DNEA 3644

DOCKET INDEX

ACTION DOCUMENTS

1. APPLICATION — DATE RECEIVED 1-1

2. CONTRACT — DATE 6-16-

3. TERMINATION AGREEMENT: — DATE 3-19-5

   a. Mutual (with/without repayment provision).
   b. Unilateral.
   c. Amendment with automatic termination clause and with/without repayment provision.

4. CERTIFICATION — DATE

5. AUDIT REPORT — DATE

6. AMENDMENTS - NUMBERS 1 — DATE 7-13-

Docket Copy

Indexed 3/13/56
"Appd. Sol. Off."

TERMINATION AGREEMENT

It is agreed this 19th day of March, 1956, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Ozark-Mahoning Company, hereinafter called the "Operator," parties to that certain Exploration Project Contract Idm-E818 (Docket No. DMEA-3644) dated June 16, 1955, hereinafter called the "Contract," that:

1. Effective February 5, 1956, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the fixed unit costs of work performed prior to said effective date.

3. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of the final report and final account.

4. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract, except as otherwise provided in this termination agreement.

IN WITNESS WHEREOF, these parties have executed this agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

By Robert A. Lawrence
Executive Officer
DMEA Field Team, Region V

OZARK-MAHONING COMPANY

By H. Irwin Tha
Title Vice Pres

Docket Copy

EXPLORATION PROJECT CONTRACT
OZARK-MAHONING COMPANY
DOCKET No. DMEA-3644

AMENDMENT NO.1

It is agreed this 13th day of July, 1955, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Ozark-Mahoning Company, a Delaware Corporation, that Exploration Project Contract Idm-E818 (Docket No. DMEA-3644), dated June 16, 1955, is amended as follows:

Article 3...."The work to be performed is described in Exhibit "A". The Operator on or before July 25, 1955 shall commence the work, and on or before July 25, 1956 (unless the Operator's obligation to complete the work is terminated-see Article 8) shall complete the work."

This amendment is needed because drilling equipment was in use on another property and was not available for use on the contract until July 21, 1955.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, nor the agreed unit cost of any item of work.

OZARK-MAHONING COMPANY

By H. Trwartha
Vice President

THE UNITED STATES OF AMERICA

By Robert A. Lawrence
EXECUTIVE OFFICER
DMEA REGION V

RECEIVED
AUG 2 8 1955

Docket copy

RECEIVED
JUL 13 1955

MF-200A
(Revised June 1954)

Docket No. DMEA-3644

Commodity Fluorspar, Lead and Zinc

Contract No. Idm-E 818

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
EXPLORATION PROJECT CONTRACT[1]
(Short Form)

It is agreed this 16th day of June, 1955, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Ozark-Mahoning Company, a Delaware corporation, whose mailing address is Fowlerville, Illinois, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200A), the attached Exhibit "A," Annex I, and map.

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of Illinois, County of Pope, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] See Annex I of [5] the mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] See Annex I, [7] — recorded in Book —, page —, official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: none

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title of the land (lessor, seller, optionor, etc.), are attached, as follows: Consent to Lien of the Lessors of the leased land.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 7, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 7(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of fluorspar, lead and zinc. The work to be performed is described in Exhibit "A." The Operator on or before July 14, 1955 shall commence the work, and on or before July 14, 1956 (unless the Operator's obligation to complete the work is terminated—see Article 8) shall complete the work.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—A fixed cost for each unit of work to be performed (per foot of drifting, per foot of drilling, per hour of operations, etc.) is hereby agreed upon, and is set forth in Exhibit "A" in connection with the estimated total cost of the project in the sum of $33,360.00. The Government will contribute 50 percent of the fixed unit costs as work is performed, in a total sum not in excess of $16,680.00: *Provided,* That until the Operator has rendered to the Government his final report, and any final 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 10 percent of the estimated total cost of the work. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 6(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. To the extent that excesses over fixed unit costs or any excess over the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such excesses for his own account without contribution by the Government. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing a detailed statement of units of work performed during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and the fixed unit costs incurred for each type of work; and (3) a Narrative Report of the work

performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records or accounts.

ARTICLE 7. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 6) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 8. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon the Government shall be free of all obligation to pay on account of units of work not then performed, and the Operator shall be free of all further obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 8 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 9. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 10. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 11. *Changes and added provisions.*—

Executed in sextuplicate the day and year first above written.

CZARK-MAHONING COMPANY
(Operator)

By J. G. Trewartha
Vice President

THE UNITED STATES OF AMERICA

By Frank E. Johnson
ACTING Administrator, Defense Minerals Exploration Administration

"Appd. Sol. Off."
Hauk
Talbut
Selfridge

I, A. M. Sperberg, certify that I am the assistant secretary of the corporation named as Operator herein; that J. G. Trewartha who signed this contract on behalf of the Operator, was then Vice 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.

A. M. Sperberg

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—70618-1

RECEIVED
JUL 13 1955

EXPLORATION PROJECT CONTRACT
OZARK-MAHONING COMPANY
DOCKET NO. DMEA-3644

ANNEX I

The land referred to in Article 2 of the contract form is in Section 27, Township 12 South, Range 7 East and is as follows:

Land leased by Operator (mineral rights)

NE quarter of the NW quarter and the NW quarter of the NE quarter.

Land owned by Operator (mineral rights)

The NE quarter of the NE quarter.

RECEIVED
JUL 1 8 1956

EXPLORATION PROJECT CONTRACT
OZARK-MAHONING COMPANY
DOCKET NO. DMEA-3644

EXHIBIT "A"

Description of the Work

Explore for fluorspar, lead and zinc by AX minimum size diamond drilling. The purpose of the drilling is to determine the location and characteristics of the Structures B, C, D, E, and F, shown on the attached Map #1, and possibly other unknown ore-bearing structures.

The work is divided into two successive stages. The Operator shall perform Stage I and so much of the work under Stage II as is approved in advance in writing by the Government.

The location, inclination, direction, and extent of all drilling is subject to the approval of the Government.

Stage I

Stage I consists of drilling approximately 10 holes along the approximate line marked "Cross sectional line" on Map #1, at plus or minus 45 degrees to the favorable ore horizon. The holes shall average approximately 450 feet in depth.

The initial hole shall probe for the extensions of Structure B. Subsequent holes shall be drilled to the northwest of the initial hole at no closer than 200-foot intervals. No portion of a drill hole may be within 150 feet of the external boundary of the land described in the contract.

Stage II

Stage II consists of not to exceed 7,500 feet of drilling on favorable structures indicated in Stage I. The minimum interval between holes shall be 200 feet.

Fixed Unit Costs

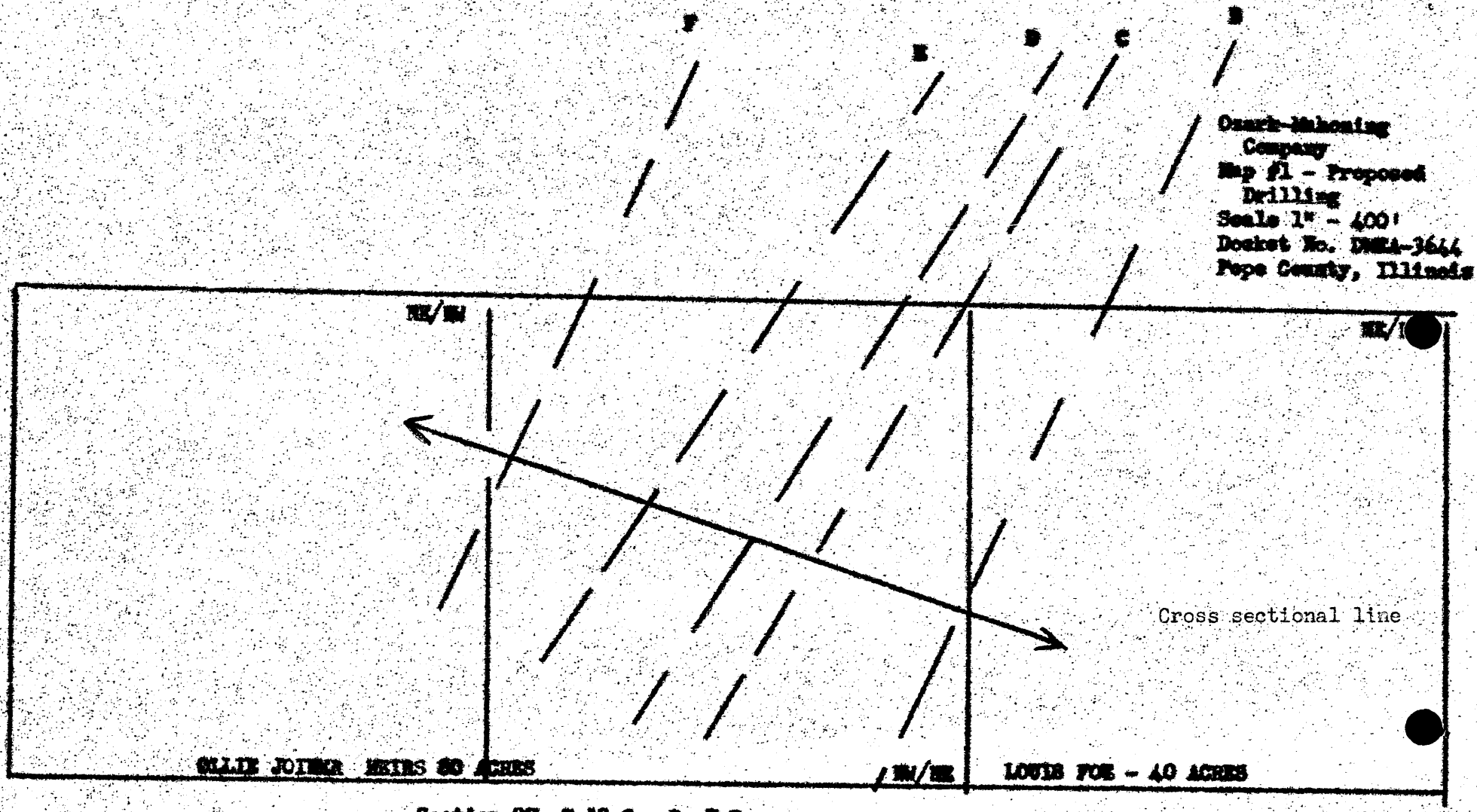
(The fixed unit costs include all costs whatsoever necessary to complete the project.)

Stage I

4,500 feet of diamond drilling @ $2.78/ft.	$12,510.00	

Stage II

7,500 feet of diamond drilling @ $2.78/ft.	20,850.00	
Estimated Total Fixed Unit Costs		$33,360.00
Government Participation @ 50%		$16,680.00



Section 27, T-12 S., R. 7 E.

MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator Ozark-Mahoning Company
Docket No. DMEA-3644
Contract No. Idm-E 618
Contract Date JUN 16 1955

CONSENT TO LIEN

RECEIVED
JUL 13 1955

To the United States of America:

Referring to that certain land in the County of Pope, State of Illinois, described as follows:1/

The NE Quarter of the NW Quarter and the NW Quarter of the NE Quarter

Section 27, Township 12 South, Range 7 East.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of a percentage royalty on production as may be provided for by the contract;2/ and represents and undertakes that there are no claims, liens, or encumbrances upon the undersigned's right, title, or interest in the land prior to that hereby granted to the Government other than the following:3/

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

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

3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

Dated this 30th day of June, 1955.

Maggie Joiner	1 Maggie Joiner		
B. E. Joiner	2 B. E. Joiner	[Seal]	Rosiclare, Hardin County, Ill.
Eugene Rose	3 E. Eugene Rose		" " " " "
Gladys Rose	4 Gladys Rose	[Seal]	Marion, Crittenden Co., Ky.
Mildred Lowry	5 Mildred Lowry		" " " " "
I. A. Lowry	6 I. A. Lowry	[Seal]	Albert Lea, Freeborn Co., Minn.
			" " " " "

I, _____ certify that I am the _____ (Secretary, etc.) of the corporation named herein; that _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D.C.
ROOM POST OFFICE BLDG.
KNOXVILLE 2, TENN.

RECEIVED
FEB 20 1956

February 17, 1956

Mr. A. G. Johnson
Ozark-Mahoning Co.
Mahoning Mining Division
Rosiclare, Illinois

Re: DMEA-364h, Idm-E818
Fluorspar, lead-zinc
Jeimer-Fee Tract, Pope County, Ill.

Dear Mr. Johnson:

Mr. Burmeister has forwarded to me your letter of February 7, and your final report on the drilling on the Jeimer and Fee tracts.

From the results, it appears that termination of the contract is the appropriate action. This will require execution of a termination agreement signed by both the Government and the Company, and before we can recommend that, it may be necessary to have a final visit and review by a Government representative. This should have been done upon completion of hole No. 12. I am, therefore, asking Mr. Dewey Amos, Geologist, U. S. Geological Survey, who is located at Carbondale, Illinois, to prepare a final geologic report on the project. If Mr. Amos feels that he needs further information, he will contact you and arrange for a visit.

Very truly yours,

Robert A. Laurence, Executive Officer
DMEA Field Team, Region V

RAL/sm
cc:
Lynch
Amos
Millar
Files
Opr. Gen.-2

DOCKET COPY
Surname:

Hon
Anderson
Chambers
Selbridge
K J Johnson

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

SEP 26 1956

Ozark-Mahoning Company
Mahoning Mining Division
Rosiclare, Illinois

Re: Docket No. DMEA-3641-Fluorspar, lead and zinc
Ozark-Mahoning Company
Joiner-Fox Trust
Pope County, Illinois
Contract No. Ida-2618

Gentlemen:

Reference is made to your terminated exploration contract with the Government.

We sincerely regret that the work performed did not result in a certification of discovery or development under the provisions of the contract. In the absence of such certification, the Government 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 project. Your attention, however, is called to the provisions of the contract which require the operator to keep and preserve certain records for the period indicated.

Your interest in the DMEA exploration program and participation therein are fully appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

JHopkins:ms 9/21/56
Copy to: Docket
Mr. Chambers
Field Team, Region V
Mr. Kiilsgaard, 5222
Mr. McDougal, 3522
Mr. Houk
Admr. R. File

Maggie Joiner)
B. E. Joiner)
Eugene and Gladys Rose) landowners
I. A. and Mildred Lowry)

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

DOCKET COPY
Surname:

Hop
Anderson
H Johnson

SEP 26 1956

Mr. and Mrs. I. A. Lowry

Albert Lea, Minnesota

Re: Docket No. DMEA-3644-fluorspar, lead and zinc
Ozark-Mahoning Company
Joiner-Foe Tract
Pope County, Illinois
Contract No. Idm-E818

Dear Mr. and Mrs. Lowry:

Reference is made to the Owner's Consent to Lien which you executed on June 30, 1955, in connection with the DMEA contract for an exploration project on your property located in Pope County, Illinois.

For your information, there is enclosed a copy of our letter of this date to the Ozark-Mahoning Company advising that the Government retains no claim or lien against the property described in the contract or on any future production therefrom.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosure

JHopkins:ms 9/24/56
Copy to: Docket
Field Team, Region V
Mr. Kiilsgaard, 5222
Mr. McDougal, 3522
Mr. Houk
Admr. R. File

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

600

DOCKET COPY
Surname:

Hopkins
Anderson
Chambers
Hedge
H E Johnson

SEP 2 3 1956

Mr. and Mrs. Eugene Rose

Marion, Kentucky

Re: Docket No. DMEA-3644-fluorspar,
lead and zinc
Ozark-Mahoning Company
Joiner-Foe Tract
Pope County, Illinois
Contract No. Idm-E818

Dear Mr. and Mrs. Rose:

Reference is made to the Owner's Consent to Lien which you executed on June 30, 1955, in connection with the DMEA contract for an exploration project on your property located in Pope County, Illinois.

For your information, there is enclosed a copy of our letter of this date to the Ozark-Mahoning Company advising that the Government retains no claim or lien against the property described in the contract or on any future production therefrom.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosure
JHopkins:ms 9/24/56
Copy to: Docket
Field Team, Region V
Mr. Kiilsgaard, 5222
Mr. McDougal, 3522
Mr. Houk
Admr. R. File

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

DOCKET COPY
Surname:

Hopkins
Anderson
Chambers
Lethridge
FZJoiner

SEP 26 1956

Mr. B. E. Joiner

Rosiclare, Illinois

Re: Docket No. DMEA-3644-fluorspar, lead and zinc
Ozark-Mahoning Company
Joiner-Foe Tract
Pope County, Illinois
Contract No. Idm-E818

Dear Mr. Joiner:

Reference is made to the Owner's Consent to Lien which you executed on June 30, 1955, in connection with the DMEA contract for an exploration project on your property located in Pope County, Illinois.

For your information, there is enclosed a copy of our letter of this date to the Ozark-Mahoning Company advising that the Government retains no claim or lien against the property described in the contract or on any future production therefrom.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosure

JHopkins:ms 9/24/56
Copy to: Docket
Field Team, Region V
Mr. Kiilsgaard, 5222
Mr. McDougal, 3522
Mr. Houk
Admr. R.File

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

DOCKET COPY
Surname:
Hon
Anderson
Chamber
Lebridge
Johnson

SEP 26 1956

Mrs. Maggie Joiner

Rosiclare, Illinois

Re: Docket No. DMEA-3644-fluorspar, lead and zinc
Ozark-Mahoning Company
Joiner-Fee Tract
Pope County, Illinois
Contract No. Idm-2818

Dear Mrs. Joiner:

Reference is made to the Owner's Consent to Lien which you executed on June 30, 1955, in connection with the DMEA contract for an exploration project on your property located in Pope County, Illinois.

For your information, there is enclosed a copy of our letter of this date to the Ozark-Mahoning Company advising that the Government retains no claim or lien against the property described in the contract or on any future production therefrom.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosure

JHopkins:ms 9/24/56
Copy to: Docket
Field Team, Region V
Mr. Kiilsgaard, 5222
Mr. McDougal, 3522
Mr. Houk
Admr. R. File

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

Project Summary Report

September 21, 1956

By: James Hopkins

1. Docket No. DMEA-3644-fluorspar, lead and zinc
Ozark-Mahoning Company
Joiner-Foe Tract
Pope County, Illinois
Contract No. Idm-E818

Operator: Ozark-Mahoning Company
Rosiclaire, Illinois
Operator's Property Rights:
Lessee of Mineral Rights in NE¼, NW¼ and NW¼ of the NE quarter, Sec 27, T. 125., R. 7 E., and owner of Rights in NE¼,NE¼, all in Pope County.

2. Contract: dated June 16, 1955
(a) Work authorized:

Stage I
Diamond drilling 4,500 ft. @ $2.78/ft. $12,510.00

Stage II
Diamond drilling 7,500 ft. @ $2.78/ft. $20,850.00

Estimated Total Cost $33,360.00

(b) Amendments:
No. 1 dated July 13, 1955, changes dates of starting and completion.
(c) Work completed
Diamond drilling 5055 ft. @ $2.78/ft. $14,052.90

Work began July 21, 1955
Work terminated by mutual agreement February 5, 1956, because of the lack of significant mineralization and structure.
Final Operator's Report dated February 6, 1956.
Final Field Team Report dated March 6, 1956.

3. Audit:
Report of Review dated March 9, 1956

Total Cost as billed by the operator	$14,052.90
Exceptions	none
Total Accepted Cost	$14,052.90
Government participation	$ 7,026.45

4. Certification of Discovery - none issued

5. Comments:

Geologic Premise:

Considerable exploration by drilling of the areas surrounding the Joiner and Foe tracts has established a geologic pattern of structures that may extend into this area. Since the area is covered by a heavy thickness of alluvion, exploration of these structures can only be satisfactorily performed by diamond drilling to intersect these structures in favorable stratigraphic horizons.

Geologic Criteria upon which project was based:

A thick series of Pennsylvanian rocks underlie the area.

Normal faults in adjacent areas can be projected across this area.

Mineralization along these faults in favorable horizons have resulted in the sizable economic deposits of fluorspar, lead and zinc.

Geologic Criteria developed during the project:

Some fluorspar, galena and sphalerite mineralization was encountered in three contiguous drill holes on Fault Structure "A" in widths from 1' to 1½'. Similar mineralization was encountered in two contiguous drill holes on Fault Structure "C" in addition to the two mineralized faults, one unmineralized fault was revealed by drilling.

Only one highly favorable structure, "A" is present and no significant mineralization was discovered on it.

Future Possibilities:

It is concluded (by the Field Team), that no ore bodies were discovered under this exploration program which could be profitably mined at present or in the forseeable future, and that additional exploration is not warranted.

Recommendations:

In accordance with the above conclusions, the Field Team recommends that no certification of discovery or development be issued.

The Nonmetallic Minerals Division and the Commodity Divisions of the Geological Survey and Bureau of Mines concur in the recommendation.

James Hopkins

IN REPLY REFER TO:

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

RECEIVED

June 6, 1956

Re: DMEA 3644 Idm-E818
Ozark-Mahoning Co.,
Joiner-Foe Tract
Pope County, Illinois
$33,360.00 - Fluorspar

Memorandum

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

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

Subject: Review of Field Team Final report

The applicant requested assistance in diamond drilling the connecting link of a fault structure and searching for other faults by crossectional angle hole drilling.

The known fault "A", which had been drilled and in places shown to be ore bearing, northeast and southwest of the tract was found to be somewhat mineralized but lacking in bodies large enough to mine. Another fault, "C", was encountered but it also lacks ore bodies though mineralized like the "A" fault.

A total of 5,055 feet of Ax-size holes was drilled at a cost of $14,052.90 out of the $33,360.00 approved for the project. Work was stopped by the operator because of lack of significant mineralization.

As no ore was found and none can be inferred as a result of the drilling, the examiners and the Field Team recommend that no certification be imposed upon the property.

I concur with that recommendation.

N. E. Nelson

N. E. Nelson

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

RECEIVED
APR 5 - 1956

April 5, 1956

Memorandum

To: Lawrence G. Houk, Chief, Non-Metallic Minerals Division, Defense Minerals Exploration Administration

From: Commodity Specialist, Branch of Construction and Chemical Materials

Subject: Review of final Field Team report dated March 19, 1956 on DMEA 3644, Idm E-818, Fluorspar-Lead-Zinc, Ozark Mahoning Company, Rosiclare, Illinois, Joiner-Foe tract, Pope County, Illinois. Cost of project, $14,052.90.

The subject report of the Field Team is complete and its conclusion is concurred in that the work completed did not result in discovery or development of a minable ore body. However, in drilling on the Reid tract, immediately southeast of the contract area, the Field Team reports that the operator has been able to extend mineralization discovered along structure "A". Although the northernmost hole drilled on the Reid tract did not show mineralization, the Field Team states that there is a possibility that this mineralization may extend northeastward along structure "A" into the contract area. The operator evidently plans to test this possibility by drilling at its own expense a hole near the southern boundary of the Joiner tract although it discontinued the DMEA project on the Joiner tract voluntarily.

Since there is some possibility that an ore body may be located by the operator at least partly in the contract area and partly as a result of work connected with this project, there may be some question as to whether or not it should now be determined that no certification be made. However, it is believed that this possibility is so slight that the Field Team's recommendation of no certification should be approved.

John E. Holtzinger

John E. Holtzinger

Talbert
Chambers

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

MAR 29 1956

Mr. Robert A. Laurence
Executive Officer
DMEA Field Team, Region V
Room 13, Post Office Building
Knoxville 2, Tennessee

Dear Mr. Laurence:

Enclosed are the original and two copies of Reports of Review covering the following completed or terminated Exploration Project Contracts:

Contract No.	Docket No.	Operator
Idm-E818	DMEA-3644 ✓	Ozark-Mahoning Company
Idm-E881	DMEA-3926	Branch Mining Company

If you concur with the facts stated therein, the original and one copy of each Report of Review should be forwarded to the Certifying Officer and one copy of each should be retained in your files. If, for any reason, a Report of Review does not have your concurrence please return all copies thereof to this Division.

Copies of Field Team reports received in this office have provided a means of verification for the work performed under unit costs provisions of the contracts.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Chief
Contract Administration
and Audit Division

Enclosures

EDTalbert/ama
March 29, 1956
Copy to: Docket - DMEA-3644 ✓
Admr. Reading File
Helen Miller
Mr. Chambers

R.G.H.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 25 POST OFFICE BLDG.
KNOXVILLE 2, TENN.

