.6	1.05	
1.0' Cut	-14			71.0	0.15	
3.9' Cut at surface	-15	.005		50.7	0.15	
2.6' Cut 20' down from surface	-16			52.7	0.15	32.2
5.6' Cut near surf in breccia zone	-17	.005		29.5	tr.	

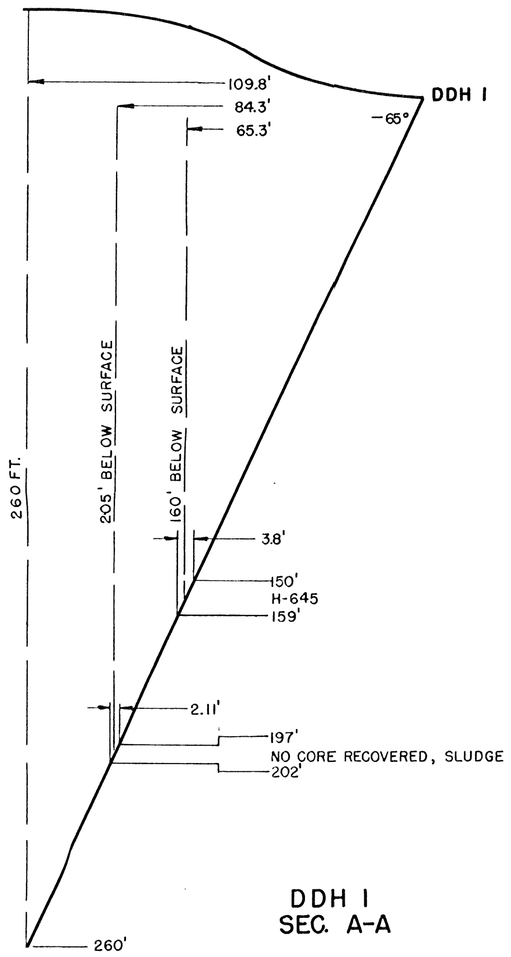
(E-10 THRU E-13 INCL ARE UNDERGROUND SAMPLES)

FIG. 2-ORION & SADDLE NO. 6 CLAIMS & WORKINGS OF THE EMPIRE MINING & ENGINEERING CO., JAMESTOWN, BOULDER COUNTY, COLO. D.M.E.A.- 2492

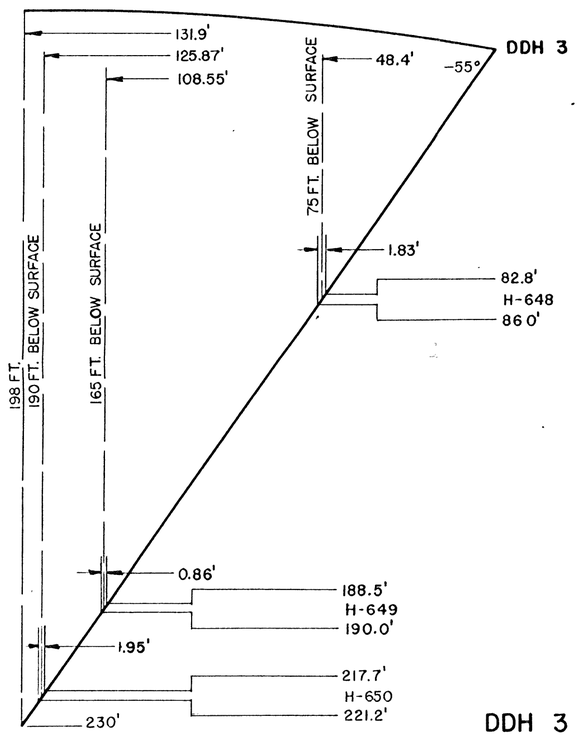


D.D. HOLE LOCATIONS
SADDLE NO. 6

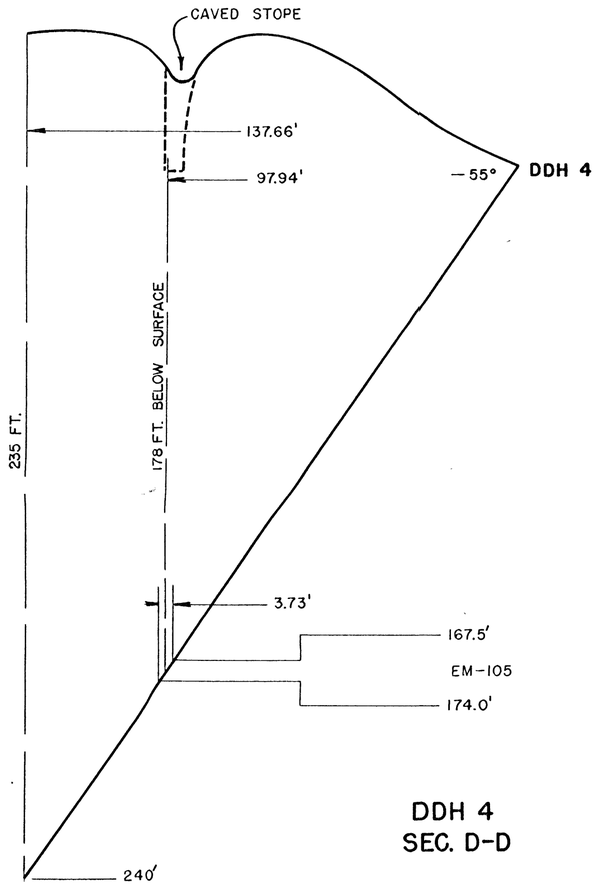
TOPOGRAPHY BY
M.R. BROCK U.S.G.S.
GEOLOGY BY
C.S. ROBINSON U.S.G.S.
SEPT. 51
ASSUMED BASE ELEVATION



DDH I
SEC. A-A



DDH 3
SEC C-C



DDH 4
SEC. D-D

EXPLANATIO

VEIN SHOWING DIP (DASHED

SHAFT AT SURFACE

PROSPECT PIT OR TRENCH

DA- DISCOVERY ADIT