RECEIVED
MAR 2 - 1956

March 26, 1956

Memorandum

To: Operating Committee, DMEA - Washington

From: Executive Officer, DMEA - Region V - Knoxville, Tennessee

Subject: DMEA-3644, Idm-E818, Termination Agreement on-
Ozark-Mahoning Co., Rosiclare, Illinois (Fluorspar)

Transmitted are three signed copies of the subject termination agreement. The usual distribution of the other copies has been made.

Robert A. Laurence

Robert A. Laurence

3644

Date 3-26

Referred to:

1. ~~Mr. Hatterdorf~~
2. ~~Mr. Johnson~~
3. ~~Mr. Chambers~~
4. Docket Control Mails and Files
5. _____ Division
6. Docket Control Mails and Files

Note comments in report regarding:

1. Fine — N.G.!
2.
3.
4.

and take appropriate action.

- - - - - -

Action taken by Division:

ROBERT E.

Initials

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 1 POST OFFICE BLDG.
KNOXVILLE 2, TENN.

RECEIVED
MAR 21 1956

March 19, 1956

Memorandum

To: Operating Committee, DMEA - Washington

From: DMEA Field Team, Region V - Knoxville, Tennessee

Subject: Field Team Final Report, DMEA-3644, Idm-E818, Fluorspar-Lead-Zinc. Ozark-Mahoning Co., Rosiclare, Illinois
Moiner-Foe Tract, Pope County, Ill.

Enclosed are four copies of the subject report. Work has been suspended, and we have requested permission to terminate the contract by mutual consent.

Certification is not recommended.

Robert A. Laurence
Robert A. Laurence
Executive Officer, DMEA
Region V

Wm. A. Beck
Wm. A. Beck, for V. J. Lynch, Member
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
3-23-56
(date)

Field Team's Final Report on Terminated Contract

by

H. L. Burmeister and Dewey H. Amos 1/

RECEIVED
MAR 21 1956

Docket DMEA No.3644 (Fluorspar, Lead,Zinc)
Contract No. Idm-E818
Ozark-Mahoning Co., Rosiclare, Illinois
Joiner-Foe Tract, Pope County, Illinois

- Summary -

The final field examination was made by the geologist since only geological data was required.

This exploration was conducted on two adjoining parcels of land situate in Pope County, Illinois, Section 27, Twsp. 12 South, Range 7 East, and consists of the following: (1) The Joiner Tract of 80 acres on which the Operator holds a mineral rights lease, and (2) The Foe Tract of 40 acres on which the Operator owns the mineral rights.

The contract was divided into two stages and provided for diamond drilling an unspecified total number of holes at minimum intervals of 200 feet and for a maximum total of 12,000 feet at a cost not to exceed $33,360.00. Exploration was conducted on a unit cost basis of $2.78 per foot. There were diamond drilled a total of 5055 feet of AX-size core drill holes; 3836 feet under Stage I and 1219 feet under Stage II. All drilling was done with Operator-owned equipment.

Mineralization in the immediate area is confined to fault zones and in practically all cases occurs where the wall rocks of the faults are of the Ste. Genevieve formation. Mineralization is usually confined to a stratigraphic interval of about 120 feet, from approximately 50 feet above the top to about 40 feet below the base of the Rosiclare sandstone.

Five fault structures bearing northeast-southwest were known to exist to the northeast of the exploration area. The purpose of Stage I

1/ Dewey H. Amos, Geological Survey
H. L. Burmeister, Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
3-23-56
(date)

was to determine the location and characteristics of these structures by drilling approximately 10 holes along a line crosscutting the strike of the faults. Drilling under Stage II was to be undertaken only if the results obtained in Stage I were encouraging.

Some fluorspar, galena and sphalerite mineralization was encountered in three contiguous holes on fault structure "A" in widths from 1 to 1½ feet. Similar mineralization was encountered in two contiguous drill holes on fault structure "C". In addition to the two mineralized faults, one unmineralized fault was revealed by the drilling.

Due to discouraging results the Operator stopped work on February 4, and submitted his Final Report on February 7, 1956. The Government had not been previously informed of intention to stop work.

No production resulted from exploratory work.

- Conclusions -

Current drilling by the Ozark-Mahoning Co. on the Reid Tract immediately south of the contract area has extended the mineralization discovered on fault structure "A" both downdip and southwestward along the strike. The possibility exists that this mineralization may extend northeastward along fault structure "A" into the Joiner tract although the northernmost hole (No.1) drilled on the Reid tract was blank. The Company plans to drill a hole in the near future at their expense near the southern boundary of the Joiner tract to intersect structure "A". The southernmost hole (N7) drilled on the Stotlar tract just north of the Foe tract was blank, indicating that the Stotlar body does not extend into the contract area.

Only one highly favorable structure,"A", is present and no significant mineralization was discovered on it. Unexplored portions of structure "A" in the Joiner-Foe tract are too short along the strike of the fault to contain minable ore bodies.

The Operator estimates that an ore body of average grade for the area and located in favorable stratigraphy (about 250 feet), must contain a minimum of 20,000 tons to be profitably mined under present economic conditions. It is also estimated that under optimum economic conditions an ore body of the same grade and stratigraphic location would have to contain a minimum of 10,000 tons to insure profitable mining.

It is concluded that no ore bodies were discovered under this exploration program which could be profitably mined at present or in the foreseeable future, and that additional exploration of the Joiner-Foe tract is not warranted at this time either by private capital or with Government assistance.

- Recommendations -

In accordance with the above conclusions the Field Team representatives recommend that no certificate of discovery or development be issued.

- Description of Work Completed -

Work under this contract was started on July 21, 1955 and stopped on Feb. 4, 1956. Exploration was stopped by the Operator because of the lack of significant mineralization and structures.

Twelve AX-size holes were diamond core drilled with company-owned equipment for a total of 5055 feet at a total cost of $14,052.90. Nine holes totaling 3836 feet were completed under Stage I. These holes were collared at approximate 250-foot intervals along a "cross-sectional line" trending WNW-ESE across the Joiner-Foe tracts. All holes were drilled in a southeasterly direction on a -50° inclination. Three holes totaling 1219 feet were completed under Stage II of the contract. Two of these were drilled northeast of hole No. 1 to intercept fault zine "A" found in hole No. 1,and also on tracts to the north and south of the Joiner-Foe tract.These holes were inclined -50° to the southeast. One hole was drilled to the northeast

of hole No. 3 to encounter a fault zone found in No. 3. (see attached map)

Cross sections of drill holes accompany the Operator's final report.

- Geology -

The ore deposits in the vicinity of the Joiner and Foe tracts occur as veins in steeply dipping normal faults that cut gently dipping limestone, sandstone and shale beds of Mississippian age. The deposits consist of fluorspar with lesser amounts of sphalerite and galena in a gangue of calcite and barite.

Most of this area is covered with alluvium. A few scattered outcrops of sandstone occur which the drilling indicated as being the Cypress sandstone of Chester age. It is a white to light brown, fine-grained sandstone usually about 110 feet thick in this district. Only the lower few feet of the Cypress is present in the Joiner-Foe tract. The Paint Creek formation underlies the Cypress sandstone. Drilling revealed that this formation is 20-60 feet thick in the area and consists of gray, thinly bedded sandstone with numerous shale partings. Considerable variation in thickness of the formation is caused by an unconformity between it and the overlying Cypress sandstone. Underlying the Paint Creek formation is the Bethel sandstone of lower Chester age. It is fine-grained, white to light gray in color and about 90 feet thick. The Renault formation, the basal formation of the Chester series, underlies the Bethel sandstone. The formation is 80-85 feet thick and consists of alternating beds of gray limestone and gray shale. Limestones in the upper half of the formation are often oolitic. Underlying the Renault formation is the Ste Genevieve formation of Meramec age. This formation is divided into three members:

the Levias limestone member - the upper member, the Rosiclare sandstone member, and the Fredonia limestone member. The Levias is a light to dark gray oolitic limestone 30-40 feet thick, the Rosiclare a gray to green calcareous sandstone 20-30 feet thick, and the upper part of the Fredonia is a gray to brown limestone. All drill holes were bottomed in the upper portion of the Fredonia limestone.

The beds in the area strike about north-south and dip about 3° westward. Two fault zones with gravity-type displacement were encountered during the drilling. Both strike about N.27°E. The easternmost fault zone-designated as A - dips about 80° to the northwest and has a displacement along the dip of approximately 55 feet. This is the same structure on which two ore bodies have recently been discovered by Ozark-Mahoning Company: on the Stotlar tract to the northeast of the contract area and on the Reid tract to the southwest. The other fault zone (C) is about 400 feet west of A. It dips about 80° to the southeast and has a displacement along the dip of about 10 feet. This structure may be one of the faults encountered to the northeast on the Fairbairn tract (DMEA-2838). No indication of the other faults evidenced by the drilling on the Fairbairn tract were found in the contract area except for a possible minor fault encountered in Hole No. 2.

- Ore Reserves -

No minable reserves were indicated by the drilling nor can any be inferred.

- Expenditures -

Total Approved	$33,360.00
Total Cost of Project	14,052.90
Government's share of cost	7,026.45
Government's share unexpended	9,653.55
Value of exploration production	None
Government royalty	None

- Efficiency and Competency of Operator -

The Operator conducted the exploration work in the same efficient and competent manner evidenced in previous contracts. Monthly reports were very well coordinated, complete and accurate in technical detail and cost data.

- Equipment Purchased -

No equipment was purchased for this project.

Summary Lots of Drill Holes

No. 1 - Located 363'N. and 358' W of SE cor. of NW¼,NE¼,Sec.27,T12S,R7E.
Inclined -50° in a S.65°E.direction

0 - 34	Alluvium and Cypress sandstone
34 -122	Paint Creek formation
122 -236	Bethel sandstone
236 -268	Renault formation
268 -269½	Fault. Calcite stringers, pyrite and gouge.
269½-275	Renault formation
275 -316	Levias limestone member
316 -354	Rosiclare sandstone member
354 -399	Fredonia limestone member

No. 2 - Located 474' N. and 582'W. of SE cor. of NW¼, NE¼,Sec.27,Ti2S,R7E.
Inclined -50° in a S.65°E. direction.

0 - 38	Alluvium and Cypress sandstone
38 -126	Paint Creek formation
126 -188	Bethel sandstone
188	Possible fault. Sandstone and barite breccia
188 - 231	Bethel sandstone
231 - 332	Renault formation
332 - 374	Levias limestone member
374 - 410	Rosiclare sandstone member
410 - 431	Fredonia limestone member

No. 3 - Located 580'N. and 802'W. of SE cor. of NW¼,NE¼,Sec.27,T12S,R7E.
Inclined -50° in a S.65°E. direction.

0 - 35	Alluvium and Cypress sandstone
35 - 97	Paint Creek formation
97 -208	Bethel sandstone
208 -346½	Renault formation
346½-349	Fault. Barite with some calcite and acid-grade fluorspar
349 -355	Levias limestone member
355 -355½	Calcite and fluorspar stringers
355½-378	Levias limestone member
378 -422	Rosiclare sandstone member
422 -437	Fredonia limestone member

No. 4 - Located 691'N. and 1028'W. of SE cor.of NW¼,NE¼,Sec.27,T12S,R7E.
Inclined -50° in a S.64°E. direction.

0 - 20	Alluvium and Cypress sandstone
20 - 47	Paint Creek formation
47 -172	Bethel sandstone
172 -269	Renault formation
269 -326	Levias limestone member
326 -368	Rosiclare sandstone member
368 -414	Fredonia limestone member

No. 5 - Located 798'N. and 1255'W. of SE cor. of NW¼, NE¼,Sec.27,T12S,R7E.
Inclined -50° in a S.65°E. direction.

0 - 24	Alluvium and Cypress sandstone (?)
24 - 54	Paint Creek formation
54 -174	Bethel sandstone
174 -270	Renault formation
270 -318	Levias limestone member
318 -359½	Rosiclare sandstone member
359½-400	Fredonia limestone member

No. 6 - Located 916'N. and 1528'W. of SE cor. of NW¼,NE¼,Sec.27,T12S,R7E.
Inclined -50° in a S.65°E. direction

0 - 65	Alluvium and Cypress sandstone
65 -125	Paint Creek formation
125 -237	Bethel sandstone
237 -335	Renault formation
335 -384	Levias limestone member
384 -422	Rosiclare sandstone member
422 -459	Fredonia limestone member

No. 7 - Located 1024'N. and 1763'W. of SE cor. of NW¼,NE¼,Sec.27,T12S,R7E.
Inclined -50° in a S.63°E. direction

0 - 66	Alluvium and Cypress sandstone
66 -127	Paint Creek formation
127 -240	Bethel sandstone
240 -344	Renault formation
344 -400	Levias limestone member
400 -425½	Rosiclare sandstone member
425½-467	Fredonia limestone member

No. 8 - Located 1136'N. and 1993'W. of SE cor.of NW¼,NE¼,Sec.27,T12S,R7E.
Inclined -50° in a S.64°E. direction.

0 - 45	Alluvium and Cypress sandstone
45 - 86	Paint Creek formation
86 -204½	Bethel sandstone
204½-311	Renault formation
311 -357	Levias limestone member
357 -388	Rosiclare sandstone member
388 -407	Fredonia limestone member

No. 9 - Located 1254'N. and 2216'W of SE cor.of NW¼,NE¼,Sec.27, T12S,R7E.
Inclined -50° in a S.62°E. direction

0 - 47	Alluvium and Cypress sandstone
47 - 99	Paint Creek formation
99 -216	Bethel sandstone
216 -313	Renault formation
313 -370	Levias limestone member
370 -398	Rosiclare limestone member
398-422	Fredonia limestone member

No. 10 - Located 576'N. and 300'W. of SE cor.of NW¼,NE¼,Sec.27,T12S,R7E.
Inclined -50° in a S.61°30'E. direction

0 - 27	Alluvium and Cypress sandstone
27 - 72	Paint Creek formation
72 -174	Bethel sandstone
174 -278	Renault formation
278 -282½	Levias limestone member
282½-284	Fault. Calcite, acid-grade fluorspar, and shines of sphalerite and galena.
284 -303	Levias limestone member
303 -322	Rosiclare sandstone member
322 -324	Fault. Calcite with traces of fluorspar, galena, sphalerite and barite.
324 -378	Fredonia limestone member

No.11 - Located 728'N. and 199'W. of SE cor. of NW¼, NE¼,Sec.27,T12S,R7E.
Inclined -50° in a N.62°45'W. direction.

0 - 21	Alluvium and Cypress sandstone
21 - 63	Paint Creek formation
63 -187	Bethel sandstone
187 -313	Renault formation
313 -323	Levias limestone member
323 -325	Zone of fault. Calcite stringers with traces of fluorspar and barite.
325 -345	Levias limestone member
345 -395	Rosiclare sandstone member
395 -457	Fredonia limestone member

No.12 - Located 857'N. and 139'W. of SE cor.of NW¼, NE¼,Sec.27,T12S,R7E.
Inclined -50° in a S.53°30'E. direction.

0 - 21	Alluvium and Cypress sandstone
21 - 74	Paint Creek formation
74 -179	Bethel sandstone
179 -268	Renault formation
268 -269	Fault, Fluorspar, galena and sphalerite.
269 -293	Rosiclare sandstone member
293 -384	Fredonia limestone member

H. L. Burmeister

H. L. Burmeister, Bureau of Mines

March 6, 1956.

Dewey H. Amos, Geological Survey

RECEIVED
MAR 2 1 1956

JOINER-FOE TRACTS

POPE CO., ILLINOIS

DMEA-3644 2-24-56

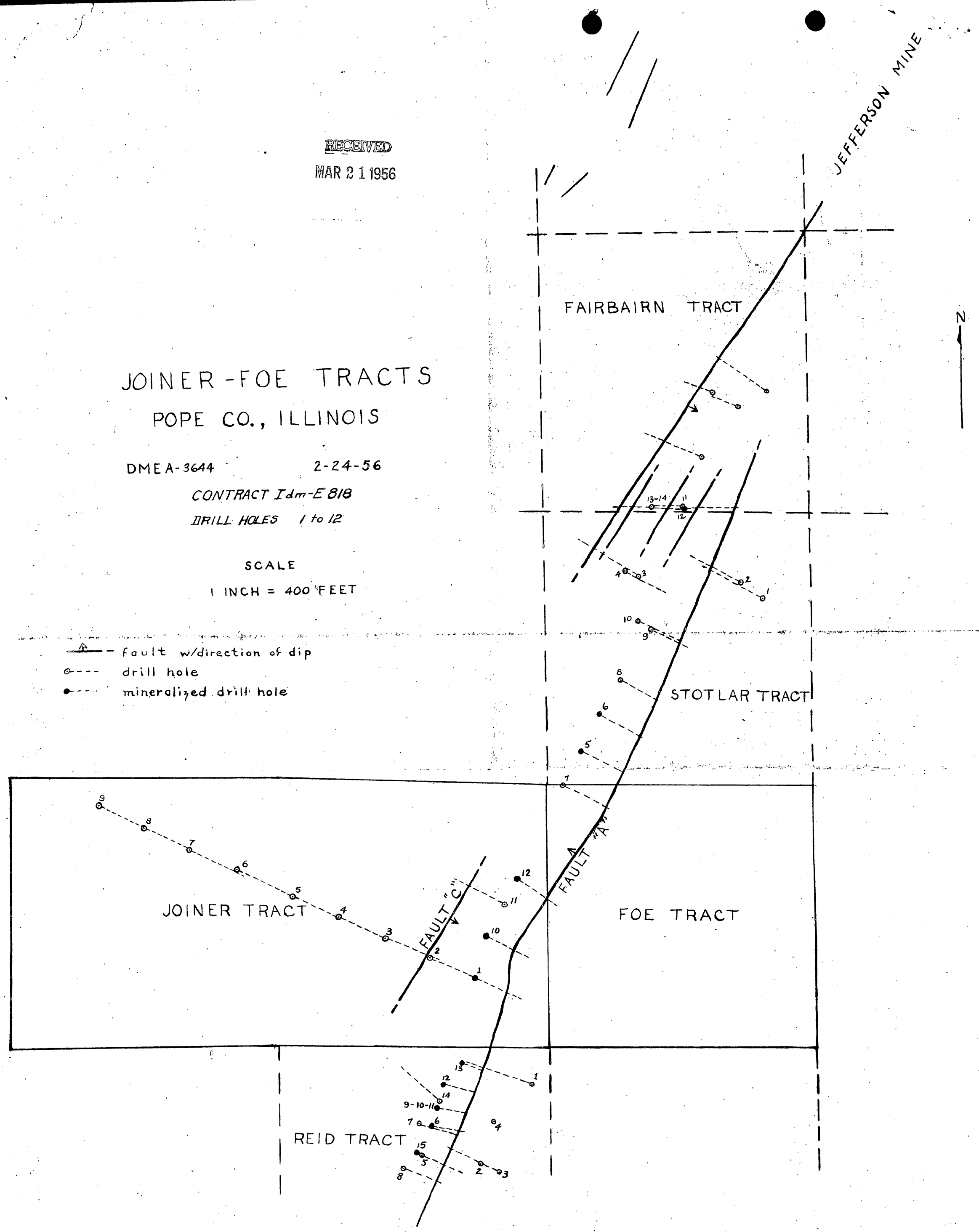
CONTRACT Idm-E 818

DRILL HOLES 1 to 12

SCALE

1 INCH = 400 FEET

- Fault w/direction of dip
- drill hole
- mineralized drill hole



DOCKET COPY
Surname:

Hopkins
Houk
Chambers
Selfridge
Johnson
Mittenthal

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

600

MAR 16 1956

Mr. Robert A. Laurence
Executive Officer, DMEA
Field Team, Region V
Room 13, Post Office Building
Knoxville, 2, Tennessee

Re: Docket No. DMEA-3644-Fluorspar, Lead and Zinc
Ozark-Mahoning Company
Joiner-Foe Tract
Pope County, Illinois
Contract No. Idm-E818

Dear Mr. Laurence:

Reference is made to your memorandum dated February 29, 1956, requesting permission to terminate the subject contract by mutual agreement, effective February 5, 1956.

Please find herewith the original and five copies of a Termination Agreement of the subject contract for your signature with effective date as shown. If it meets with your approval, please sign it in behalf of the Government and present it to the Operator for approval and signature.

After execution of the Termination Agreement, the copies are to be distributed in the usual manner.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

JHopkins:ms 3/15/56

Copy to: Docket
Operating Committee
Mr. Kiilsgaard, 5222
Mr. Holtzinger, 3522
Mr. Houk
Mr. Hopkins
Admr. R. File

Approved:

/s/ Robert W. Geehan (GCS)

Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)

Member, Geological Survey

Enclosures: 6

R.G.S.

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

MAR 13 1956

Memorandum

To: The Administrator, DMEA
Attention: Chief, Nonmetallic Minerals Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-3644 (Fluorspar, lead, zinc)
Ozark-Mahoning Company - Contract No. Idm-E818
Joiner-Foe Tract
Pope County, Illinois

Pursuant to your request, we have prepared the attached draft of Termination Agreement for the signature of the Executive Officer, DMEA Field Team, Region V.

Your attention is called to the Executive Officer's memorandum of February 29, requesting authorization to effect this Termination Agreement.

Robert P. Dwyer

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

MAR 13 1956

Memorandum

To: The Administrator, DMEA
Attention: Chief, Nonmetallic Minerals Division

From: Associate Solicitor, Division of Minerals Resources

Subject: Docket No. DMEA-3644 (Fluorspar, lead, zinc)
Ozark-Mahoning Company - Contract No. Idm-2818
Joiner-Fox Tract
Pope County, Illinois

Pursuant to your request, we have prepared the attached draft of Termination Agreement for the signature of the Executive Officer, DMEA Field Team, Region V.

Your attention is called to the Executive Officer's memorandum of February 29, requesting authorization to effect this Termination Agreement.

Robert P. Dwyer

P.Indritz/wog
March 13, 1956
Copy to: Solicitor's Docket (2)
DMEA Docket
G.C.Selfridge
L.G.Houk (2)
R.P.Dwyer
P.Indritz
Chron.

DOCKET COPY
Surname:
Hopkins
Houk

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

600

March 7, 1956

Memorandum

To: Mr. Robert Dwyer, Associate Solicitor

From: Lawrence G. Houk, Chief
Nonmetallic Minerals Division

Subject: Termination Agreement - Docket No. DMEA-3644-Fluorspar, lead, zinc
Ozark-Mahoning Company
Joiner-Foe Tract
Pope County, Illinois
Contract No. Idm-E818

Pursuant to Field Team Memorandum, dated February 29, 1956, please prepare, for the signature of Robert A. Laurence, a termination agreement for the subject contract, effective February 5, 1956.

James Hopkins
Nonmetallic Minerals Division

JHopkins:ms 3/7/56
Copy to: Docket
Mr. Houk
Mr. Hopkins
Admr. R. File

ACTION ON [illegible] 3644

OF PUBLIC [illegible]

Date 3-2

Referred to:

1. ~~Mr. Mittondorf~~
2. ~~Mr. Common~~
3. ~~Mr. Chambers~~
4. Docket Control Mails and Files
5. ~~[illegible]~~ Division
6. Docket Control Mails and Files

Note comments in report regarding:

1. Termination recommended
2.
3.
4.

and take appropriate action.

- - - - - -

Action taken by Division:

Termination agreement [illegible] be prepared by Legal

ROBERT E. ADAMS

Initials

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D.C.
KNOXVILLE 2, TENN.

RECEIVED
MAR - 2 1956

February 29, 1956

Memorandum

To: Operating Committee, DMEA - Washington

From: DMEA Field Team, Region V - Knoxville

Subject: DMEA-3644, Idm-E818 (Fluorspar-Lead-Zinc) Ozark-Mahoning Co. Rosiclare, Ill. Joiner-Foe Tract, Pope County, Illinois

Enclosed are four copies of an interim report on the subject contract by Dewey H. Amos, Geologist. Mr. Amos visited the project on February 23, after we had been advised by the Operator that they had quit work, and after we received the Operator's final report.

On the basis of Mr. Amos' report and recommendations, we recommend termination by mutual consent effective February 5, 1956. If you agree, please send us the termination forms or authorization to prepare them here. Certification will not be recommended.

As this was a unit-cost contract and the Operator's final engineering and geologic report has been received, we have approved payment of the final voucher. No royalty payments are due.

Robert A. Laurence

Robert A. Laurence, Executive Officer
DMEA Field Team, Region V

Wm. A. Beck

Wm. A. Beck, for V. J. Lynch
Member, Bureau of Mines

RECEIVED
MAR - 2 1956

INTERIM REPORT

DMEA-3644, Idm-E818 (fluorspar, lead, zinc)

Operator: Ozark-Mahoning Company, Rosiclare, Illinois

Location: Joiner-Foe Tract, Pope County, Illinois

The property was visited at this time to check results of three drill holes completed under Stage II of the contract. All three holes intersected structures containing slight but not commercial mineralization.

The mineralized sections of the core of three holes (Nos. 10, 11, 12) were examined. Two (Nos. 10, 12) cut structure "A" and the third intersected structure "C". Hole No. 10 located about 220 feet northeast of Hole No. 1 encountered two closely-spaced mineralized faults on structure "A". This consisted of 3½ feet of mineralization (calcite, fluorspar, sphalerite, galena and barite) in a horizontal distance of 33 feet (see attached summary logs). The other drill hole (No. 12) on "A" located about 540 feet northeast of Hole No. 1 encountered one foot of mineralization. Hole No. 11 which intersected structure "C" 400 feet northeast of Hole No. 3 had about 2 feet of calcite with traces of fluorspar and barite.

The only possibility of an ore body in the contract area appears to be on structure "A" as "C" has a displacement of only about 10 feet. Ore bodies in the vicinity of the Joiner-Foe tract usually occur where displacement is 50 feet or more. Structure "A" has a total displacement across the zone of faulting of about 55 feet but none of the drill holes on the contract area revealed ore of mineable grade and thickness. Holes drilled just northeast and just southwest (Stotlar tract and Reid Tract respectively) of the Joiner-Foe tract were blank. Remaining unexplored ground along structure "A" in the contract area is not sufficient in strike length to contain an ore body that would justify development.

The field examiner is of the opinion that additional exploratory work on the Joiner-Foe tract is not warranted. It is recommended that the contract be terminated by mutual agreement effective February 5, 1956.

Date of examination: Ferruary 23, 1956

Dewey H. Amos
Geologist
U. S. Geological Survey

RECEIVED
FEB 29 1956
U. S. Geologic Division
Knoxville, Tenn.

RECEIVED
MAR - 2 1956

SUMMARY LOGS OF HOLES COMPLETED UNDER STAGE II

No. 10 Located 576' N and 300' W of SE cor. of NW¼, NE¼, Sec. 27, T12S, R7E. Inclined -50° in a S. 61°30' E. direction.

0-27	Alluvium and Cypress sandstone
27-72	Paint Creek formation
72-174	Bethel sandstone
174-278	Renault formation
278-282½	Levias limestone member
282½-284	Fault. Calcite, acid-grade fluorspar and shines of sphalerite and galena.
284-303	Levias limestone member
303-322	Rosiclare sandstone member
322-324	Fault. Calcite with traces of fluorspar, galena, sphalerite and barite.
324-378	Fredonia limestone member.

No. 11 Located 728' N and 199' W of SE cor. of NW¼, NE¼, Sec. 27, T12S, R7E. Inclined -50° in a N. 62°45' W. direction.

0-21	Alluvium and Cypress sandstone
21-63	Paint Creek formation
63-187	Bethel sandstone
187-313	Renault formation
313-323	Levias limestone member
323-325	Zone of fault. Calcite stringers with traces of fluorspar and barite.
325-345	Levias limestone member
345-395	Rosiclare sandstone member
395-457	Fredonia limestone member

No. 12 Located 857' N and 139' W of SE cor. of NW¼, NE¼, Sec. 27, T12S, R7E. Inclined -50° in a S. 53°30' E. direction.

0-21	Alluvium and Cypress sandstone
21-74	Paint Creek formation
74-179	Bethel sandstone
179-268	Renault formation
268-269	Fault. Fluorspar, galena and sphalerite.
269-293	Rosiclare sandstone member
293-384	Fredonia limestone member

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON FIDELITY BLDG.
KNOXVILLE 2, TENN.

February 17, 1956

RECEIVED
FEB 20 1956

Memorandum

To: Operating Committee, DMEA - Washington

From: DMEA Field Team, Region V - Knoxville, Tennessee

Subject: DMEA-3644, Idm-5815 (Fluorspar, lead, zinc) Ozark-Mahoning Co., Basiclare, Illinois. Joiner-Fee Tract, Pope County, Illinois

Enclosed are three copies of the Operator's final report on the subject project. The Operator submitted the required 5 copies, but as the engineer and geologist assigned to this project are in College Park, Md., and Carbondale, Illinois respectively, it was necessary to provide each with a copy for use in preparing the Field Team final report. We will forward the fourth copy as soon as it is no longer needed in the field.

The Operator discontinued drilling without notice, and we first learned about it from the final report, received today. However, review of that report indicates that termination was probably justified. We will probably recommend termination, without certification, but will await the field examiners' reports before submitting a recommendation.

Robert A. Laurence, Executive Officer
DMEA Field Team, Region V

RAL/sm
cc:
Lynch
Ames
Millar
Files

V. J. Lynch, Member
Bureau of Mines

RECEIVED
FEB 20 1956

xxxxxxxxxxxxxxxxxx
College Park, Maryland

February 15, 1956

Memorandum

To: V. C. Lynch, Bureau Member, DMEA Field Team, Region V

From: H. L. Burmeister, Bureau of Mines, College Park, Md.

Subject: Docket DMEA-3044, Contract Ida-2018
Ozark-Mahoning Company, Joiner-Fee Tract, Pope County, Ill.
Operator's Final Report on project.

Transmitted herewith are the original and three copies of the subject report. The remaining copy will accompany the Field Team's final report.

Attached to each report is a copy of the Operator's letter covering the transmittal of his final report.

H. L. Burmeister

Enclosures

Ozark-Mahoning Company

RECEIVED
FEB 20 1956

Mahoning Mining Division
Rosiclare, Illinois

February 7, 1956

Mr. H. L. Burmeister
Mine Examination & Exploration Engineer
U. S. Department of the Interior
Defense Minerals Exploration Administration
College Park, Maryland

Dear Mr. Burmeister:

Re: DMEA-364A Fluorspar-Lead-Zinc
Contract No. Idm-E818
Joiner - Foe Tract
Pope County, Illinois

I enclose herewith five copies of Form MF-104A as well as five copies of Form MF-104 to which is attached a supplemental sheet and drill logs, No. 11 and 12. This summary covers the work from January 1, 1956 through February 4, 1956.

Inasmuch as we have discontinued drilling operations on the property due to unfavorable results along the main structure, we are also enclosing five copies of a final report dated February 6, 1956 to which are attached various maps. As stated in the last paragraph of this report, we will be happy to review the results with your office should you see fit to do so.

Very truly yours,

OZARK-MAHONING COMPANY
Mahoning Mining Division

A. G. Johnson

AGJ/blc

Enclosures

February 6, 1956

Mr. H. L. Burmeister
Mine Examination & Exploration Engineer
U. S. Department of the Interior
Defense Minerals Exploration Administration
College Park, Maryland

Dear Mr. Burmeister:

Re: DMEA-3644 Fluorspar-Lead-Zinc
Contract No. Idm-E818
Joiner - Foe Tract
Pope County, Illinois

We have discontinued drilling operations on the B. E. Joiner et al Tract located in Pope County, Illinois because of negative results. This drilling program was covered by an Exploration Project Contract dated June 16, 1955, Docket No. DMEA 3644, Contract No. Idm-E818.

Twelve diamond drill holes were completed. Most of these holes were drilled as a northwest-southeast crosscut in an effort to locate structures more or less parallel to A structure which was definite based on drilling previously completed on the Stotlar Tract to the northeast of the Joiner and the Reed Tract to the southwest. We felt there was a possibility of four structures, A, B, C and D, as projected on the original application. Holes No. 2 and 3 did indicate the possibility of a minor structure B with a more pronounced structure C. Northwest of Hole No. 3, Holes No. 4 - 9 were drilled, in which there was no mineralization or evidence of faulting. There was a normal sequence of formation from the base of the Bethel to the base of the Rosiclare.

Along structure A, three holes were drilled, Nos. 1, 10 and 12. Hole No. 1 cut the fault plane from 268 - 269.5 feet, possibly at too shallow a depth for maximum mineralization possibilities. Hole No. 10 also cut the fault plane showing two closely spaced faults with traces of mineralization. We feel this hole cut the proper horizon for maximum possibility of mineralization. Hole No. 12 cut the fault plane from 268 - 269 feet with good spar, zinc and lead mineralization. The nearest hole to the northeast is No. 7 Stotlar which was blank. We do not believe there is sufficient distance between these holes to justify additional drilling to the northeast. A pod of ore in this area would be too short to justify development.

Along structure C, two holes were drilled, Nos. 3 and 11. Hole No. 3 showed barite, with traces of spar and zinc from 346.5 - 349 feet. The fault zone was cut at the proper horizon. Hole No. 11 also cut traces of mineralization from 323 - 325 feet at the proper horizon. Based on results in Holes No. 3 and 11, we do not believe structure C to be of sufficient importance to justify additional drilling either to the northeast of No. 11 or the southwest of No. 3.

Below is tabulated the data on the various holes:

Hole No.	Started	Completed	Angle	Depth	Remarks
1	7-21-55	8-3-55	50°	397	Cut Fault A 268 - 269.5
2	8- 6-55	8-19-55	50°	431	Calcite and Barite Traces
3	8-29-55	9- 9-55	50°	437	Cut Fault C 346.5 - 349 Barite, some calcite & spar
4	9-15-55	9-26-55	50°	414	Blank
5	9-28-55	10- 8-55	50°	400	Blank
6	10-11-55	10-21-55	50°	459	Blank
7	10-24-55	11- 5-55	50°	467	Blank
8	11- 8-55	11-18-55	50°	407	Blank
9	11-22-55	12-12-55	50°	422	Blank
10	12-16-55	12-31-55	50°	378	282½ - 284 Fault - Ls. & Calcite Traces of spar - lead - zinc 322 - 324 Rosiclare Sand, Calcite Traces Spar - zinc - lead - barite
11	1- 4-56	1-19-56	50°	457	323 - 325 - Ls., Calc., Tr. Spar & Barite
12	1-24-56	2- 4-56	50°	384	Fault - 268 - 269' - Spar-Pb-Zn-Some Shale 341 - 342 Calc. Veinlet - Tr. Spar

T O T A L F O O T A G E 5055 Ft.

To complete this report, there is attached hereto the following maps:

50' Scale Map showing location of all holes drilled
400' Scale Map showing the location of the B. E. Jeiner 80 Acre Tract and the Foe 40 Acre Tract in relation to other mineral tracts in the general area.
Set of cross-sections covering holes drilled.

If your office is not in agreement with our conclusions on the above project, we would be happy to review the results with personnel from your office.

Very truly yours,

OZARK-MAHONING COMPANY
Mahoning Mining Division

A. G. Johnson

AGJ/blc

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 405 NOTT BLDG.
KNOXVILLE 2, TENN.

RECEIVED
FEB 20 1956

February 17, 1956

Memorandum

To: Operating Committee, DMEA - Washington

From: DMEA Field Team, Region V - Knoxville, Tennessee

Subject: DMEA-3644, Idm-E818 (Fluorspar, lead, zinc) Ozark-Mahoning Co., Rasiclare, Illinois. Joiner-Foe Tract, Pope County, Illinois

Enclosed are three copies of the Operator's final report on the subject project. The Operator submitted the required 5 copies, but as the engineer and geologist assigned to this project are in College Park, Md., and Carbondale, Illinois respectively, it was necessary to provide each with a copy for use in preparing the Field Team final report. We will forward the fourth copy as soon as it is no longer needed in the field.

The Operator discontinued drilling without notice, and we first learned about it from the final report, received today. However, review of that report indicates that termination was probably justified. We will probably recommend termination, without certification, but will await the field examiners' reports before submitting a recommendation.

Robert A. Laurence
Robert A. Laurence, Executive Officer
DMEA Field Team, Region V

V. J. Lynch
V. J. Lynch, Member
Bureau of Mines

RECEIVED

FEB 20 1956

xxxxxxxxxxxxxxxxxx
College Park, Maryland

February 15, 1956

Memorandum

To: V. J. Lynch, Bureau Member, MSHA Field Team, Region V

From: H. L. Burmeister, Bureau of Mines, College Park, Md.

Subject: Docket DMA-3044, Contract Id-1818
Ozark-Mahoning Company, Joiner-Fee Tract, Pope County, Ill.
Operator's Final Report on project.

Transmitted herewith are the original and three copies of the subject report. The remaining copy will accompany the Field Team's final report.

Attached to each report is a copy of the operator's letter covering the transmittal of his final report.

H. L. Burmeister

Enclosures

Ozark-Mahoning Company

RECEIVED
FEB 20 1956

Mahoning Mining Division
Rosiclare, Illinois

February 7, 1956

Mr. H. L. Burmeister
Mine Examination & Exploration Engineer
U. S. Department of the Interior
Defense Minerals Exploration Administration
College Park, Maryland

Dear Mr. Burmeister:

Re: DMEA-3644 Fluorspar-Lead-Zinc
Contract No. Idm-E818
Joiner - Foe Tract
Pope County, Illinois

I enclose herewith five copies of Form MF-104A as well as five copies of Form MF-104 to which is attached a supplemental sheet and drill logs, No. 11 and 12. This summary covers the work from January 1, 1956 through February 4, 1956.

Inasmuch as we have discontinued drilling operations on the property due to unfavorable results along the main structure, we are also enclosing five copies of a final report dated February 6, 1956 to which are attached various maps. As stated in the last paragraph of this report, we will be happy to review the results with your office should you see fit to do so.

Very truly yours,

OZARK-MAHONING COMPANY
Mahoning Mining Division

A. G. Johnson

AGJ/blc

Enclosures

February 6, 1956

Mr. H. L. Burmeister
Mine Examination & Exploration Engineer
U. S. Department of the Interior
Defense Minerals Exploration Administration
College Park, Maryland

Dear Mr. Burmeister:

Re: DMEA-3644 Fluorspar-Lead-Zinc
Contract No. Idm-E818
Joiner - Foe Tract
Pope County, Illinois

We have discontinued drilling operations on the B. E. Joiner et al Tract located in Pope County, Illinois because of negative results. This drilling program was covered by an Exploration Project Contract dated June 16, 1955, Docket No. DMEA 3644, Contract No. Idm-E818.

Twelve diamond drill holes were completed. Most of these holes were drilled as a northwest-southeast crosscut in an effort to locate structures more or less parallel to A structure which was definite based on drilling previously completed on the Stotlar Tract to the northeast of the Joiner and the Reed Tract to the southwest. We felt there was a possibility of four structures, A, B, C and D, as projected on the original application. Holes No. 2 and 3 did indicate the possibility of a minor structure B with a more pronounced structure C. Northwest of Hole No. 3, Holes No. 4 - 9 were drilled, in which there was no mineralization or evidence of faulting. There was a normal sequence of formation from the base of the Bethel to the base of the Rosiclare.

Along structure A, three holes were drilled, Nos. 1, 10 and 12. Hole No. 1 cut the fault plane from 268 - 269.5 feet, possibly at too shallow a depth for maximum mineralization possibilities. Hole No. 10 also cut the fault plane showing two closely spaced faults with traces of mineralization. We feel this hole cut the proper horizon for maximum possibility of mineralization. Hole No. 12 cut the fault plane from 268 - 269 feet with good spar, zinc and lead mineralization. The nearest hole to the northeast is No. 7 Stotlar which was blank. We do not believe there is sufficient distance between these holes to justify additional drilling to the northeast. A pod of ore in this area would be too short to justify development.

Along structure C, two holes were drilled, Nos. 3 and 11. Hole No. 3 showed barite, with traces of spar and zinc from 346.5 - 349 feet. The fault zone was cut at the proper horizon. Hole No. 11 also cut traces of mineralization from 323 - 325 feet at the proper horizon. Based on results in Holes No. 3 and 11, we do not believe structure C to be of sufficient importance to justify additional drilling either to the northeast of No. 11 or the southwest of No. 3.

Below is tabulated the data on the various holes:

Hole No.	Started	Completed	Angle	Depth	Remarks
1	7-21-55	8-3-55	50°	397	Cut Fault A 268 - 269.5
2	8- 6-55	8-19-55	50°	431	Calcite and Barite Traces
3	8-29-55	9- 9-55	50°	437	Cut Fault C 346.5 - 349 Barite, some calcite & spar
4	9-15-55	9-26-55	50°	414	Blank
5	9-28-55	10- 8-55	50°	400	Blank
6	10-11-55	10-21-55	50°	459	Blank
7	10-24-55	11- 5-55	50°	467	Blank
8	11- 8-55	11-18-55	50°	407	Blank
9	11-22-55	12-12-55	50°	422	Blank
10	12-16-55	12-31-55	50°	378	282½ - 284 Fault - Ls. & Calcite Traces of spar - lead - zinc 322 - 324 Rosiclare Sand, Calcite Traces Spar - zinc - lead - barite
11	1- 4-56	1-19-56	50°	457	323 - 325 - Ls., Calc., Tr. Spar & Barite
12	1-24-56	2- 4-56	50°	384	Fault - 268 - 269' - Spar-Pb-Zn-Some Shale 341 - 342 Calc. Veinlet - Tr. Spar

T O T A L F O O T A G E 5055 Ft.

To complete this report, there is attached hereto the following maps:

50' Scale Map showing location of all holes drilled
400' Scale Map showing the location of the B. E. Joiner 80 Acre Tract and the Foe 40 Acre Tract in relation to other mineral tracts in the general area.
Set of cross-sections covering holes drilled.

If your office is not in agreement with our conclusions on the above project, we would be happy to review the results with personnel from your office.

Very truly yours,

OZARK-MAHONING COMPANY
Mahoning Mining Division

A. G. Johnson

A. G. Johnson

AGJ/bla

Enclosures

Docket Copy
Surname:

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

1956

Mr. Robert A. Laurence
Executive Officer, DMEA
Field Team, Region V
Room 13, Post Office Bldg.
Knoxville 2, Tennessee

Subject: Docket No. DMEA-3644
Fluorspar, lead and zinc
Ozark-Mahoning Company
R.E.Joiner, et al. Tract
Pope County, Illinois
Contract No. Idm-E818

Dear Mr. Laurence:

Reference is made to your memorandum dated December 21, 1955, in which you request permission to prepare an amendment to the subject contract authorizing the drilling of one hole on structure "A" to the southwest of hole No. 1, less than 200 feet from hole No. 1.

You are hereby granted permission to prepare such an amendment, only if it is recommended by the field examiners after data from hole No. 10 have been considered.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB)

Approved:

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

Thor H. Kiilsgaard (JHB)
Member, Geological Survey

JHopkins:gad 1/5/56
Copy to: Admr. R. File
Docket
Operating Committee
Mr. Kiilsgaard, 5222
~~XXXXXXXXXXXXXXXX~~
Mr. Arundale, 3516
Mr. Houk
Mr. Hopkins

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 205 POST OFFICE BLDG.
KNOXVILLE 2, TENN.

January 6, 1956

RECEIVED
JAN 11 1956

Mr. E. A. Brecke
Ozark-Mahoning Co.
Mahoning Mining Division
Rosiclare, Illinois

Re: DMEA-3644, Idm-2818 (fluorspar)
Joiner-Fee Tract
Pope County, Illinois

Dear Mr. Brecke:

As requested in your letter of January 3, we agree with your suggestion for moving the collar location of hole No. 11 and drilling it toward the northwest. As shown by your cross-sections, structure "C" is dipping steeply to the southeast, and it is advisable to approach the structure from the hanging-wall side.

We also agree with your proposal to drill No. 12 at a point 200 to 400 feet northeast of No. 10, which cut two mineralized faults, and to drill it toward the southeast. In effect, this will be the same hole as formerly proposed for No. 13.

Do you then plan to explore structure "C" to the southwest of hole No. 3 with No. 13? Presumably the location of No. 13 will be affected by the results of hole No. 11; therefore, we would appreciate being advised at your earliest convenience after completion of hole No. 11, so that the plan for further exploration of structure "C" can be considered.

Very truly yours,

Robert A. Laurence
Executive Officer, DMEA
Field Team, Region V

RAL/mm.
cc:
Opr. Gen.-2
Burmeister
Ames
Trace
Lynch
Files

CHEMICALS OZARK MAHONING

Ozark-Mahoning Company

Mahoning Mining Division
Rosiclare, Illinois

January 3, 1956

RECEIVED
JAN 11 1956

Mr. Robert A. Laurence
D. M. E. A. Field Team, Region V
Post Office Building
Knoxville 2, Tennessee

Dear Mr. Laurence:

Re: D.M.E.A. - 3644 Idm E-818 Fluorspar
Joiner - Foe Tract
Pope County, Illinois

We have found it advantageous to change the location of the collar of Diamond Drill Hole No. 11 as shown by the enclosed 50' scale map. This location tends to reduce our moving time and since the fault is dipping to the southeast, it tends to reduce the drilling depth and also gives a more favorable angle of intersection with the fault.

We also wish to request a change for drill hole No. 12. This hole was approved to be drilled southwest of Hole No. 3. As you will note from the logs in the December report, No. 10 hole cut two faults, both of which showed traces of ore minerals. This condition would indicate that the main fault northeast of the point where it was cut by No. 10 hole may be more favorable for a test. The present plans would call for the location of No. 12 hole 200 to 400 feet northeast of No. 10 and drilled to the southeast.

This proposed location would reduce moving time. The hole would probably cut the fault at or near the Joiner-Foe property line but since both properties are included under this contract, the 150 ft. limitation would not apply.

We trust that we will hear from you in regard to this change in the near future.

Yours very truly,

OZARK-MAHONING COMPANY
Mahoning Mining Division

E. A. Brecke

E. A. Brecke

RECEIVED
JAN 6 - 1956

EAB/blc

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM WASHINGTON 25, D.C. POST OFFICE BLDG.
KNOXVILLE 2, TENN.

December 21, 1955

RECEIVED
DEC 23 1955

Memorandum

To: Operating Committee, DMEA - Washington

From: Field Team, DMEA - Region V - Knoxville

Subject: Interim report, DMEA-3644, Idm-E818 (Fluorspar, lead, zinc)
Ozark-Mahoning Company , Rosiclare, Ill.

Enclosed are 4 copies of the latest interim report on the subject contract.

The field examiners, in the first paragraph on page 2, recommend amending the contract to permit one hole on structure "A" to the southwest of hole No. 1, less than 200 feet from hole No. 1 . This would be hole No. 13, to be drilled after completion of hole No. 10 on structure "A" and holes 11 and 12 on structure "C".

However, both the company geologist and the field examiners were assuming the east line of the Joiner tract to be the project boundary, whereas actually the 40-acre Foe tract to the east is included. Under these circumstances, it seems preferable to drill hole No. 13 to the northeast of hole No. 10, in which case no amendment is needed.

In order to avoid loss of time if a later field inspection indicates need for a hole to the southwest, permission is requested to prepare such an amendment, only if it is recommended by the field examiners after data from hole No. 10 have been considered.

Robert A. Laurence
Robert A. Laurence
Executive Officer, DMEA
Field Team, Region V

L. E. Shirley
L. E. Shirley for V. J. Lynch
Bureau of Mines.

DEC 23 1955

INTERIM REPORT

DMEA-3644, Idm-E818 (fluorspar, lead, zinc)

Operator: Ozark-Mahoning Company, Rosiclare, Illinois

Location: Joiner-Foe Tract, Pope County, Illinois

The property was visited at this time to check diamond drill cores obtained in the 9 holes completed under Stage I of the contract. Completion of 9 holes on the cross sectional line designated in Stage I was considered adequate exploration along this line by the Operator. The field examiners are in agreement.

The significant sections of the core of the two holes (Nos. 1 and 3) showing mineralization were examined.

In the company reports the designation of the structures has been changed by starting with "A" as the most southeastern structure instead of "B" as it appears in the sketch map attached to the contract and each succeeding one is advanced one letter.

Hole No. 1 which encounters structure "A" cuts a mineralized zone 1 1/2 feet thick. Ore bodies have been discovered on this structure by the Operator, both northeast and southwest of the limits of the contract area. Hole No. 3 intersected a fault zone (Structure "C") about 9 feet thick of which 3 1/2 feet was mineralized. Company drilling outside the contract area and about 2600 feet northeastward from Hole No. 3 encountered ore on what appears to be this structure ("C").

The Operator is of the opinion that further exploratory work should be conducted on structures "A" and "C" by entering Stage II of the contract. Work on structure "A" would consist of drilling one hole (No. 10) about 450 feet long and collared 220 feet N. 17° E. of the collar of drill hole No. 1. The bottom of this hole would be about 200 feet northeast of the bottom of hole No. 1 and angled to intersect structure "A" about 80-feet lower than hole No. 1 in a more favorable stratigraphic zone.

Independent of the results obtained from hole No. 10, the company desires to explore structure "C" by drilling one hole 200 feet northeast of hole No. 3 and one hole 200 feet southwest of hole No. 3. If results of drilling these holes (Nos. 11 and 12) are favorable then additional holes should be drilled on structure "C".

The Field Team representatives are in agreement, that Stage II of the contract should be entered and the above outlined drilling procedure followed.

Under the present contract no hole can be drilled on Structure "A" southwest of hole No. 1, because of the property line limit and the required 200 foot spacing between drill holes. If exploration on Structure "A" to the southwest of hole No.1 is done, the hole will have to be located 100 to 150 feet southwest of hole No. 1. This would necessitate an amendment to the contract for this hole decreasing the minimum spacing between drill holes from 200 feet to 100 feet. It is the opinion of the examiners and of the Operator that the area southwest of drill hole No 1 on Structure "A" should be examined; therefore, the examiners recommend that the contract be amended to read, "the minimum interval between hole No.1 and the single hole southwest of No. 1 on the same structure shall be 100 feet instead of 200 feet." This proposed amendment is in conformity with the expressed desire of the Operator.

Stage II was entered on December 16, 1955 by starting drill Hole No. 10 with the verbal permission of the Field Team representatives.

Progress on the contract to date has been satisfactory. The Operator is to be commended on the accurate and detailed work performed under the contract.

Project visited December 16, 1955.

H. L. Burmeister, Mining Engineer
U. S. Bureau of Mines
and
D. H. Amos, Geologist
U. S. Geological Survey

z

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D.C.
ROOM POST OFFICE BLDG.
KNOXVILLE 2, TENN.

RECEIVED
DEC 23 1955

December 20, 1955

Mr. E.A. Brecky, Chief Geologist
Ozark-Mahoning Co.
Rosiclare, Illinois

Re: DMEA-3644, Idm-E818 (Fluorspar)
Jeimer-Foe Tract
Pope County, Illinois

Dear Mr. Brecky:

Mr. Burmeister has returned and we have discussed the proposed holes of Stage II of the subject contract. Enclosed herewith is written approval of the work proposed in Stage II.

As the adjoining Foe tract (NE 1/4 NE 1/4 Sec. 27) is included in the contract, it will not require an amendment to locate hole No. 13 to the northeast of hole No. 10, to further explore structure "A". This appears preferable to a location southwest of hole No. 1, which would be close to the south property line. Please let me know your opinion on this.

In the meanwhile, it appears preferable to drill holes 10, 11, and 12 at the localities agreed on between you, Mr. Burmeister and Mr. Amos, and a decision on hole 13 can be made after they are completed.

Very truly yours,

Robert A. Laurence, Executive Officer
DMEA Field Team, Region V

RAL/am
ect
Opr. Com. 2
Millar
Amos
Trace
Lynch
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 205 POST OFFICE BLDG.
WASHINGTON 25, D.C.
KNOXVILLE 2, TENN.

December 20, 1955

RECEIVED
DEC 23 1955

Ozark-Mahoning Co.
Mahoning Mining Division
Rosiclare, Illinois

Re: DMEA-3644, Idm-2818 (Fluorspar)
Joiner-Foe Tract
Pope County, Illinois

Gentlemen:

This will constitute written approval to begin Stage II and drill holes Nos. 10, 11, and 12 as discussed with Mr. Burmeister and Mr. Amos on December 16, and confirms the verbal approval given you by them at that time. Approval is also given for drilling hole No. 13, but its location should be discussed with the Government before beginning it. It cannot be drilled to the southwest of hole No. 1 without an amendment to the contract, but it can be drilled to the northeast of hole No. 10 without amendment.

Very truly yours,

Robert A. Laurence, Executive Officer
DMEA Field Team, Region V

RAL/am
cc:
Opr. Com.-3
Lynch, Amos-Trace
Miller
Files

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

October 17, 1955

Memorandum

To: Miss Curtin, Statistics and Control Division, DMEA

From: Hazel Berry, Operating Committee, DMEA

Subject: By 257 Amendment to Contract

Attached is the following docket copy of an amendment to a contract which has been reviewed and approved by the Commodity Division and Contract Administration and Audit Division, also the Legal Division. The official docket is also attached.

Ozark-Mahoning Co., DMEA-3644, Idm-E818, Amendment No. 1.

Attachment 1

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

J Kaum

October 12, 1955

Memorandum

To: Administrator

From: Nonmetallic Minerals Division

Subject: Amendment No. 1 - Docket No. DMEA-3644
Fluorspar, lead and zinc
Ozark-Mahoning Company
B.E.Joiner, et al. Tract
Pope County, Illinois
Contract No. Idm-E818

The Nonmetallic Minerals Division concurs in Amendment No. 1 to the subject contract as written and executed in the field. This amendment changes the starting date from July 14, 1955 to July 25, 1955, and the completion date from July 14, 1956 to July 25, 1956.

Amendment No. 1 is necessary because drilling equipment was in use on another property and was not available for use on the contract until July 21, 1955.

James Hopkins
Nonmetallic Minerals Division

RECEIVED
OCT 13 1955
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

Docket Copy
Surname:

Hopkins
Houk

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

October 12, 1955

Memorandum

To: Administrator

From: Nonmetallic Minerals Division

Subject: Amendment No. 1 - Docket No. DMEA-3644
Fluorspar, lead and zinc
Ozark-Mahoning Company
B.E.Joiner, et al. Tract
Pope County, Illinois
Contract No. Idm-E818

The Nonmetallic Minerals Division concurs in Amendment No. 1 to the subject contract as written and executed in the field. This amendment changes the starting date from July 14, 1955 to July 25, 1955, and the completion date from July 14, 1956 to July 25, 1956.

Amendment No. 1 is necessary because drilling equipment was in use on another property and was not available for use on the contract until July 21, 1955.

James Hopkins
Nonmetallic Minerals Division

JHopkins:gad 10/12/55
Copy to: Admr. R. File
Docket
Mr. Houk
Mr. Hopkins

wnc

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 1 POST OFFICE BLDG.
WASHINGTON
KNOXVILLE 2, TENN.

August 18, 1955

Memorandum

To: Operating Committee, DMEA - Washington

From: Acting Executive Officer, DMEA - Region V

Subject: Signed Amendment No. 1. DMEA-3644, Idm-E818, Ozark-Mahoning Corporation. Pope County, Ill. (Fluorspar)

Transmitted are three signed copies of the subject Amendment. The usual distribution of the other copies has been made by this office.

V. J. Lynch

V. J. Lynch

RECEIVED
OCT 13 1955
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

RECEIVED
AUG 2 - 1955

Report of Investigation

Project visited July 28, 1955
by G. L. Neumann and V. J. Lynch

RECEIVED

DMEA Docket No. 3644 (Fluorspar-Lead-Zinc)
Operator: Ozark-Mahoning Company
Rosiclare, Illinois
Property: Joiner-Foe Tract
Pope County, Illinois
Contract No. Idm-E818

Summary:

This project was designed to increase the Nation's reserve of the three strategic materials: fluorspar, lead and zinc. The work program consists of: diamond core drilling of a NW-SE cross section to check the extension of several parallel faults indicated by previous drilling on adjoining properties; following any favorable showings along the trend to the northeast or southwest. The drilling had just gotten well underway on hole JF-1. The hole was down to a depth of 170 feet. A fault intercept was expected at about 200 feet.

Conclusions:

The work as usual with this Operator has progressed efficiently and on schedule.

Recommendations:

No changes in operation are necessary. An amendment regarding the starting date of the contract was requested.

/s/ G. L. Neumann

College Park, Md.
August 16, 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM WASHINGTON 25, D. C. POST OFFICE BLDG.
KNOXVILLE 2, TENN.

RECEIVED
AUG - 8 1955

August 4, 1955

Mr. A. G. Johnson
Ozark-Mahoning Company
Mahoning Mining Division
Rosiclare, Illinois

Re: DMEA-3644, Idm-E318 (Fluorspar)
Joiner Tract, Pope County, Ill.

Dear Mr. Johnson:

Mr. V. J. Lynch, of the Bureau of Mines, who recently visited the Joiner tract, tells me that work on the exploration contract began on July 21. Therefore, I am enclosing, for your signature, six copies of Amendment No. 1, changing the starting date as provided in Article 3 to July 25 and, in order to provide a full year for work under the contract, the completion date is correspondingly changed to July 25, 1956.

Please sign all six copies, and return all but the Operator's copy to me.

Very truly yours,

Robert A. Laurence
EXECUTIVE OFFICER
DMEA REGION V

RAL/sm.
cc:
Lynch
Opr. Con.
Neumann
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 1-0 POST OFFICE BLDG.
KNOXVILLE 2, TENN.

RECEIVED
JUL 13 1955

July 11, 1955

Memorandum

To: Operating Committee, DMEA - Washington

From: DMEA Field - Region V - Knoxville, Tennessee

Subject: Signed Contract: DMEA-3644, Idm-E818 (Fluorspar, zinc-lead)
Ozark-Mahoning Co., Rosiclare, Illinois

Transmitted are three signed copies of the subject contract. The usual distribution of the other copies has been made by this office.

Robert A. Laurence
Robert A. Laurence
EXECUTIVE OFFICER
DMEA REGION V

V. J. Lynch
V. J. Lynch, Member
Bureau of Mines

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

RECEIVED
JUN 21 1955

June 21, 1955

Memorandum

To: L. G. Houk, Chief, Non-Metallic Minerals Division, DMEA

From: Commodity Specialist, Branch of Construction and Chemical Materials

Subject: Review of Field team examination report on DMEA Docket No. 3644 (Fluorspar-Lead-Zinc), Ozark-Mahoning Co., B. E. Joiner et. al. tract, Pope County, Ill.

The recommendation of the field team to approve a program of diamond drilling to explore the eastern forty acres of the subject application, with continuation of drilling into the western forty acres to be contingent on discovery of new evidence of structure or mineralization, is concurred in.

John E. Holtzinger Jr.
John E. Holtzinger, Jr.

Copy to: Files
Div. of Minerals
Br. of Const. & Chem. Mats.
Mr. Holtzinger

Docket Copy
Surname:

Hopkins
Houk
Talbot
Holtzinger
Selfridge
Johnson

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

JUN 16 1955

Mr. Robert A. Laurence
Executive Officer, DMEA
Field Team, Region V
Room 13, Post Office Bldg.
Knoxville 2, Tennessee

Subject: Docket No. DMEA-3644
Fluorspar, lead and zinc
Ozark-Mahoning Company
B. E. Joiner, et al. Tract
Pope County, Illinois

Dear Mr. Laurence:

Please find herewith the original and five copies of a contract covering the subject exploration project which have been signed by the Government with register number and effective date as shown.

If the contract meets with your approval present it to the Operator for approval and signature. Please explain to the Operator that the contract, when executed, is a firm commitment under the terms of which it is obligated to complete the work outlined at the agreed unit cost. If any part of this contract does not have either your approval or that of the Operator and cannot be amended within your delegated authority, then the original and all copies of the contract are to be returned to this office, together with the proposed changes for consideration.

Please obtain properly executed copies of Consent to Lien forms and attach to copies of the contract before presenting them to the Operator for its signature.

After execution of the contract, the copies are to be distributed in the usual manner. Two copies of a memorandum from N. E. Nelson of the Geological Survey, dated May 20, 1955, are enclosed.

Sincerely yours,

Approved:

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

Thor H. Kiilsgaard (JHB)
Member, Geological Survey

George C. Selfridge
Chairman, Operating Committee (JHB)

Enclosures 8

JHopkins:gad 6/14/55
Copy to: Admr. R. File
Docket
Operating Committee
Mr. Arundale, 3516
Mr. Kiilsgaard, 5222
Mr. Houk

P. S. The Consent to Lien forms are enclosed for execution by the Lessors.

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

JUN 13 1955

Memorandum

To: The Administrator, DMEA
Attention: Mr. L. G. Houk

From: Acting Assistant Solicitor, Defense Minerals

Subject: Ozark-Mahoning Company, Docket No. DMEA-3644
Fluorspar, lead and zinc

There is attached hereto in satisfactory legal form for execution a contract covering the above project, subject to Consent to Lien signed by the 6 lessors of the lease-option agreement effective December 1, 1954.

Henry C. Rubin
Henry C. Rubin
For J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

Attachments

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

JUN 3 1955

Memorandum

To: The Administrator, DMEA
Attention: Mr. L. G. Houk

From: Acting Assistant Solicitor, Defense Minerals

Subject: Ozark-Mahoning Company, Docket No. DMEA-3644
Fluorspar, lead and zinc

There is attached hereto in satisfactory legal form for execution a contract covering the above project, subject to Consent to Lien signed by the 6 lessors of the lease-option agreement effective December 1, 1954.

S/ Henry C. Rubin
For J. L. Hofflund
Acting Assistant Solicitor
Defense Minerals

Attachments

HCRubin/emd
Copy to: DMEA Docket
Solicitor's Docket
L. G. Houk
J. L. Hofflund
H. C. Rubin
chron.

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

RECEIVED
JUN - 2 1955

May 31, 1955

Memorandum

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

From: G. L. Neumann

Subject: Docket No. DMEA-3644 - (Fluorspar-Lead-Zinc)
Ozark-Mahoning Company
B. E. Joiner, et al. tract
Pope County, Illinois

Attached hereto as per your request is a plan map showing a tentative drilling program on the Ollie Joiner Tract and the Louis Foe Tract. The exact location of any of the drill holes is contingent on the results of the previously drilled holes. I have laid out 42 holes to be drilled at -45° inclination to an average depth of 400 feet. This would aggregate 16,800 feet of drilling. The operator requested an allowable maximum of 12,000 feet for the Ollie Joiner 80 acres, but since the Louis Foe 40 acre tract is to be included in the contract this allowable maximum should be increased. The applicant, Ozark-Mahoning Company, has been found through several DMEA contracts and their production and reserves record to be thorough and conscientious. Their policy is to use enough footage to reasonably authenticate any ore estimates and no more. I do not deem it wise to place too many meaningless restrictions on an exploration contract. If the exploration of these two tracts does not warrant the full 16,000 feet of drilling allowed, the 16,000 feet would not be drilled. These contracts can be stopped at any time by the Field Team or the Applicant. Outside of the cross-section drilling and until at least two breaks and/or mineralized zones have been further indicated, this drilling will be accomplished with one machine. The drilling program is on a contingent basis and is purely tentative, depending on previous results.

G. L. Neumann
G. L. Neumann by h.v.h.

Enclosures

Ozark-Mahoning Company

Mahoning Mining Division
Rosiclare, Illinois

May 27, 1955

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 31 1955

Mr. C. O. Mittendorf, Administrator
U. S. Department of Interior
D.M.E.A.
Washington 25, D. C. 600

Dear Mr. Mittendorf:

Subject: Docket No. DMEA-3644 - Fluorspar, Lead and Zinc
Ozark-Mahoning Company
B. E. Joiner, et al. Tract
Pope County, Illinois

I wish to acknowledge your letter of May 25th, reference the above captioned subject.

I note your suggestion that the Louis Foe 40 acre tract lying immediately east of the B. E. Joiner 80 acre tract be included and made a part of the proposed prospecting program covering the Joiner 80 acre tract.

The Ozark-Mahoning Company is the owner of the minerals underlying the Foe tract. Under the circumstances we have no objection to including same as a portion of the ground to be prospected. We assume however that prospecting will not be limited to structure "B".

Very truly yours

OZARK-MAHONING COMPANY

A. G. Johnson

A. G. Johnson

AGJ/fs
cc: Tulsa Office
Platteville Office
Mr. J. G. Trewartha

Hopkins

IN REPLY REFER TO:

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

May 20, 1955

Re: DMEA-3644
Ozark Mahoning Co.
Ollie Joiner Tract
Rosiclare, Illinois
Fluorspar, Lead & Zinc

Memorandum

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

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

Subject: Review of the Field Team report

This recommendation of approval of the application is based almost entirely on inference, but the inferring of the examiners and the applicants, due to intimate acquaintance with the area, is nearly devoid of the element of chance.

I concur with the recommendation of the Field Team.

T. A. Gilsgaard
For: N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
ROOM 1025 POST OFFICE BLDG.
KNOXVILLE 2, TENN.

May 12, 1955

Memorandum

To: Operating Committee, DMEA - Washington

From: D. M. E. A. Field Team, Region V - Knoxville, Tennessee

Subject: Field Team Examination Report on - DMEA-3644, Ozark-Mahoning Company, Mining Division - Rosiclare, Ill. Fluorspar-Lead-Zinc)

Transmitted are four copies of the field examination on the subject project.

The Field Team agrees with the examiners' findings and recommend approval of the application as outlined in the report. We have noted, and are in agreement, with the examiners' recommendation that exploration of the western 40 acre tract should be held in abeyance until further evidence of mineralization is discovered.

Robert A. Lawrence
EXECUTIVE OFFICER
DMEA REGION V

V. J. Lynch
V. J. Lynch,
Member DMEA Field Team
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
5-20-55
(date)

Field Team Report on Examination of Property

by

R. D. Trace 1/ and G. L. Neumann 2/

Docket No. DMEA-3644 - (Fluorspar-Lead-Zinc)

Applicant: Ozark-Mahoning Company
Mahoning Mining Division
Rosiclare, Illinois

Summary

The object of this application is to enhance the Nation's reserves of the three critical materials: fluorspar, lead and zinc.

The Operating Committee made a Field Team referral of this application on March 28, 1955.

Considerable diamond core drilling has been done in the immediate vicinity and practically surrounding the 80 acre Ollie Joiner Heirs tract, designated in the application. (See map with application). This drilling was accomplished on several exploration programs: the 40 acre R. F. Reid tract adjoining the Ollie Joiner tract on the southeast was drilled by the Applicant and a small body of good grade ore (estimated at 20,000 tons) was indicated; the 40 acre E. M. Stotlar tract adjoining to the northeast was similarly drilled by the Applicant and indicated a strong structure with some minable ore, especially in the southern part of the tract; in the 40 acre Fairbairn tract, to the north of the Stotlar, the Applicant drilled 4 holes along the southern border conjunctively with the Minerva Oil Company, Fluorspar Mining Division. This drilling indicated 4 parallel breaks and some fluorspar mineralization. The eastern break indicated by the drilling was further drilled along the northeast trend on Contract Idm-E549, Operator, Minerva Oil Company,

1/ R. D. Trace, Geologist, Geological Survey.
2/ G. L. Neumann, Engineer, Bureau of Mines.

Reviewed by
DMEA OPERATING COMMITTEE
5-20-55
(date)

Fluorspar Mining Division. A discovery was certified from this exploration ore body estimated at 32,500 tons. The Minerva Company is now doing more detailed drilling on this tract; on the 40 acre, R. F. Reid tract, to the north of the Fairbairn, the Applicant has drilled two holes and is continuing to drill an east-west cross section across the center of this tract. Good structure was found in these two holes and a 3-foot section of ore was cut in one of them; on the 40 acre, Jefferson tract, to the east of the Reid tract, is the producing Jefferson Mine, now owned by Minerva Oil Company. Reserves for the Jefferson Mine as stated in the Fairbairn application (DMEA-2838) were estimated at 100,000 tons of fluorspar with high values in lead and zinc from two parallel structures; on the 40 acre Mackey-Humm tract to the north of the Jefferson tract is the producing Mackey Mine, estimated reserves probably 50,000 tons of high grade fluorspar with good lead and zinc values from two parallel structures, one of these structures, the Stewart fault, has been a producer along 1½ miles of trend to the northeast; on the 120 acre, Newt Parkinson tract to the northwest of the Ollie Joiner 80 acres, no core holes have been drilled in the eastern 80 acres but on the Lee Parkinson 40 acre tract to the west and on the northwest 40 acres of the Newt Parkinson, the Applicant drilled 20 core holes. These holes indicated a sizable ore body (probably 60,000 tons) of good grade fluorspar with associated lead and zinc in two or three parallel breaks. The Ozark Company is now engaged in rehabilitating the old Parkinson shaft and intend to mine this ore in the near future; on the 80 acre Loyd-Gibson tract to the north of the Newt Parkinson tract are the 19 core holes recently drilled under contract Idm-E685 and certified as a discovery (ore body estimated at 55,000 tons). Four or five parallel breaks were indicated in this drilling but only one showed enough concentration of mineral values to be termed ore.

Work proposed on the area covered by this examination is (1) core drill a series of holes at 200-foot spacing on a cross-section following a diagonal line between the southeast and the northwest corners of the tract, (2) if the fault breaks, previously indicated, are further confirmed or other faults are indicated, it is proposed to drill further core holes along such potential trends so long as encouraging results are obtained.

Conclusions

Since considerable exploration has been done in the area surrounding this Ollie Joiner tract and it has established that the general geological pattern appears to be one or more series of parallel breaks, many of which are mineralized with fluorspar, lead and zinc and since the area under consideration is covered with a blanket of alluvium and there are no outcrops apparent, the Applicant's proposal to drill a cross cut across the general trend appears to be the most logical method to explore this highly potential area for economic deposits of critical materials.

Recommendations

It is the recommendation of the Field Team to approve this application, as presented, so far as the eastern 40 acres is concerned, but with the proviso that the continuation of the cross cut onto the western 40 acres be held in abeyance, subject to later approval of the Field Team, if sufficient new evidence of formational breaks or mineralization is discovered, either in the drilling of the eastern 40 acres or from other adjacent tracts.

Time Spent on Property

This property was examined on April 12 - 13, 1955 by the Field Team composed of Robert D. Trace, U. S. Geological Survey and G. L. Neumann, Bureau of Mines. Mr. A. G. Johnson, Geological Engineer, Ozark-Mahoning Company, aided the Field Team in the examination.

Name and Location of Property

The Ollie Joiner tract comprises the NW$\frac{1}{4}$ of the NE$\frac{1}{4}$ and the NE$\frac{1}{4}$ of the NW$\frac{1}{4}$ of Section 27, Township 12S, Range 7E. It is located in Pope County, Illinois about 7 miles northwest of Rosiclare, via Illinois highways 34 and 146, and 8 miles northeast of Golconda, via Illiniis highway 146. These State highways are good all-weather roads. The property is on a dirt road $\frac{1}{2}$ mile south of Illinois 146.

Competency of Applicant

The Applicant is one of the largest producers of domestic fluorspar and is well staffed with technical and operational personnel. Ozark-Mahoning has completed three DMEA contracts, two of which have been certified. Their planning, efficiency, cooperation and reports are exemplary. The Applicant's financial responsibility is excellent.

Applicant's Property Rights

The Applicant has a lease and option on the 80 acre, Ollie Joiner Heirs tract. A copy of the lease is included with the application. Owner's Consent to Lien forms will be executed when contract is signed.

Description of Property

The Ollie Joiner Heirs tract is low rolling farm land. There are at present no mining or milling facilities on this tract. This particular 80 acre is well surrounded by exploration but no work has ever been done on the tract itself.

Geology

The ore deposits of the Kentucky-Illinois fluorspar district consist of fluorspar with subordinate quantities of sphalerite and galena. Calcite and barite are the principal gangue minerals. The ore deposits, excluding the Cave in Rock bedded deposits, occur as veins along steeply dipping faults that

displace relatively flat or shallow-dipping shale, sandstone, and limestone beds of Mississippian and Pennsylvanian age.

The geology and vein deposits of the Ollie Joiner tract are typical of the district and similar to the Fairbairn tract (DMEA-2838) and the Loyd-Gibson tract (DMEA-3338), which are about 1,500 feet northeast and 2,800 feet north, respectively. (See applicant's map).

Although outcrops in this area are poor, the Bethel sandstone probably is the surface formation over most of the Joiner tract. The Bethel sandstone of lower Chester age is a light-brown fine-grained massive sandstone, generally a little over 100 feet thick. Underlying the Bethel sandstone is the Renault formation, also of lower Chester age. This formation consists of alternating beds of dark-gray shaly limestone, gray shale, and gray oolitic limestone. The formation is approximately 2/3 limestone and 1/3 shale, and is about 100 feet thick. Underlying the Renault formation is the Ste. Genevieve formation of Meremec age. The Ste. Genevieve is divided into three members: the Levias limestone member--a light gray oolitic limestone about 30 feet thick, the Rosiclare sandstone member--a greenish gray calcareous sandstone about 25 feet thick, and the Fredonia limestone member--mostly light gray and oolitic or dark gray and fine-grained limestone, about 150-175 feet thick. Practically all the ore deposits of the area occur where the wall rocks of the faults are the Ste. Genevieve.

Because of the poor outcrops, no surface evidence of faulting has been found on the Joiner tract. This lack of surface indication of faulting, however, is typical of the sourrounding area, where considerably faulting has been found as a result of diamond drilling. A number of northeast-trending steeply dipping faults almost certainly cross at least the eastern half of the Joiner tract. (See applicant's map). This supposition is based upon the projection

of faults known to the northeast and south of the Joiner tract. Although the zone of faulting can be projected with considerable certainty through the eastern half of the Joiner tract, the details of the faulting (and accompanying mineralization) are unknown and can be found only by physical exploration or possibly geophysical techniques. The displacement along the faults in this area ranges from 20 to 100 feet and usually is less than 50 feet. This small displacement is also a factor that makes it difficult to locate and map the faults from surface evidence.

In addition to the localization of ore deposits along faults where the country rock is the Ste. Genevieve, there is suggestive evidence on both the Fairbairn and Loyd-Gibson tracts that ore may be localized at fault intersections. A projection of the faults known to the north of the Joiner tract, suggests that a fault intersection may be present in the south central part of the tract. (See applicant's map. Fault F, as drawn on applicant's map, may cross the north property line about 200 feet east of where it is now shown. This shift is based upon drilling now in progress on the Reid tract about 3,000 feet northeast of the Joiner tract.)

If ore deposits occur on the Joiner tract, and there is a reasonable chance that they will, they would probably be vein deposits of fluorspar with subordinate sphalerite and galena localized along faults, as found in the DMEA exploration on the nearby Fairbairn and Loyd-Gibson tracts.

An ore body of 32,500 tons was certified on the Fairbairn tract, and about 55,000 tons of ore was found through DMEA assistance on the Loyd-Gibson tract. In addition, Ozark-Mahoning found significant deposits on the Newt Parkinson tract, just south of the Loyd-Gibson tract. Also, about 20,000 tons of ore was found by Ozark-Mahoning on the Reid tract just south of the Joiner tract.

In summary, the favorable recommendation to drill the eastern half of the Joiner tract is based upon the following geologic factors:

(1) The probable occurrence of several faults.

(2) The presence of the favorable Ste. Genevieve formation at a depth of about 300 feet.

(3) The presence of several minable ore bodies in the immediate vicinity.

(4) The possible presence of a fault intersection.

Availability of labor, utilities, materials, etc.

This area has always been the leading producer of domestic fluorspar and still holds that position. Manpower is available for any size or type of fluorspar operation: unskilled labor $1.00 an hour, skilled labor $1.50 an hour. Supplies and materials are obtainable at Rosiclare or Elizabethtown, Ill., both seven miles from this property. Several large machinery houses have agents and truch delivery service in Marion, Kentucky, 25 miles distant or Paducah, Kentucky, 30 miles distant. Power is available through R.E.A. lines near the property. Water is available in Big Grand Pierre Creek, which runs just west of the property.

Applicant's Proposal

The work program has been well planned logically and financially to get the best answer as readily and cheaply as possible. The area has a good potential and the program: 12,000 feet of diamond core drilling, appears adequate to explore the 80 acre tract. The drilling would be on a continuation of former contracts and the price is very reasonable especially for the caliber of work produced. The program would start within 30 days after the contract is signed and continue for 18 months, which appears adequate but realistic considering that all of drilling except the original cross-cut will be contingent

upon indications from previous holes.

Allowable Costs of Project

The drilling will all be done on independent contract with a slight additional cost for technical assistance, guidance, sampling and analysis of samples.

Core drilling per foot	-	$2.60
Geologist	-	0.15
Clerical	-	0.02
Assaying	-	0.01
Total unit cost	-	$2.78

College Park, Md.
May 2, 1955

DOCKET COPY
Surname: Hopkins Houk

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

MAY 25 1955

Ozark-Mahoning Company
Mahoning Mining Division
Rosiclare, Illinois

Re: Docket No. DMEA-3644 - Fluorspar, Lead and Zinc
Ozark-Mahoning Company
B. E. Joiner, et al. Tract
Pope County, Illinois

Gentlemen:

Reference is made to your application for exploration assistance dated January 12, 1955, on the B. E. Joiner, et al. Tract, Pope County, Illinois.

On your areal map you have shown the probable projections of five untested fault structures across the Joiner Tract. The structure designated "B" which appears to have the greatest possibilities also crosses the adjoining Louis Foe 40 acre tract. Because of the apparent benefit to the Louis Foe Tract from exploration work on structure "B" on the Joiner Tract, we suggest that the Foe Tract be included in the area for exploration.

If you agree with this suggestion please indicate your approval to this office in writing.

Sincerely yours,

C. O. Mittendorf

Administrator

JHopkins:ad 5/24/55
Copy to: Admr. R. File
Docket
Operating Committee
Field Team, Region V
Mr. Kiilsgaard, 5222
Mr. Arundale, 3516
Mr. Houk

R.C.G.

FILE COPY
Surname:
Hopkins
Houk
Selfridge
Johnson

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

600

MAR 24 1955

Mr. Robert A. Laurence
Executive Officer, DMEA
Field Team, Region V
Room 13, Post Office Bldg.
Knoxville 2, Tennessee

Subject: Docket No. DMEA-3644 - Fluorspar-Lead-Zinc
Ozark-Mahoning Company
B. E. Joiner, et al. Tract
Pope County, Illinois

Dear Mr. Laurence:

Please review the subject application and arrange for a field examination if you deem it necessary.

Copies of memoranda from the Geological Survey, dated March 8, 1955, and from the Bureau of Mines, dated March 18, 1955, are enclosed for your information.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (24B)

Approved:

J. H. Hedges (24B)
Member, Bureau of Mines

Thor H. Kiilsgaard (24B)
Member, Geological Survey

Enclosures 4

JHopkins:ad 3/23/55
Copy to: Admr. R. File
Docket
Operating Committee
Mr. Kiilsgaard, 5222
Mr. Arundale, 3516
Mr. Houk

FILE COPY
Surname:

Hopkins
Houk
Kiilsgaard
Hedges
Selfridge
Johnson

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

MAR 2 4 1955

Ozark-Mahoning Company
Mahoning Mining Division
Rosiclare, Illinois

Re: Docket No. DMEA-3644 - Fluorspar-Lead-Zinc
Ozark-Mahoning Company
B. E. Joiner, et al. Tract
Pope County, Illinois

Gentlemen:

Your application for assistance in exploring the subject property has been reviewed by the Nonmetallic Minerals Division of the Defense Minerals Exploration Administration and has been referred to Mr. Robert A. Laurence, Executive Officer, DMEA Field Team, Region V, Room 13, Post Office Building, Knoxville 2, Tennessee, for further consideration and possibly a field examination.

The Regional Office will contact you at an early date if an examination is to be made. Any assistance that you may give the members of the field team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf
Administrator By ESF

JHopkins:ad 3/23/55
Copy to: Admr. R. File
Docket
Operating Committee
Field Team, Region V
Mr. Kiilsgaard, 5222
Mr. Arundale, 3516
Mr. Houk

R.C.B.

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

March 18, 1955

Memorandum

To: Mr. Lawrence G. Houk, Chief, Non-Metallic Minerals Division, Defense Minerals Exploration Administration

From: Commodity Specialist, Branch of Construction and Chemical Materials

Subject: Review of application; D.M.E.A. Docket No. 3644, Fluorspar-Lead-Zinc, Ozark-Mahoning Co. - B. J. Joiner et al tract, Pope County, Ill.

It is my understanding that the applicant has submitted additional information concerning holes drilled on the Milbourne, Stotlar and Reid tracts. It is therefore recommended that the application and such additional information as has been supplied be referred to the Field Team for evaluation and recommendations.

John E. Holtzinger

John E. Holtzinger

Copy to: Files
Div. of Minerals
Br. of Const. & Chem. Mats.
Mr. Holtzinger

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IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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March 8, 1955

Memorandum

REVIEW OF APPLICATION DMEA-3644 (Fluorspar-lead-zinc)

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

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

Applicant's name and address: Ozark-Mahoning Co., Rosiclare, Ill.

Name of property: B. E. Joiner tract

Location of property: NW 1/4 NE 1/4 and NE 1/4 NW 1/4 sec. 27, T. 12 S., R. 7 E.

Summary of applicant's proposal:
12,000 feet of drilling; holes along line across these 2 quarter-sections at right angles to projected faults, and additional holes depending upon results.

Sources of information on applicant's property:
DMEA-2838, Fairbairn tract
DMEA-3338, Loyd-Gibson tract

Comments: The scope of the proposed exploration seems too large and might be cut to about 8,000 feet. The basis for any exploration in NE 1/4 NW 1/4 of sec. 27 has not been demonstrated. Evidence for the most northwesterly questioned fault or mineralization along it has not been presented. Therefore Stage I of the exploration might be limited to about 4,000 feet, or 6 to 8 holes along the southeast end of the proposed section in NW 1/4 NE 1/4 sec. 27. Additional drilling (total 4,000 feet) might be justified after Stage I has been completed, along the strike of any ore body found.

RECOMMENDATION: Field Team appraisal.

R. E. Van Alstine

R. E. Van Alstine

DEPARTMENT OF THE INTERIOR
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Ozark-Mahoning Company

Mahoning Mining Division
Rosiclare, Illinois

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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February 17, 1955

Mr. Lawrence G. Houk, Chief
Non-metallic Minerals Division
U. S. Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Dear Mr. Houk:

Re: Docket No. DMEA-3644-Fluorspar-Lead-Zinc
B. E. Joiner et al Tract
Pope County, Illinois

I wish to acknowledge your letter of February 14th requesting additional data in connection with the application for exploration assistance on the above captioned property.

I am enclosing for your information one set of drill logs covering the E. M. Stotlar 40 Acre Tract as well as one copy covering the R. F. Reid 40 Acre Tract. The property immediately southwest of the Reid, known as the Milbourne Tract, has not been under lease to our company, consequently, the holes which are shown on the map have not been drilled by us and we do not have definite enough information to send you the data on same.

With respect to the shaft on the Milbourne Tract located along the edge of Big Grand Pierre, this was inspected by our company about twelve years ago at which time it had been pumped out by people prospecting same. The shaft was twenty feet deep and shows in the bottom a vein of barite with traces of lead and spar with heavy zinc. The vein was twelve to eighteen inches in width.

On the Reid property, there is a shaft in the northeast corner which was sunk about fifty years ago and is supposed to be eighty feet in depth. The dump shows traces of spar and zinc.

In the northwest portion of the Stotlar 40 Acre Tract, there is also a shallow shaft which was sunk about fifty years ago and from the appearance of the dump it might be as deep as thirty to forty feet. It also shows a little barite and spar in sandstone formations.

On the Cruson Heirs property, there is also a shaft which we have been told is approximately 100 ft. deep but is not on the vein. The dump here also shows traces of spar in a sandstone formation.

I trust this is the information you desire.

Very truly yours,

OZARK-MAHONING COMPANY
Mahoning Mining Division

A. G. Johnson

A. G. Johnson

AGJ/blc

Enclosures — Cross sections
D. H. Records.

PLATE-IMPERIAL COUNTY

B. F. Reid 40 Acres
Diamond Drill Hole No. 1
Elevation: 459.8
Location: 159' south and 95' west of the NE corner of SW, of NE, of Sec. 27, T 12 S, R 7 E, Pope County
Angle: 45° Bearing: N 71° W
Drilled by: Baldwin
Examined by: L. A. Brooke

Started: 1-25-52
Finished: 2-8-52

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0-12	Surface
12-26	White sand Dx
26-85	" " some calcareous streaks
85-111	Brown lime streaks of green and red shale
111-139	Brown shaly lime
139-146	Green shale
146-160	Brown lime, shaly
160-214	Brown lime and green shale
214-248	Brown crystalline lime 242-243 calcite
248-271	Gray dense to oolitic lime - Lower Ulare
271-315	Monolare sand
315-347	Gray and brown oolitic lime
347-374	" " " lime, slightly shaly
374-381	Gray and brown lime
381-384	" " " " heavy calcite stringers
384-396	Brown lime and calcite stringers., shaly slips 387-390 and 392-393 Heavy calcite 393-396
396-414	Gray lime
414-415	Heavy calcite oily
415-425	Brown lime
425-453	Brown lime shaly
453-463	Dark brown lime
463-471	Gray oily oolitic lime
471-502	" oolitic lime

OZARK-MAINTING COMPANY

R. F. Reid 40 Acres
Diamond Drill Hole No. 2
Elevation: 484.2
Location: 942' south and 357' west of the NE corner of SW¼ of NE¼ of Sec. 27, T 12 N, R 7 E, Pope County
Angle: 45° Bearing: N 64° W
Drilled by: Baldwin
Examined by: E. A. Drecke

Started: 2-8-52
Finished: 2-27-52

0-10	Surface
10-57	Broken oxidized sand
57-141	Gray sand, few shaly partings
141-147	" " , broken, Barite stringers
147-159'-6"	" " , some brecciation and gouge slips, Barite streaks, traces spar & Pb
159'-6"-170	Leached brown crystalline lime with sand streaks, traces spar, Zn & Pb Fault @ 170
170-175	Broken gray sand, traces spar and barite
175-194	Gray sand
194-197	Leached crystalline brown lime
197-204	Gray sand
204-207	Gray sand, green shale streaks
207-221	Gray lime, little calcite
221-231	Green fossiliferous shale
231-258	Gray lime some shale
258-265	Green and red shale
265-267	Brown crystalline lime

OZARK-MAHONING COMPANY

R. F. Reid 40 Acres
Diamond Drill Hole No. 3
Elevation: 505.99
Location: 590' south and 262' west of the NE corner of SW 1/4 of NE1/4 of Sec. 27 T12S R7E
Angle: 45 Bearing : N 63° W
Drilled by: Baldwin
Examined by: E.A. Brecke

Started 2-27-52
Finished 3-21-52

0 - 9	Surface
9 - 20	Ex Oxidized white sand
20 - 69	Oxidized white sand
69 - 120	Gray sand, few calcite and barite seams
120 - 126	Oxidized gray sand
126 - 147	Gray sand
147 - 160	Gray sand few leached spots
160 - 161	Green sand, some brecciation
161 - 179	Gray sand
179 - 181	Gray calcareous sand, little shale
181 - 192	Gray sand Base of Bethel 192
192 - 210	Green calcareous shale
210 - 235	Brown lime shale streaks
235 - 260	Green shale, lime streaks, little calcite
260 - 267	Brown lime
267 - 327	Gray fossiliferous shale, lime streaks
327 - 347	Brown, crystalline lime, shale streaks
347 - 369	Lower O'Hara lime, little calcite
369 - 370	Lower O'Hara lime, calcite stringers, little Zn
370 - 375	Good spar, Zn and Pb in calcite, lime stone breccia
375 - 400	Dark brown crystalline lime

Assay:	Ca Co3	CaF2	Zn	Pb
369 - 375	41.65	15.72	15.19	2.45

QUARK-MALCHING COMPANY

R. F. Reid 40 Acres
Diamond Drill Hole No. 4
Elevation: 431.0
Location: 342' south and 237' west of the NE corner of SW 1/4 of NE 1/4 of Sec 27 T12S R7E Vertical Hole
Drilled by: Baldwin
Examined by: E.A. Brooks

Started 3-21-52
Finished 3-26-52

0 - 21	Oxidized white sand Bx
21- 38	Oxidized white sand
38 - 55	Grey sand
55 - 62	Grey sand oxidized streaks
62 - 80	Grey sand
80 - 82	Grey calcareous sand
82 - 88	Grey sand, some calcareous streaks
88 - 93	Green calcareous shale Base of Bethel 88

TRIPLE-TAKE MINING COMPANY

R. F. Reid 40 Acres
Diamond Drill Hole No. 6
Elevation: 442.1
Location: 359' south and 595' west of the NE Corner of SW¼ of NW¼ of Sec. 27, T 12 S, R 7 E
Angle 50° Bearing S 75° - 30' E
Drilled by: Baldwin
Examined by: T. A. Brooke

Started: 1-8-52
Finished: 4-19-52

0-20	Thin bedded sand, shaly partings, stained
20-57	Gray sand, few shaly partings
57-86	White sand
86-135	Gray sand scattered shaly partings
135-137	Brown lime sandy
137-144	White sand Base of Bethel 144
144-170	Green shale lime streaks
170-195	Brown lime shaly
195-200	Green to gray shale
200-216	Brown crystalline lime
216-219	Light brown crystalline lime
219-222	Rich spar, zinc and lead, some green shale
222-226.5	Brown crystalline lime, leached, some streaks of spar, Zn & trace of Pb
226.5-237	Brown crystalline lime, little calcite @ 233'
237-251	Lower O'Hara lime
251-257	Rosiclare sand

Ore face 219-226.5 averages 31.70 CaF_2
7.49 Zn
1.29 Pb

True vein with probably 5.0'

Assay	$CaCO_3$	CaF_2	Zn	Pb
219-222	1.61	49.10	14.69	3.09
222-226.5	36.35	19.43	2.70	.09

R. F. Reid 40 Acres
Diamond Drill Hole No. 7
Elevation: 437.4
Location: 347' south and 659' west of the NE Corner of SW¼ of NE¼ of Sec. 27 T 12 S R 7 E

Started: 4-19-52
Finished: 5- 3-52

Angle: 50° Bearing S-780-E
Drilled by: Baldwin
Examined by: N. A. Brecke

0-10	Surface
10-20	Gray sand, shaly partings, oolitised Bx
20-32	Gray sand shaly partings
32-129	White sand
129-132	" " Calcareous
132-146	White sand
146-167	Green to gray calcareous shale
167-189	Brown lime, little shale
189-193	Green and maroon shale
193-209	Brown crystalline lime, some green and red shale
209-216	Green and red shale
216-222	Brown lime
222-252	Gray fossiliferous shale
252-274	Brown crystalline lime
274-290	Lower O'Hara lime
290-295	Roubidoux sand
295-297	Shale, sand and calcite breccia, some zinc
297-307	Gray lime little calcite

OZARK-MAHONING COMPANY

R. F. Reid 40 Acres — Started 5-3-52

Diamond Drill Hole No. 8 — Finished 5-22-52

Elevation: 481.4

Location: 563 ft. south and 738 ft. west of the N. E. Corner of the S. W. 1/4 of N. E. 1/4 of Sec. 27, Twp. 12 S., Range 7 East, Pope County.

Angle: 50° Bearing S. 67° E.

Drilled by: Baldwin.

Examined by: E. A. Brecke

0 - 5 Surface

5 - 36 Ox. sand shaly partings Bx.

36 - 50 Gray sand, shaly partings Bx.

50 - 76 " " " "

76 - 113 Gray sand.

113 - 202 White sand.

202 - 203 " " , some green shale. Base of Bethel 203.

203 - 212 Green shale.

212 - 216 Gray lime, little green shale.

216 - 223 Gray fossiliferous shale.

223 - 249 Brown lime, shale streaks.

249 - 253 Gray shale.

253 - 270 Brown shaly lime.

270 - 277 Green to gray shale.

277 - 282 Calcite-shale-lime breccia, trace Zn 280.

282 - 307 Dark brown to gray oolitic lime.

307 - 321 Lower O'Hara lime.

321 - 353 Rosiclare sand, little calcite at 335.

353 - 358 Light gray oolitic lime.

CLARK-MAHONING COMPANY

R. F. Reid 40 Acres
Diamond Drill Hole No. 9
Elevation: 434.5
Location: 263' south and 556' west of the NE Corner of the SW-1/4 of the NE-1/4 of Sec. 27 T 12 S R 7E Pope County
Angle 50° Bearing S 72E
Drilled by: Baldwin
Examined by: B. A. Brooks

Started 5-22-52
Finished 5-6-52

0-17	Surface
17-21	Gray sand, shaly partings
21-135	White sand
135-136	Sandy lime and shale Base of Bethel 136
136-160	Green to gray shale, fossiliferous, few lime streaks
160-182	Brown lime some shale streaks
182-188	Green to gray shale
188-203	Brown crystalline lime
203-226	Gray shale streaks of fossiliferous lime
226-229	Con. acid spar some low grade spar in shaly matrix rich Zn, some Pb
229-234	Yellow acid spar some Pb and little Zn
234-236	Little acid spar, some replacement material carrying Con Zn and Pb
236-241	Mosiclare sand

Assay

226-236	$CaCO_3$	CaF_2	Zn	Pb
	4.81	70.65	3.01	2.02

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OZARK-MARKETING COMPANY

N. F. Reid 40 Acres
Diamond Drill Hole No. 10
Elevation: 434.5
Location: 263' south & 556' west of the N.E. Corner of the SW-1/4 of N.E.-1/4 of Sec. 27 T 12S R7E Pope County
Angle 60° Bearing S72E
Drilled by: Baldwin
Examined by: W. H. M.

Started 6-7-52
Finished 6-16-52

0-14	Surface
14-20	Gray Sand shaly partings
20-21	White Sand BX
21-109	White Sand
109-111	Gray crystalline lime
111-118	White Sand
118-121	Sand, shaly partings & pyrite Base of Bethel 121
121-140	Green-Black shale, fossiliferous, lime streaks
140-162	Brown lime, few shaly partings
162-165	Maroon Shale
165-179	Brown lime
179-190	Gray lime & shaly partings
190-215	Gray shale, lime stringers
215-251	Gray lime, shaly partings Trace of calcite
251-259	Rosiclare Sand
259-261	Brown fossiliferous lime
261-274	Rosiclare sand
274-277-1/2	Brown lime, shaly partings Trace of calcite, Pb & Zn
277-1/2-285	Good Zn, some spar, Trace Pb & Barite, considerable lime
285-289	Gray lime, shaly partings Trace calcite
289-294	Gray lime shaly partings

	$CaCO_3$	CaF_2	Zn	Pb
Ore face from 277-1/2-285 assays	12.34	11.91	24.64	1.68

OZARK-MAHONING COMPANY

R. T. Reid
Diamond Drill Hole No. 11
Elevation: 434.5

Started 6-17-52
Finished 6-27-52

Location: 263' South & 556' West of the N.E. Cor. of the S.W. ¼ of the N.E. ¼ of Sec. 27, Twp. 12 S., Range 7 E., Pope County.

Same set-up as Holes Nos. 9 and 10

Angle 40° Bearing S. 72° E.

Drilled by: Baldwin
Examined by: W. H. Melcher

0 - 18 Surface

18 - 25 Gray sand, shaly partings.

25 - 40 White sand Bx

40 - 142 White sand.

142 - 145 Gray crystalline lime.

145 - 157 White sand, shaly partings. Zone of bethel 157.

157 - 167 Gray shale, streaks of lime.

167 - 177 Gray shale, streaks of fossiliferous lime.

177 - 185 Gray lime, shaly partings.

185 - 197 Brown lime, shaly partings, trace calcite.

197 - 208 Gray lime, heavy shale partings.

208 - 209 Gray lime, shaly partings, trace calcite breccia, possible fault.

209 - 220 Gray shale, lime stringers, trace calcite.

220 - 225 Gray lime, shaly partings.

225 - 236 Gray lime, shaly partings, trace calcite.

OZARK-MAHONING COMPANY

R. F. Reid 40 Acres
Diamond Drill Hole No. 12
Elevation: 430.4
Location: 155' south and 535' west of the NE corner of the SW¼ of NE¼ of Sec. 27, T 12 S, R 7 E, Pope County
Angle 50° Bearing S 76° E
Drilled by: Baldwin
Examined by: Y. A. Brecke

Started: 6-27-52
Finished: 7-15-52

0-12	Surface
12-20	Gray sand, shaly partings
20-131	Gray sand
131-136	Green shaly sand, some brown lime. Base Bethel 136 Trace Zn at 123'
136-156	Green shale, some brown lime
156-177	Brown lime
177-182	Green shale, little red shale
182-196	Brown crystalline lime
196-207	Brown lime, green shale streaks
207-231	Black shale, streaks fossiliferous shale and brown lime
231-239	Calcite, some brown lime, few thin spar stringers
239-243	Rich sand spar, some Pb and Zn
243-249	Calcite and brown silicified lime spar, Zn and Pb shines
249-256	Rosiglare sand and calcite

Assay	CaCO3	CaF2	Zn	Pb
239-243	7.26	73.27	5.44	4.06
243-249	40.65	10.81	1.65	1.19

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OZARK-MAHONING COMPANY

E. M. Stotlar 40 Acres
Diamond Drill Hole No. 1
Elevation 548.2
Location 406' South and 245' west
of the NE Corner of SE-1/4
of SE 1/4, Section 22, T-12-S,
R 7 E
Angle 45° Bearing N 60° W
Drilled by: Baldwin
Examined by: E. A. Brecke

Started 10-17-51
Finished 11- 2-51

0 - 13	Surface
13 - 42	White sand, some oxidation Bx.
42 - 104	" " " "
104- 121	White to gray sand, shaly partings
121 - 144	White sand
144 - 148	Green to gray shaly sand, Base of Bethel 148
148 - 177	Green to black shale, some streaks of fossiliferous lime
177 - 203	Brown crystalline lime
203 - 207	Green to gray shale
207 - 217	Dense brown lime
217 - 226	Light brown oolitic lime
226 - 241	Mottled red and green shaly lime
241 - 276	Gray shaly lime, fossiliferous
276 - 296	Dark brown crystalline lime
296 - 299	Gray shale
299 - 327	Lower O'Hara lime
327 - 371	Rosiclare sand
371 - 403	Gray oolitic lime
403 - 407	Green to gray mottled shale
407 - 420	Brown lime shaly partings
420 - 421	Massive white calcite, oily
421 - 425	Brown lime dense
425 - 436	Brown dense lime, shaly partings
436 - 451	Dense brown lime scattered calcite stringers
451 - 481	Gray oolitic lime
481 - 520	Brown lime
520 - 522	Brown lime, heavy calcite streaks with little spar and traces of Zn and Pb
522 - 534	Brown lime
534 - 539	Shale and brown lime
539 - 567	Dark brown lime

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OZARK-MAHONING COMPANY

E. M. Stotlar 40 Acres

Started 11-2-51
Finished 11-20-51

Diamond Drill Hole No. 2

Elevation: 539.6

Location: 327' south & 353' west of the N.E. corner of S.E. 1/4 of S.E. 1/4 of Sec. 22, Twp. 12 S., Range 7 E. or 80' north & 104' W. of No. 1.

Angle: 45° Bearing: N. 60° - 30' W.

Drilled by: Baldwin.
Examined by: E. A. Brecke

0 - 10 Surface

10 - 30 Oxidized white sand Bx

30 - 98 " " "

98 - 116 Gray sand, few shaly partings

116 - 142 Gray sand Base of Bethel 142

142 - 173 Greenish gray shale, fossiliferous lime streaks

173 - 201 Gray and brown lime, few shaly partings

201 - 204 Gray shale

204 - 208 Brown lime

208 - 210 " " brecciated, some calcite, traces pyrite

210 - 220 Brown lime, oxidized streaks and thin calcite stringers

220 - 232 Gray and brown lime, few scattered shale and calcite streaks

232 - 237 Green and gray shale. Lime streaks

237 - 241 Gray shale

241 - 308 Gray and brown lime, heavy shale streaks

308 - 341 Lower O'Hara - Light gray and pink-grained lime

341 - 382 Rosiclare sand - Few lime sections. Base Rosiclare 382 ft.

382 - 400 Gray lime. Trace of calcite

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OZARK-MAHONING COMPANY

E. M. Stotlar 40 Acres
Diamond Drill Hole No. 3
Elevation: 463.4

Started 11-20-51
Finished 12-22-51

Location: 275' south and 851 ft. west of the N.E. Corner of S.E. 1/4 of S.E. 1/4 of Sec. 22, Twp. 12 S., Range 7 E.

Angle 45° Bearing N 58° W
Drilled by: Baldwin
Examined by: E. A. Brecke

0 - 8	Surface
8 - 13	White sand, slightly oxidized
13 - 22	Gray sand BX
22 - 82	" "
82 - 87	" " , heavy shale streaks
87 - 107	" " , scattered shale partings
107 - 146	" " , Base of Bethel 146
146 - 155	Green and red shale, calcareous and fossiliferous
155 - 164	Brown lime, scattered shale streaks
164 - 170	Gray fossiliferous shale
170 - 200	Brown fossiliferous lime
200 - 204	Gray shale
204 - 237	Dense brown lime
237 - 245	Gray shale
245 - 253	Brown crystalline lime
253 - 264	Gray fossiliferous shale
264 - 305	Brown lime, dense to crystalline
305 - 334	Lower O'Hara lime
334 - 376	Rosiclare sand
376 - 377	Good white acid spar, little lime, Zn and Pb shines
377 - 399	Brown lime
399 - 441	Brown lime, con. selvage
441 - 453	Brown lime
453 - 461	Gray oolitic lime, scattered thin spar stringers
461 - 461.5	Calcite, traces Zn and spar
461.5 - 470	Gray oolitic lime, traces of spar
470 - 490	Brown oolitic lime
490 - 500	Dark brown lime

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OZARK-MAHONING COMPANY

E. M. Stotlar 40 Acres
Diamond Drill Hole No. 4

Started 12-22-51
Finished 1-10-52

Elevation: 459.6

Location: 248' south and 915' west of the N. E. Corner of S. E. 1/4 of S. E. 1/4 of Sec. 22, Twp. 12 S., R. 7 E.

Angle 45° Bearing S. 59° - 30' E
Drilled by: Baldwin
Examined by: E. A. Brecke

0 - 3	Surface
3 - 20	Gray sand BX
20 - 71	" "
71 - 75	" " , shale streaks
75 - 94	" " , scattered shale partings
94 - 121	" "
121 - 133	Green to gray shale, red mottled and calcareous
133 - 146	Brown shaly lime
146 - 172	Brown lime, scattered shale streaks
172 - 175	Gray shale
175 - 189	Brown lime, shale streaks
189 - 220	Gray calcareous shale, fossiliferous
220 - 222	Brown lime, heavy calcite
222 - 230	" " , few calcite streaks
230 - 231	Calcite in brown lime, traces spar
231 - 244	Light brown crystalline lime
244 - 255	Lower O'Hara
255 - 288	Rosiclare sand
288 - 318	Light brown lime, few calcite stringers @ 294'

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OZARK-MAHONING COMPANY

E. M. Stotlar 40 Acre Tract
D. D. Hole No. 5
Elev. 558.8
Loc.: 170' N - 178' E of SW Corner of SE¼ of SE¼ of Sec. 22, Twp. 12 S, R-7E-Pope County, Illinois
Angle: 50° Bearing: S 61° E
Drilled by: J. S. Baldwin
Examined by: A. G. Johnson
Casing: None

Started: 9-1-52
Completed: 9-17-52

0 - 13	Soil & clay
13 - 80	Oxidized cypress sand
80 - 152	Paint Creek shale - shelly Bethel sand with shale seams
152 - 182	Gray sand
182 - 187	Gray sand, stringers of spar & barite
187 - 217	Gray sand - partially leached and oxidized
217 - 255	Gray sand
255 - 263	Gray sand - shale seams - some ls. B. B. 263 ft.
263 - 285	Greenish gray shale - fossiliferous lime streaks
285 - 296	Light gray lime - few shale seams
296 - 304	Shale - lime streaks
304 - 313	Brown crystalline lime - few shale seams
313 - 326	Shale - lime streaks
326 - 348	Black fossiliferous shale - few calc. seams
348 - 354	Dense brown lime calc. seams
354 - 356	Brown crystalline lime - slightly leached, traces of zinc, calcite and spar
356 - 359	Vein - rich Zn, G. Pb., Lt. spar - some light and dark col. ls.
359 - 365	Light gr. crystalline, lime calcite seams - shaly partings, few spar shs.
365 - 367	Rosiclare sand

Vein from 356-359 ft. assays

10.73	$CaCO_3$
22.59	CaF_2
14.72	Zn
4.59	Pb

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OZARK-MAHONING COMPANY

E. M. Stotlar, 40 Acres
Diamond Drill Hole No. 6
Elevation: 564.2
Location: 347' North & 270' East of the S. W. Corner of S. E. - 1/4 of the SE-1/4 of Section 22. T-12-S; R-7-E Pope County, Illinois
Angle: 50° Bearing S 61° E
Drilled by: J. S. Baldwin
Examined by: W. H. Melcher
Casing: None

Started 9-18-52
Finished 10-3-52

0 - 12	Surface
12 - 20	Coarse white Sand BX
20 - 81	White Sand slightly Oxidized
81 - 146	White Sand shaley partings
146 - 177	White Sand, Bethel
177 - 192	Coarse Oxidized Sand 66% core recovery
192 - 227	White to Gray Sand
227 - 234	White to Gray Sand Shaley partings
234 - 264	White to Gray Sand BB 264
264 - 286	Gray Shale few lime streaks
286 - 298	Brown crystalline lime, few fossils
298 - 305	Dense Brown lime
305 - 311	Gray lime
311 - 345	Black fossiliferous shale, some lime
345 - 358	Brown crystalline lime, trace calc.
358- 359'9"	Light gr. ls. some calc. Traces of spar - Pb-Zn
359'9" - 360'9"	Acid spar some Pb & Zn Calcite - Traces of lime - oily - Fault Zone
360'9" -361'9"	Gray ls.
361'9" - 377	Rosiclare sand - con. calcite - oily

Assay

	$CaCO_3$	CaF_2	Zn	Pb	SiO_2
359'9" -360'9"	10.44	66.28	5.93	0.52	12.79

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OZARK-MAHONING COMPANY

E. M. Stotlar 40 Acres — Started 10-3-52

Diamond Drill Hole No. 7 — Finished 10-22-52
Elevation: 554.4
Location: 4 ft. south and 86' east of the S. W. Corner
S. E. ¼ of S.E. ¼ of Sec. 22, Twp. 12 S., R. 7 E.

Angle 50° Bearing S. 61° 30' E.
Drilled by: Baldwin
Examined by: E. A. Brecks

0 - 13	Surface
13 - 20	Oxidized white sand
20 - 83	" " "
83 - 158	Gray sand shaly partings
158 - 234	White sand
234 - 237	White sand, shaly partings
237 - 265	" " Base of Bethel 265
265 - 286	Green to gray shale, lime streaks
286 - 309	Brown lime, shaly. Oily calcite streak @ 298'
309 - 314	Gray shale
314 - 331	Brown shaly lime, calcite streaks. 319' 321' 323' and 332'
331 - 352	Dark brown shaly lime
352 - 364	Lower O'Hara lime
364 - 365	" " " , some shale and calcite. Fault?
365 - 376	Rosiclare sand
376 - 377½	White calcite, very oily
377½ - 389	Rosiclare sand
389 - 402	Gray and brown lime

Note:

Hole bottomed on Louis Foe 40 Acre Tract located immediately South of Stotlar Tract.

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OZARK-MAHONING COMPANY

E. M. Stotlar 40 Acres
Diamond Drill Hole No. 8
Elevation: 551.1
Location: 516' north and 381' east of the SW Corner of SE¼ of SE¼ of Sec. 22 T. 12 S, R 7 E., Pope County
Angle: 50° Bearing S 61° - 00' E.
Drilled by: Baldwin
Examined by: E. A. Brecke

Started: 10-22-52
Finished: 11-7-52

DEPARTMENT OF THE ... Geology Library ... RECEIVED MAR 9 - 1953

0 - 8	Surface
8 - 21	Oxidized white sand Bx
21 - 56	ditto
56 - 106	Gray sand, shaly partings
106 - 123	" " " " Oxidized streak @ 121 - 121.5 showing spar, $BaSO_4$ and Zn
123 - 133	Gray sand, spar streak @ 130
133 - 164	White sand highly oxidized, traces spar and $BaSO_4$
164 - 198	White sand, few slightly oxidized streaks
198 - 203	Gray sand, shaly partings
203 - 228	White sand
228 - 232	White sand and green shale. Base of Bethel 232
232 - 248	Gray shale, some time streaks
248 - 263	Brown lime, shale streaks
263 - 266	Gray shale
266 - 278	Brown crystalline lime, some shale. Calcite str. 277
278 - 303	Black fossiliferous shale, some lime streaks. Little calcite 285'
303 - 328	Dark brown crystalline lime
328 - 329	Brown lime and calcite, good Zn, Little spar and Pb
329 - 332	Massive calcite, some Oil
332 - 337	Rosiclare sand

COPY

OZARK-MAHONING COMPANY

E. M. Stotlar 40 Acres
Diamond Drill Hole No. 9
Elevation: 518.0
Location: 787' North and 537' East of the S. W. Corner
S.E. ¼ of S. E. ¼ of Sec. 22, Twp. 12 S., Range 7E
Angle 50° Bearing S. 61° - 00' E.
Drilled by: Baldwin
Examined by: E. A. Brecke

Started 11-7-52
Finished 11-24-52

0 - 13	Surface
13 - 20	Bx Gray sand, few shaly partings broken, some oxidation
20 - 64	Gray sand, few shaly partings, broken and oxidized
64 - 65	" " " " " " " " , trace $BaSO_4$
65 - 83	" " " " " $BaSO_4$ in seams
83 - 89	" " highly oxidized " " "
89 - 92	Gray sand
92 - 94	" " oxidized, heavy barite
94 - 117	" " Little barite in seams
117 - 120	" " , slightly brecciated, little calcite and barite
120 - 144	" " , barite in seams, trace spar
144 - 144½	Barite-calcite seam, some Pb
144½ - 163	Gray sand, broken, traces of barite
163 - 164½	Green to gray shale
164½ - 170	Gray sand
170 - 193	Greenish gray shale, lime streaks
193 - 227	Brown lime, shale streaks, little calcite
227 - 233	Brown lime, shaly
233 - 238	Black shale
238 - 241	Dark brown shaly lime
241 - 242	Shaly lime and calcite, little spar, fault
242 - 257	D. B. crystalline lime
257 - 274	Lower O'Hara Lime
274 - 300	Rosiclare sand
300 - 332	Gray oolitic lime

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OZARK-MAHONING COMPANY

E. M. Stotlar 40 Acres

Started 11-24-52

Diamond Drill Hole No. 10

Finished 12-13-52

Elevation: 503.5

Location: 809' north and 473' east of the S. W. Corner S. E. ¼ of S.E. ¼ of Sec. 22, Twp. 12 S., Range 7 E.

Angle: 50° Bearing 562° E

Drilled by: Baldwin

Examined by: E. A. Brecke

0 - 12	Surface
12 - 44	Gray sand, shale partings, oxidized and broken
44 - 50	" " " "
50 - 89	Gray sand, few oxidized streaks
89 - 126	Gray sand, traces of barite
126 - 134	" " , few shaly partings
134 - 160	" "
160 - 179	Green shale, few lime streaks
179 - 184	Gray lime, little calcite breccia 179 - 180
184 - 187	Black shale
187 - 191	Brown lime, little calcite 190
191 - 199	Brown crystalline lime
199 - 226	Gray shale, lime streaks, fossiliferous
226 - 252	Dark brown shaly lime, few streaks oily calcite
252 - 272	Lower O'Hara lime
272 - 298.5	Rosiclare sand
298.5 - 327½	Gray oolitic lime
327½ - 338	Massive calcite, some thin streaks of Pb and Zn, traces spar and barite, fault
338 - 346	Light brown lime

DOCKET FILE
Surname:

Hopkins
Houk
J E Johnson

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

FEB 14 1955

Ozark-Mahoning Company
Mahoning Mining Division
Rosiclare, Illinois

Re: Docket No. DMEA-3644 - Fluorspar-Lead-Zinc
B. E. Joiner et al. Tract
Pope County, Illinois

Gentlemen:

Reference is made to your application for exploration assistance on the subject property.

According to your map of the area, we note that 10 holes have been drilled on the E. M. Stotlar Tract, 12 holes on the R. F. Reid Tract and 4 holes on the C. R. Milbourne et al. Tract.

In order that we may properly evaluate your application, may we suggest that you furnish us with copies of the logs of these holes, together with any additional geological information you may have on the shafts sunk on the Stotlar, Cruson, Reid and Milbourne Tracts.

Sincerely yours,

Lawrence G. Houk, Chief
Nonmetallic Minerals Division

JHopkins:ad 2/14/55
Copy to: Admr. R. File
Docket
Field Team, Region V
Mr. Kiilsgaard, 5222
Mr. Arundale, 3516
Mr. Houk

R.C.S.

MF-500

Not assigned — Hopkins

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 2-7

REFERRED TO:

1. 600
2.
3.
4.

FOR:

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

REMARKS: Wants further information

Check (X) before the items needing attention.

ROBERT E. [illegible]

Initials of sender.

GPO 16—63815-1

IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 4 1955

February 3, 1955

Re: DMEA-3644
Ozark-Mahoning Co.
Joiner Tract
Pope County, Illinois
$33,360
Fluorspar-Lead-Zinc

Memorandum

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

From: R. D. Trace, U. S. Geological Survey

Subject: Review of application

Additional information is needed in order to evaluate the subject application. According to the applicant's map of the area, 10 holes have been drilled on the Stotlar tract, 12 holes on the Reid tract, and 4 holes on the Milbourne tract. The logs of these holes would be quite useful.

Also, according to applicant's map, there is a shaft on each of the following tracts: Stotlar, Cruson, Reid, and Milbourne.

I suggest that the Ozark-Mahoning Co. be asked to furnish any information that they may have about the above mentioned drill holes and shafts.

Bob

R. D. Trace

Ozark-Mahoning Company
Mahoning Mining Division
Rosiclare, Illinois

January 19, 1955
Subject: DMEA-3644
Re: Exploration Assistance
B. E. Joiner et al.

Gentlemen:

The receipt of your application dated January 12, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3644 and referred to the Nonmetallic Minerals Division.

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

So check received ? bank

60932

January 19, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region V

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region V.

DMEA - 3644 Ozark-Mahoning Company

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

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 18 1955

January 17, 1955

Memorandum

To: George C. Selfridge, Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA, Region VIII

Subject: Ozark-Mahoning Company's Application - (Fluorspar-Lead-Zinc) Pope County, Illinois

Transmitted herewith are the original and two copies of a new application from the Ozark-Mahoning Company for diamond drilling 12,000 feet at $2.78 per foot.

The present Docket No. DMEA-3338, Contract No. Idm-E685, has been completed. The final report being prepared by the Field Team will recommend certification of the deposit.

Reference is made to the map accompanying this application. Logs of drilling on the Stotlar and Reid tracts would help in appraising the project proposal.

W. T. Millar

W. T. Millar

Enclosures

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OZARK-MAHONING COMPANY
Mahoning Mining Division
Rosiclare, Illinois

January 12, 1955

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 18 1955

Mr. W. T. Millar, Executive Officer
Bureau-Survey Field Team
Defense Minerals Exploration Administration
Region VIII
U. S. Department of the Interior
Defense Minerals Administration
College Park, Md.

Dear Mr. Millar:

We have decided to file application for Government assistance through DMEA on a prospecting program covering the B. E. Joiner 80 Acre Tract located in Pope County, Illinois. This tract is located in the general vicinity of the Loyd-Gibson Tract on which we recently completed a DMEA project.

In this connection I am enclosing four copies of Form No. MF-103 to which is attached the following:

(a) Copy of the B. E. Joiner, et al lease and option agreement dated September 5, 1952, effective date - December 1, 1954.

(b) 500 ft. scale map of the property and adjoining acreage.

(c) One cross section marked E. M. Stotlar A-A.

If this project is eventually approved we will furnish you with Landowner's Subordination Agreement. We assume, however, that the diamond drilling contract which was submitted for the Loyd-Gibson Tract will be effective covering this new set-up. If not, we will be glad to furnish a new contract covering the drilling.

Very truly yours,

OZARK-MAHONING COMPANY
Mahoning Mining Division

/s/ A. G. Johnson
A. G. Johnson

ccs: Tulsa Office
Plattevolle Office
Mr. J. G. Trewartha

Encls.
AGJ:fhb

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

Minerals Administration
RECEIVED
JAN 18 1955

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

Not to be filled in by applicant

Docket No. 3644
Metal or Mineral Fluorspar-Lead-Zinc
Date Received 1-18-55
Estimated Cost $33,360
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Ozark-Mahoning Company, a corporation organized and existing under the laws of the State of Delaware, Rosiclare, Illinois.

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract

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

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

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

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

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

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

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

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

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

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

5. *The exploration project.*—(State the mineral or minerals for which you to explore .....

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within 30 days and be completed within 18 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated January 12, 1955.

OZARK-MAHONING COMPANY
(Applicant)

By A. G. Johnson

A. G. Johnson

Geological Engineer

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

Ozark-Mahoning Company
Mahoning Mining Division
Rosiclare, Illinois

January 12, 1955

DEPT OF THE INTERIOR
Administration
JAN 18 1955

THE APPLICANT

1. (a) Ozark-Mahoning Company
Mahoning Mining Division
Rosiclare, Illinois

(b) Delaware Corporation.

(c) Data previously furnished.

(d) Not applicable.

3. (a) The N.W. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$ and the N.E. $\frac{1}{4}$ of the N. W. $\frac{1}{4}$ of Sec. 27, Twp. 12 S., Range 7 E., Pope County, Illinois.

(b) B. E. Joiner et al.

(c) Lease and Option Agreement dated September 5, 1952, effective date 12-1-54.

(d) Copy of Lease and Option Agreement attached.

(e) Not applicable

(f) Not applicable

4. (a) No mining operations have been conducted on premises.

(b) None.

(c) Attached hereto is a 400 ft. scale map of the general area showing the location of the Joiner 80 Acre Tract as well as the structures which have been drilled or indicated. To date two fault systems or shear zones have been developed trending in a northeasterly-southwesterly direction, (1) The Jefferson mine structure (2) The Parkinson-Loyd-Gibson structure. Surface showings of fault zones are meager or missing. Little or no prospecting has been done between the two known fault zones. Other mineralized zones could probably be located in this section by systematic prospecting. The surface formations are either cypress or Bethel sandstone.

A portion of the Joiner tract is located along the southwest extension of the Jefferson structure. A series of east-west diamond drill holes were drilled along the north line of the E. M. Stotlar 40 Acre Tract in the Fall of 1953 with the Minerva Oil Company. Attached hereto is a cross section of this drilling, marked E. M. Stotlar Cross Section A-A. We believe this cross section cut four fault zones: B, C, D and E, the locations of which are shown on the 400 ft. scale map.

On the Stotlar 40 Acre Tract it would seem that structure B has been well drilled and the results have been largely negative. Hole No. 5 did, however, cut 3 ft. of ore (true vein width 2 ft.) from 356 to 359 ft., which assayed 22.59 CaF_2, 14.72 Zn and 4.59 Pb.

Still farther southwest along structure B on the Reid 40 Acre Tract, Ozark-Mahoning Company has drilled a small ore body. Drill Holes Nos. 3, 6, 9, 10 and 12 all showed high grade fluorspar-lead-zinc ore over a vertical range of 100 feet averaging about five feet in width. To the southwest, Holes Nos. 5 and 8 are blank. To the northeast Hole No. 1 is also blank. Because of the limited vertical extent of ore we believe there is a good chance this hole was drilled to cut the vein too deep; consequently, was largely calcite.

Structure E appears to be along the southwest extension of the Jefferson Mine ore body. The line hole which cut this fault zone failed to cut any mineralization. Likewise Drill Hole No. 3 on the E. M. Stotlar also cut structure E. Except for one foot of clear fluorspar from 376 to 377 feet this hole was also largely blank. Southwest of No. 3, along structure E there has been no work done.

Little or no prospecting has been done on Structures C and D southwest of the line hole drilling except for the possibility that No. 4 Stotlar cut Structure C. It is to be noted, however, that line hole No. 13 cut high grade spar-lead-zinc ore from 372 to 378 feet, whereas Hole No. 14 which was drilled to cut this same structure 100 ft. shallower, failed to cut any ore whatsoever. It is, therefore, quite probable that No. 4 Stotlar did not cut the fault zone at the proper horizon.

(d) Acreage is accessible for mining and prospecting operation.

(e) All available.

5.(a) Fluorspar-lead-zinc ores.

(b) We propose to drill a cross section on the Joiner property to determine the structural feature. The map will show the approximate location of the cross section. It is proposed to drill the first hole to cut fault B. Upon completion of this hole we propose to back up at 150 - 200 ft. intervals until we have traversed projected faults C, D and E. In addition thereto we may wish to continue the cross section to the northwest in an effort to determine whether other structures may be available on the property for prospecting. Upon completion of this cross section we then have in mind the drilling of a number of holes along strike of the most promising fault zones as determined by the drilling of the preliminary cross section.

(c) Thirty days with completion 18 months from date of contract.

(d) Previously furnished.

6.(a) Independent drill contractors will be used, now drilling on Loyd-Gibson tract. These have worked for the Company many years. This project is set up on the basis of 12,000 feet with the understanding that the program can be abandoned prior to completion provided results are unsatisfactory, either from the Government viewpoint or the Company viewpoint. Holes will average 400 - 450 ft. in depth. The unit cost follows:

Independent drill contractor (Diamond Drilling)	$2.60 per foot
Geologist	0.15 per foot
Clerical	0.02 per foot
Assaying	0.01 per foot
Total cost per foot	$2.78 per foot

There are no other costs than those above stated.

7. (a) Yes.

(b) Money

Encls.

COPY

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 18 1955

LEASE AND OPTION AGREEMENT

The effective date of this lease and option agreement is December 1, 1954.

Signed: B. E. Joiner

Signed: J. D. Quarant
Attorney for Owners

This agreement made and entered into this 5th day of September, 1952, by and between Maggie Joiner, a widow, of Rosiclare, Hardin County, Illinois; B. E. Joiner, a single man, of Rosiclare, Hardin County, Illinois; Gladys Rose and Eugene Rose, her husband, of Marion, Crittenden County, Kentucky and Mildred Lowry and I. A. Lowry, her husband, of Albert Lea, Freeborn County, Minnesota, hereinafter designated as the Owners, and Ozark-Mahoning Company, a corporation organized and existing under and by virtue of the laws of the State of Delaware, and duly authorized to do business in the State of Illinois, hereinafter referred to as the Lessee, WITNESSETH:

WHEREAS, Owners hereby warrant that they are the fee owners of the hereinafter described real estate, all situated in the County of Pope, State of Illinois, to-wit:

> The N. W. $\frac{1}{4}$ of the N. E. $\frac{1}{4}$ and the N. E. $\frac{1}{4}$ of the N. W. $\frac{1}{4}$ of Section 27, Township 12 South, Range 7 East, containing eighty (80) acres, more or less,

+ NE/NE
120 acres

and

WHEREAS, lessee is interested in securing the entire and exclusive right to prospect for, mine, mill and otherwise prepare for market any or all minerals or mineral substances of every kind and character, including oil and gas, in, upon, beneath and underlying the above described real estate; and

WHEREAS, Owners desire to have such minerals and mineral substances mined from said premises as above stated and lessee desires the right and privilege of entering upon said premises and working the same by the use of suitable machinery, equipment, fixtures and buildings, for mining and milling and related purposes which lessee may desire to place upon the premises and mining and recovering from said premises minerals and mineral substances for the purpose of sale and in the exploitation and determination of the possibilities obtaining, and the same is agreeable to Owners:

NOW, THEREFORE, in consideration of the sum of one dollar ($1.00), and other valuable considerations paid or to be paid to the Owners, the receipt and sufficiency of which is hereby acknowledged, and the covenants and agreements

to be kept and performed by the lessee as hereinafter expressed, the owners have and by these presents do give and grant to said lessee the exclusive right to enter upon said premises for the purpose of removing said minerals, and mineral substances, erecting buildings to be used in connection, either directly or indirectly, with the operations of lessee upon the above premises, installing machinery, tipples, sinking shafts, drifting, drilling or using any and all methods known to the science of mining, milling or refining or otherwise preparing ores, minerals, or mineral substances, for market, with the exclusive right to so conduct prospecting, mining, milling and related operations upon the above described premises, together with the right of ingress and egress and to build and construct over and across said lands, roads, trams and other means of conveyance and transportation for the purpose of transporting ores, minerals and other valuable substances found thereon or thereunder.

1. It is understood between the parties hereto that there are clouds upon the title which the Owners will correct by court proceedings before the provisions of this Lease and Option Agreement become effective. It is also understood between the parties hereto that the effective date of this instrument shall be the date when the attorney for the Owners notifies the Lessee by mail that the clouds have been removed and furnishes Lessee with evidence of same.

2. Lessee agrees to begin development work or prospecting or mining in an effort to determine the location of minerals under said premises within ninety (90) days from the effective date hereof. Said prospecting, mining or development work shall be carried on with reasonable expediency insofar as weather, road and marketing conditions will permit. Commencing with the effective date hereof, the minimum annual royalty shall be one thousand dollars ($1,000.00) per year payable quarterly to B. E. Joiner, for the account of the Owners or as the Owners may later direct in writing. Minimum royalties shall be credited by Owners to lessee upon earned royalties when and as same accrue.

3. The term of this lease and option agreement shall be for a period of ten (10) years from the date hereof and as long thereafter as the terms and conditions set forth in this agreement are complied with.

4. The ore mined from said premises is to be milled at the plant of the Lessee located at Rosiclare, Illinois, or any other milling plant which the Lessee

may designate in Kentucky or Illinois. It shall not be mixed or commingled with ores from other lands until it has been crushed and sampled by the Lessee for the purpose of determining the zinc, lead and fluorspar content. The resulting sample is to be assayed at the laboratory of lessee and owners may, upon request, receive an assay certificate showing the zinc, lead and fluorspar content of each day's run. In addition thereto, owners may receive, upon request, pulp of each day's composite sample; provided, however, there is no obligation on Lessee to keep pulps for a period longer than thirty (30) days. In case of dispute as to analyses the pulp prepared from the sample shall be referred to any umpire acceptable to both owners and Lessee and the findings of the umpire shall be binding on both parties.

5. As full compensation to the Owners for all ores mined and milled from the property above described, Lessee shall pay to the Owners a royalty of seven and one-half per cent (7½%) of the selling price of the concentrates produced therefrom, based on the average prices actually received for lead, zinc and fluorspar concentrates by the Lessee during the monthly periods as same are milled and sold. There is no obligation on the part of Lessee to pay royalty on the zinc and lead content of the crude ore when the zinc or lead assay is below 0.5%. The net weight of the crude ore, dry weight basis, is to be determined at scales of Lessee. Owners shall have the right to check weights as often as they deem necessary. On all other minerals, including oil and gas, produced and sold from the above-described property, the royalty shall be ten per cent (10%) of the selling price. All royalties in excess of minimum royalties shall be deposited in the First State Bank of Elizabethtown, Illinois for distribution as the Owners may direct the bank in writing.

6. Owners shall have the right to examine such books, papers and records of the Lessee as may be necessary to determine the amount of royalty due. Payment for all royalty shall be due and payable on the Twenty-fifth (25th) day of the month for all tonnage removed from said property during the preceding month.

7. Owners shall have the right to examine all cores or cuttings removed in the drilling operations upon said premises but all information obtained by such examinations shall be held strictly confidential. Lessee shall keep such maps of the mine workings as may, in Lessee's opinion, be required for the conduct of the mining operations and such maps shall be available to Owner's representatives for examination at reasonable times.

8. Lessee agrees to surrender said premises to the Owners at the termination of this contract and agreement in as good condition as now, excepting for such depletion in value as would result from operations in connection with mining and without any liability for any damage done by said operations, excepting only injury done to growing crops, to fences, buildings, cisterns, orchard or other personal property of Owner by Lessee, for which Lessee shall pay when the actual extent of such damage shall have been determined by the parties hereto, but no liability shall attach to the Lessee for any damage of any kind or character which is not asserted within ninety (90) days from the surrender, forfeiture or termination hereof.

9. Lessee expressly reserves the right to surrender this lease at any time and be relieved from all liability hereunder of every kind and character, except to account for royalties due at the time of such surrender for minerals, or other valuable substances, mined and sold from said premises prior to the date of such surrender.

10. Should Lessee fail or neglect to make all payments or to perform any of the covenants and agreements herein set forth and should still fail to do so after receiving written notice from Owners regarding the same and should fail to take proper steps to meet said conditions within a period of thirty (30) days after the receipt of said written notice, then in that event this lease shall be canceled and terminated. However, in any event, Lessee shall be liable under this contract and agreement only for such royalty payments as may be due and payable at the time such actual cancellation and termination becomes effective as above set forth. Lessee reserves the right to remove from the premises any or all buildings, machinery and other personal property of Lessee placed thereon by Lessee, at the expense of Lessee, after the termination, surrender or forfeiture of this agreement, and shall have one (1) year in which to make such removal.

11. Any notice herein mentioned to be given by Lessee to Owners shall be in writing and shall be sent by registered mail addressed to B. E. Joiner of Rosiclare, Illinois. Any notice herein mentioned to be given by the Owners to the Lessee shall be in writing and shall be sent by registered mail addressed to Lessee at Rosiclare, Illinois.

12. Lessee shall carry Workmen's Compensation and Public Liability Insurance for and during the term of this lease or any renewal or extension thereof; provided, however, that with the permission of the proper authority the Lessee may carry its own insurance as to Workmen's Compensation and Public Liability or any other insurance exacted or provided for under the laws of the State of Illinois, but in such event, Lessee shall save and hold the Owners harmless from any liability for damage occasioned to a stranger or to the employees of Lessee resulting from said operations.

13. Lessee agrees that if any liens of any kind or character are filed against the minerals leased herein on account of the operations of the Lessee that it will pay the same and free the minerals leased from such liens.

14. All parties hereto agree and understand that all the rights of either party hereto may be assigned, and the privilege of assigning or subletting in whole or in part is expressly allowed, and all the covenants and agreements hereunder shall inure to, continue and be binding upon the heirs, legal representatives, successors and assigns of the parties hereto, but no change in the ownership of the land or assignment of royalties shall be binding on the Lessee until after the Lessee has been furnished with a recorded, written transfer or assignment or a true copy thereof.

15. This lease is granted primarily for the purpose of prospecting, mining and selling fluorspar from said premises and while provision is made herein for royalty covering other valuable substances, minerals and metals, including oil and gas, the prospecting and mining of such other minerals, metals and valuable substances is at the option of the Lessee and there is no requirement hereunder for it so to do.

16. Lessee shall have the right to mine and remove ore from the leased premises by means of shafts and drifts located on adjacent ground; Lessee shall further have the right to mine and remove ore from adjacent property through shafts and drifts located on the leased premises; provided, however, that ores so mined and removed shall not be mixed or commingled prior to the determination of the grade thereof.

17. Owners shall pay all taxes assessed against the property leased but the Lessee shall pay all taxes assessed against any buildings, improvements, equipment or other personal property placed upon said premises by it.

18. For the same consideration and the compliance with the terms and conditions hereof the Owners by these presents do give and grant unto the Lessee the exclusive right to purchase at any time within three years from the effective date hereof the above described premises in fee simple, including the surface, minerals, oil and gas, for the sum of Seventy-five Thousand Dollars, ($75,000.00) less any minimum royalties paid under the terms of the lease but not in excess of Three Thousand Dollars ($3,000.00).

If Lessee elects to exercise this option he shall give Owners notice thereof and shall deposit in the First State Bank of Elizabethtown the said sum of Seventy-five Thousand Dollars ($75,000.00) mentioned above less minimum royalties paid by Lessee. Owners agree, upon receiving such notice to convey the above described premises to Lessee free and clear of all encumbrances and with a good and merchantable title, including the waiver of homestead by any and all persons haveng a homestead right therein, and owners likewise agree to furnish a complete abstract of title, certified to date, showing said title to said premises to be free and clear of all liens and encumbrances. Upon Owner's compliance with the above terms and conditions the said First State Bank of Elizabethtown, Illinois shall pay to Owners the sum so deposited with it.

19. IN WITNESS WHEREOF, the parties have signed, sealed and delivered this instrument in quadruplicate each to be original, the day and year first above written.

/S/ Maggie Joiner

/S/ B. E. Joiner

/S/ Gladys Rose

/S/ Eugene Rose

/S/ Mildred Lowry

/S/ I. A. Lowry

OWNERS

OZARK-MAHONING COMPANY

By Signed: J. G. Trewartha
Vice President

/S/ J. L. Cadden
Assistant Secretary

LESSEE

State of Illinois)
) ss.
County of Hardin)

I, W. B. Pell, a Notary Public in and for and residing in said county, in the state aforesaid do hereby certify that Maggie Joiner, a widow, and B. E. Joiner, a single man, personally known to me to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that they signed, sealed and delivered the said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal, this 6th day of September, 1952.

Signed: W. B. Pell
Notary Public

My Commission Expires: Feb. 19, 1956

STATE OF KENTUCKY)
) ss.
COUNTY OF CRITTENDEN)

I, Roberta Wheeler, a Notary Public in and for and residing in said county, in the state aforesaid do hereby certify that Gladys Rose and Eugene Rose, her husband, personally known to me to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that they signed, sealed and delivered the said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal, this 30th day of September 1952.

SEAL
My Commission expires 3-3-53

Signed: Roberta Wheeler
Notary Public

STATE OF MINNESOTA)
) ss.
COUNTY OF FREEBORN)

I, Altine Stadheim, a Notary Public in and for and residing in said county, in the state aforesaid do hereby certify that Mildred Lowry and I. A. Lowry, her husband, personally known to me to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that they signed, sealed and delivered the said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal, this 13th day of September, 1952.

Signed: Altine Stadheim
Notary Public

S E A L

STAMP: Altine Stadheim
Notary Public, Freeborn County, Minn.
My Commission Expires Jan. 9, 1953.

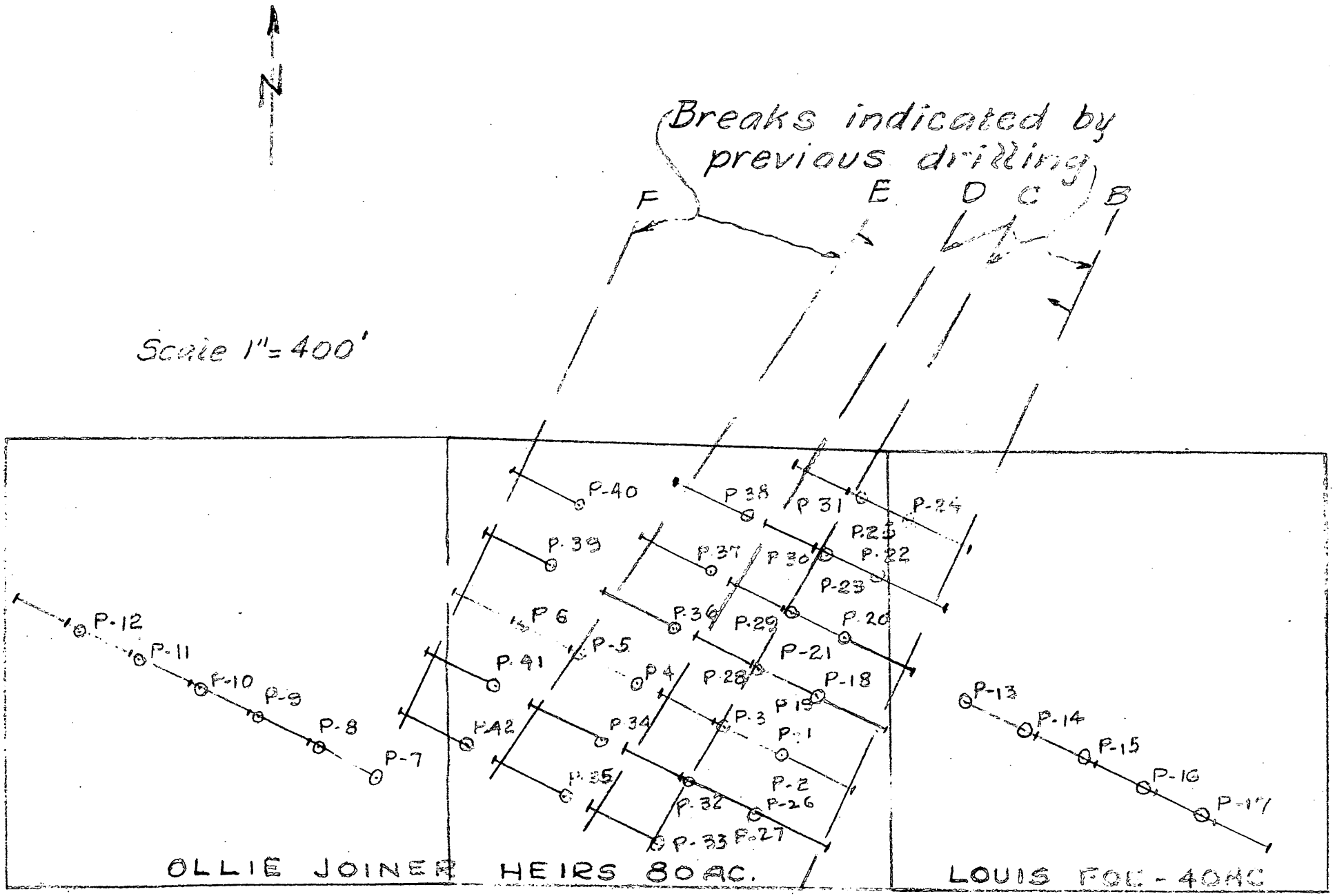
STATE OF ILLINOIS)
) ss.
COUNTY OF HARDIN)

I, A. M. Sperberg, a Notary Public in and for the County and State aforesaid, do hereby certify that J. G. Trewartha, personally known to me to be the Vice President of Ozark-Mahoning Company, a corporation, and J. L. Cadden, personally known to me to be the Assistant Secretary of said corporation, and personally known to me to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that as such Vice President and Assistant Secretary they signed and delivered the said instrument as Vice President and Assistant Secretary of said corporation, and caused the corporate seal of said corporation to be affixed thereto as their free and voluntary act, and as the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth.

Given under my hand and notarial seal this 5th day of September, A. D. 1952.

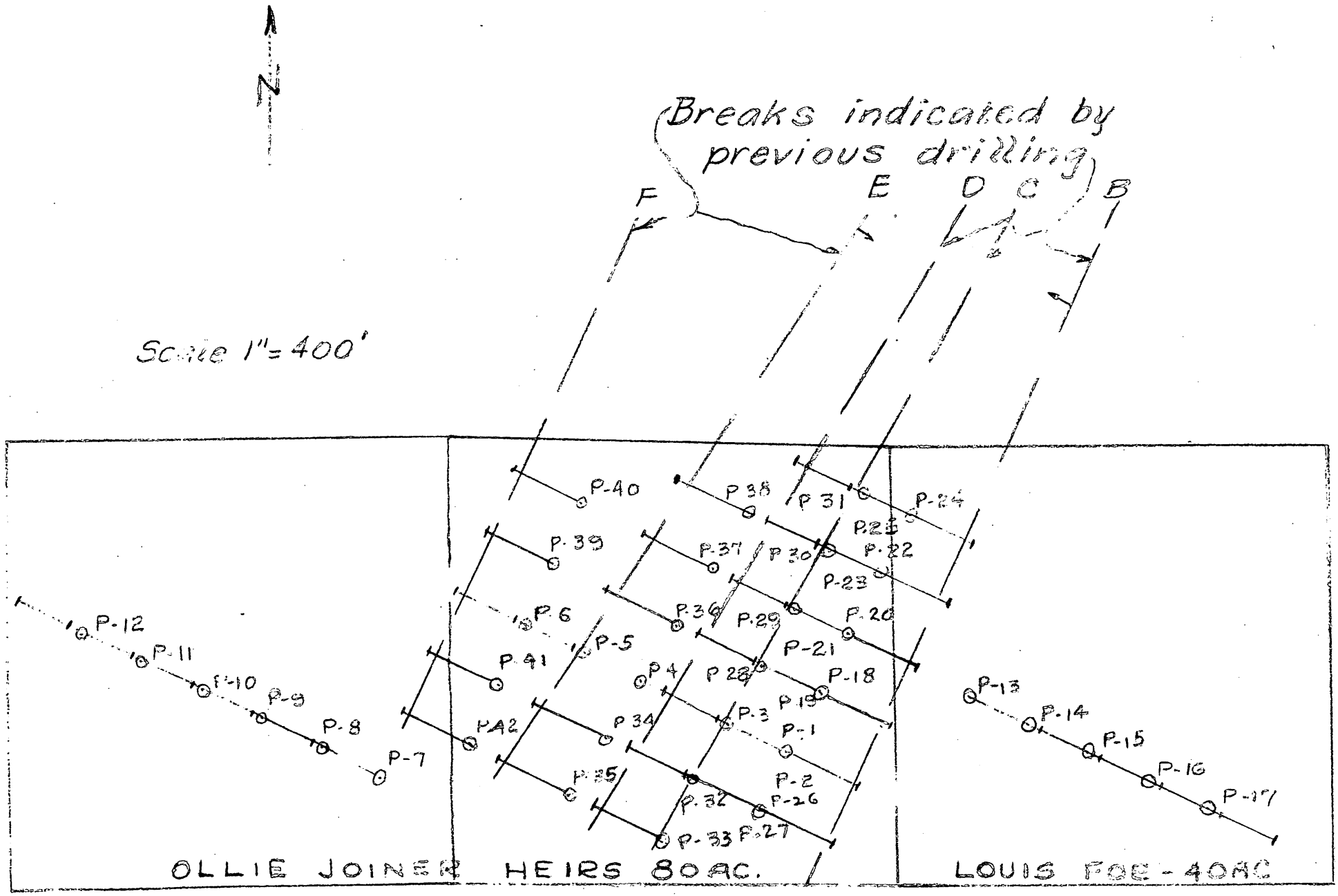
Signed: A. M. Sperberg
Notary Public

My Commission Expires: October 4, 1953.



DRILLING PROGRAM 42 Holes - 45° ~ 400 feet long.
Docket D.M.E.A. 3644 - POPE Co., Ill.

RECEIVED
JUN - 2 1955



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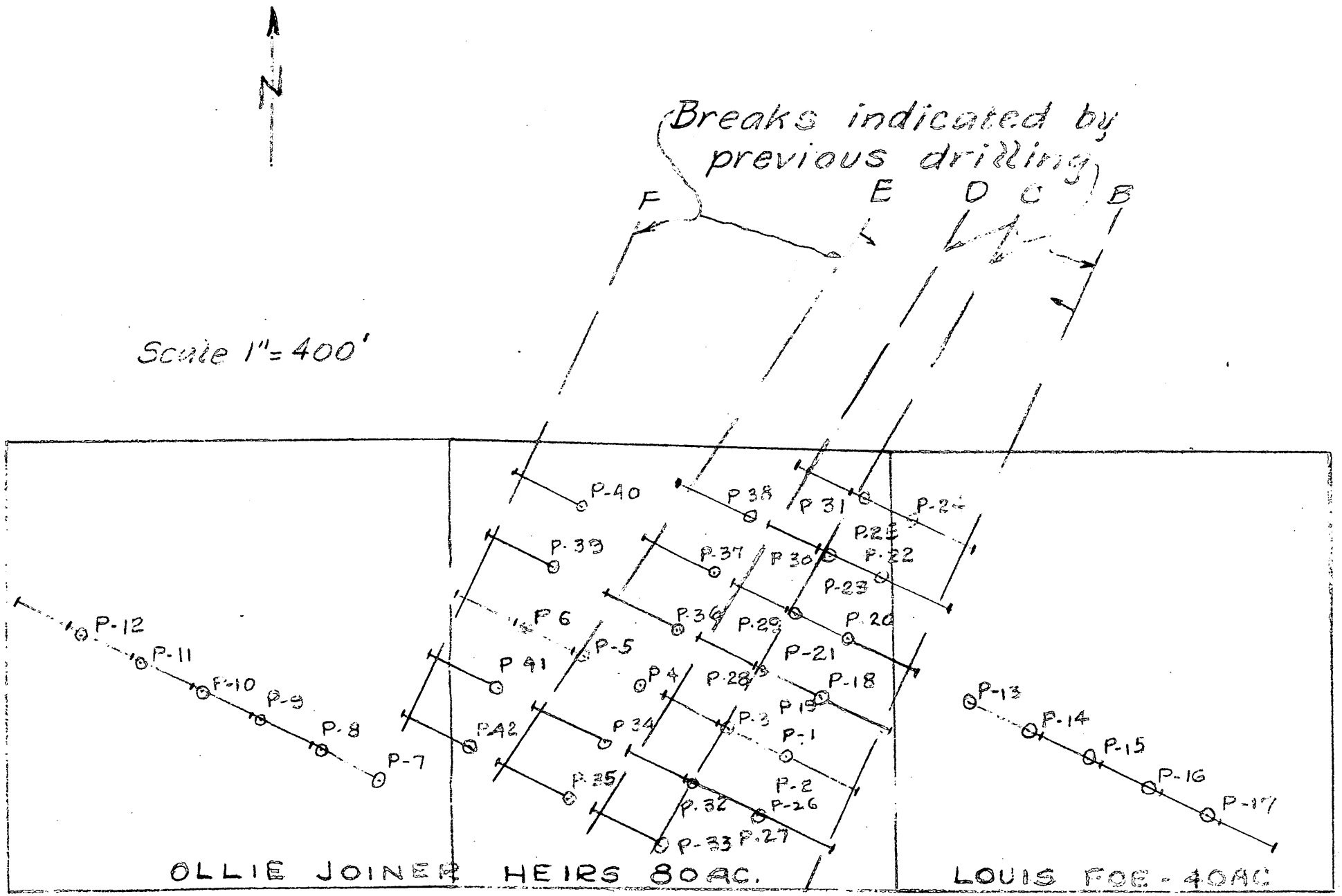
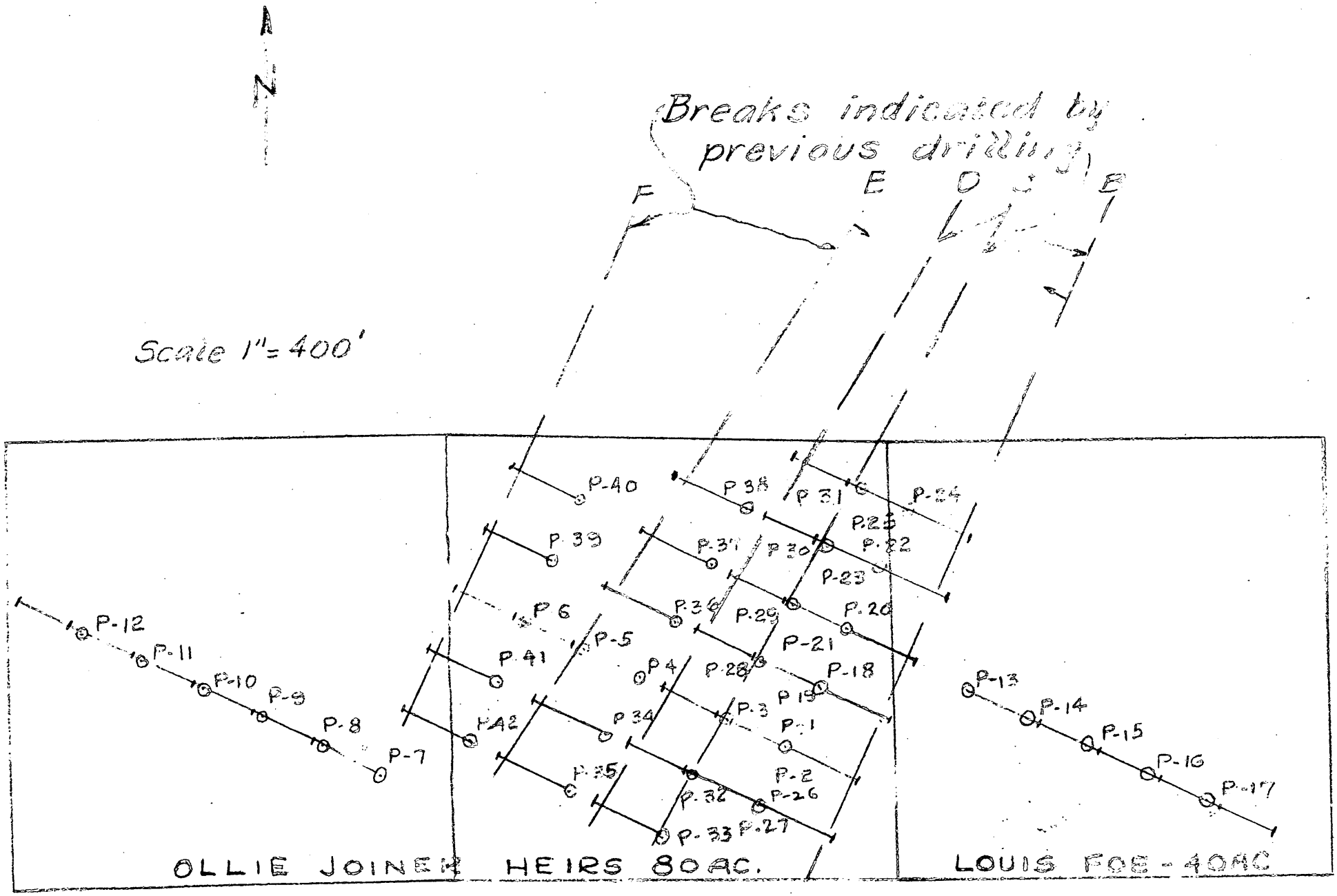
Docket D.M.E.A. 3644 - POPE Co., Ill.



DRILLING PROGRAM 42 Holes - 45° ~ 400 feet long.
Docket D.M.E.A. 3644 - POPE Co., ILL.



DRILLING PROGRAM 42 Holes - 45° ~ 400 feet long.
Docket D.M.E.A. 3644 - POPE Co., Ill.

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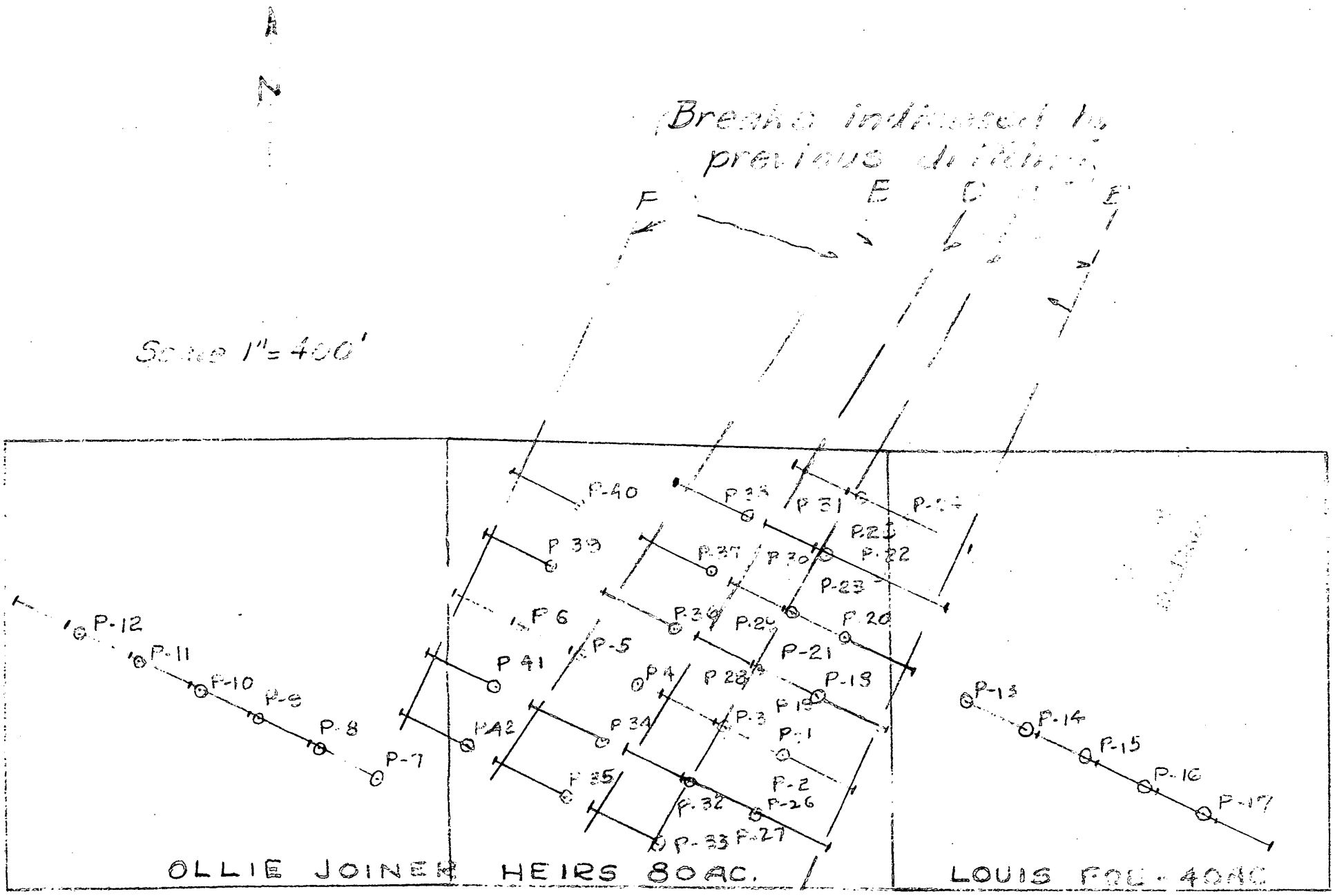
JUN - 2 1955



DRILLING PROGRAM: 42 Holes - 45° ~ 400 feet long.
Docket D.M.E.A. 3644 - POPE CO., ILL.

RECEIVED
JUN - 2 1955

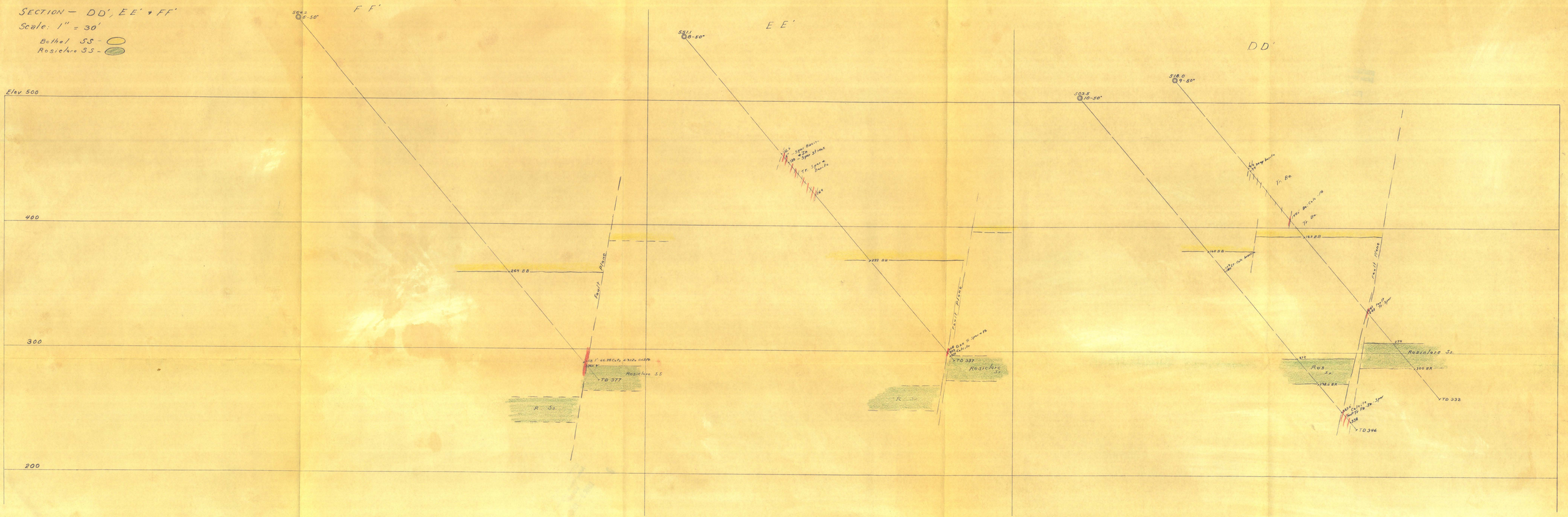
E. M. STOTLAR 40 Ac

SECTION — DD', EE' & FF'

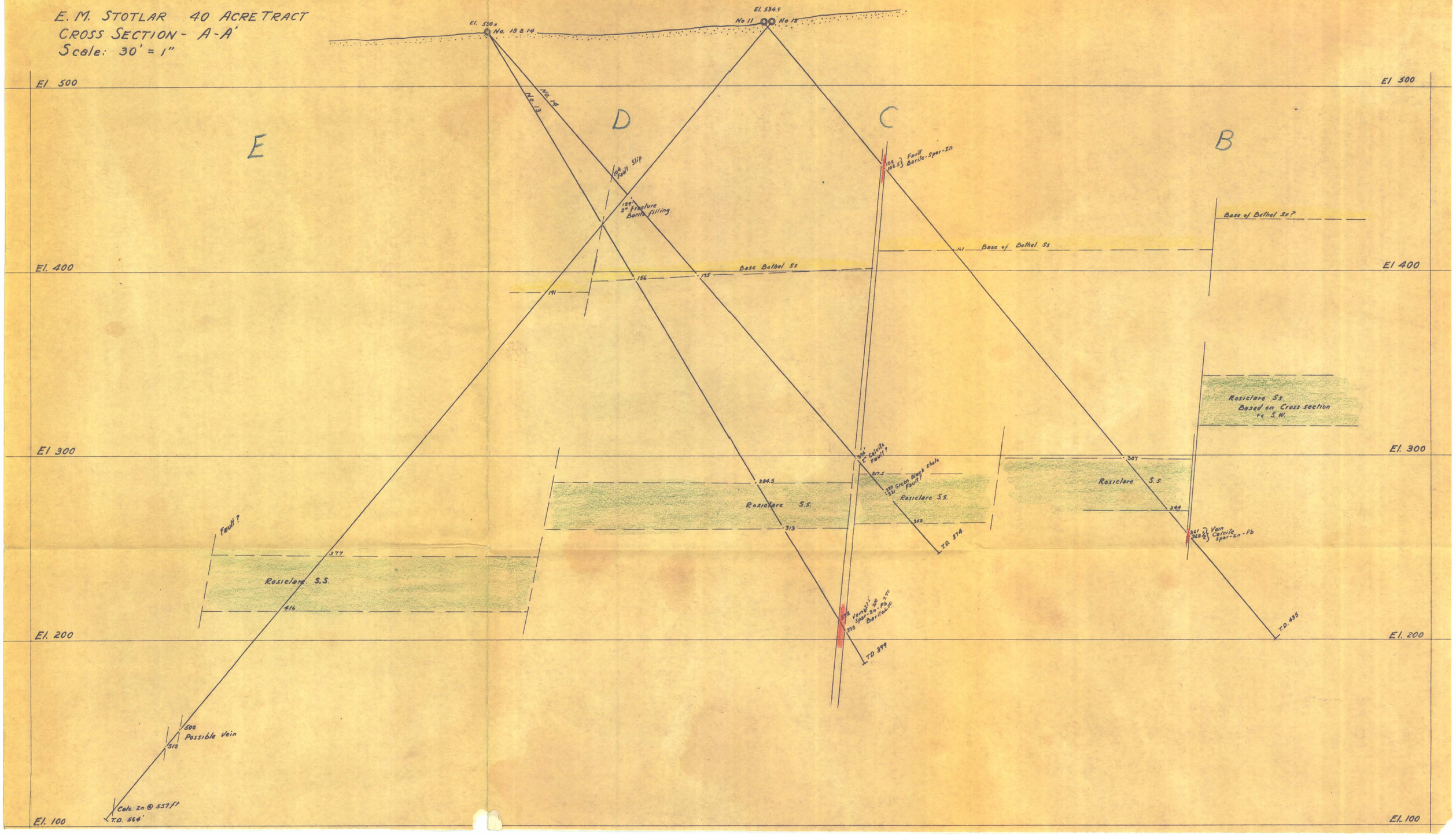
Scale: 1" = 30'

Bethel SS -

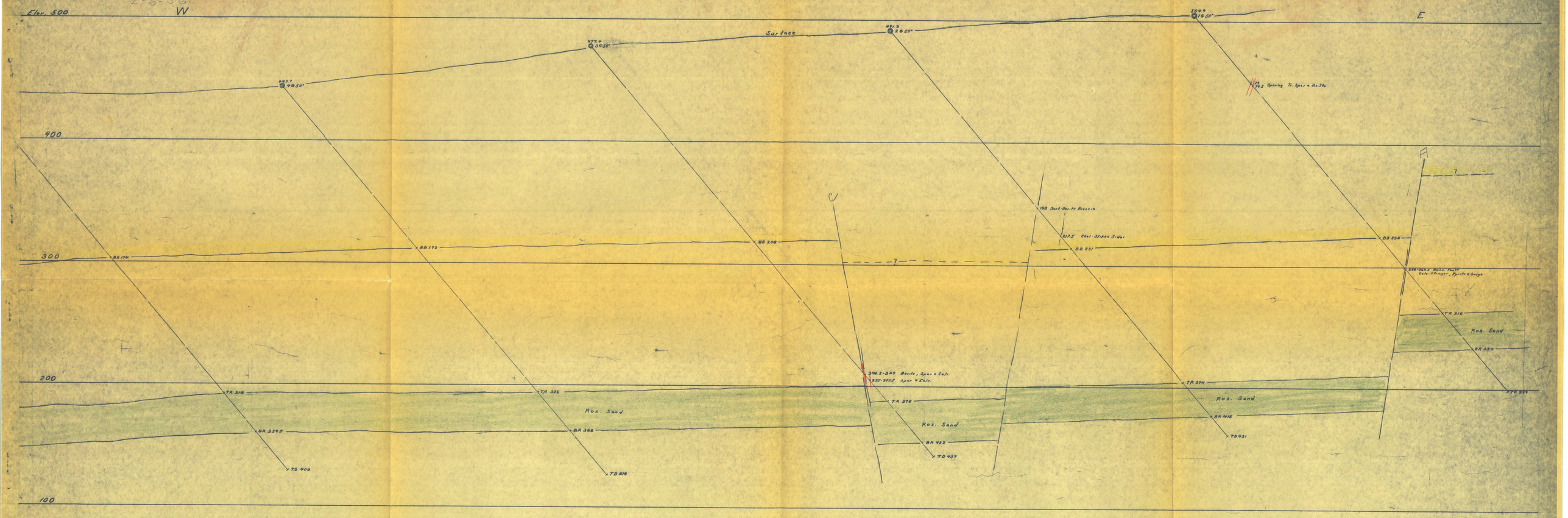
Rosiclare SS -



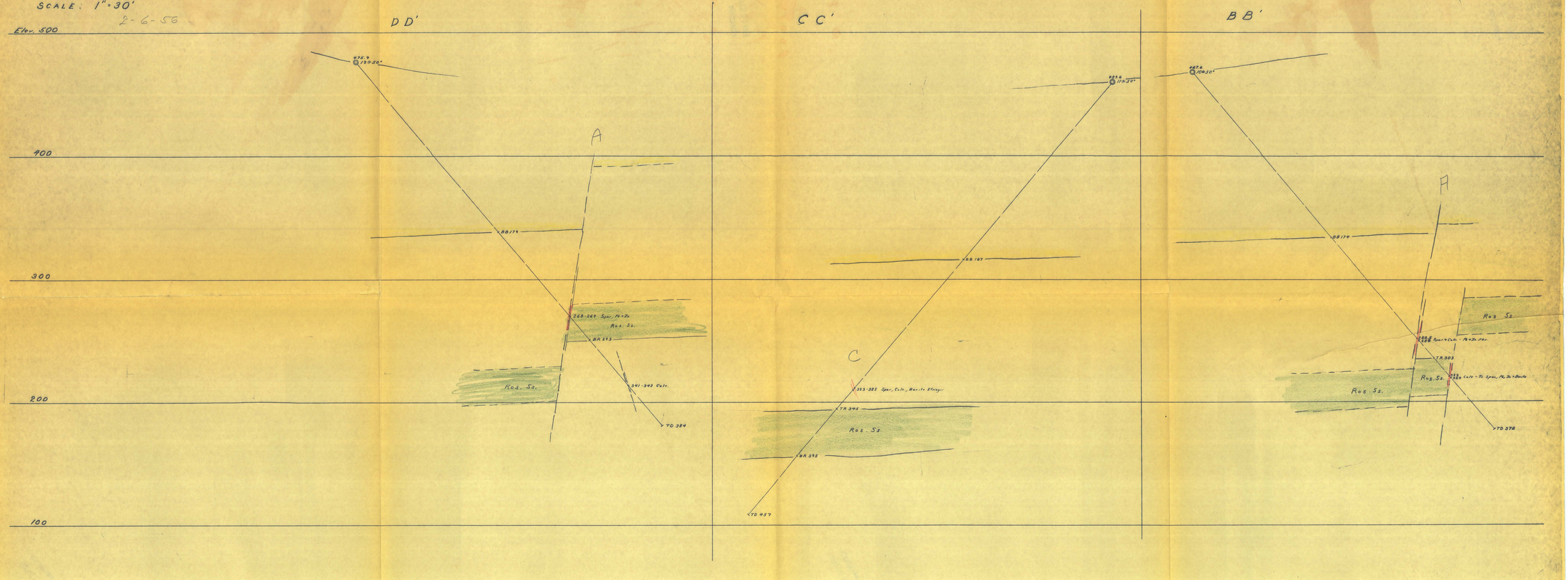
E. M. STOTLAR 40 ACRE TRACT
CROSS SECTION - A-A'
Scale: 30' = 1"



B.E. JOINER 80 ACRE TRACT
SECTION - AA' Sheet #1
SCALE: 1" = 30'
2-6-56



B.E. JOINER 80 ACRE TRACT
SECTION BB', CC', DD'
SCALE: 1" = 30'
2-6-56



B.E. JOINER 80 ACRE TRACT
SECTION - AA' Sheet #2
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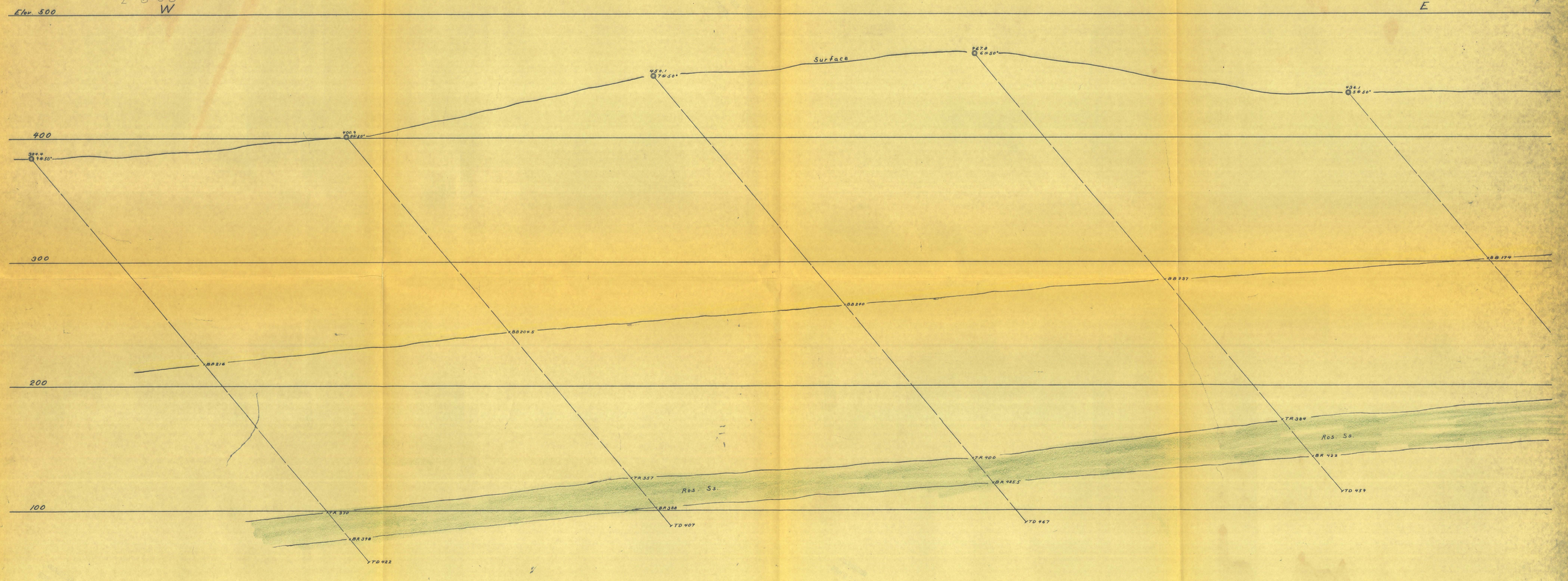
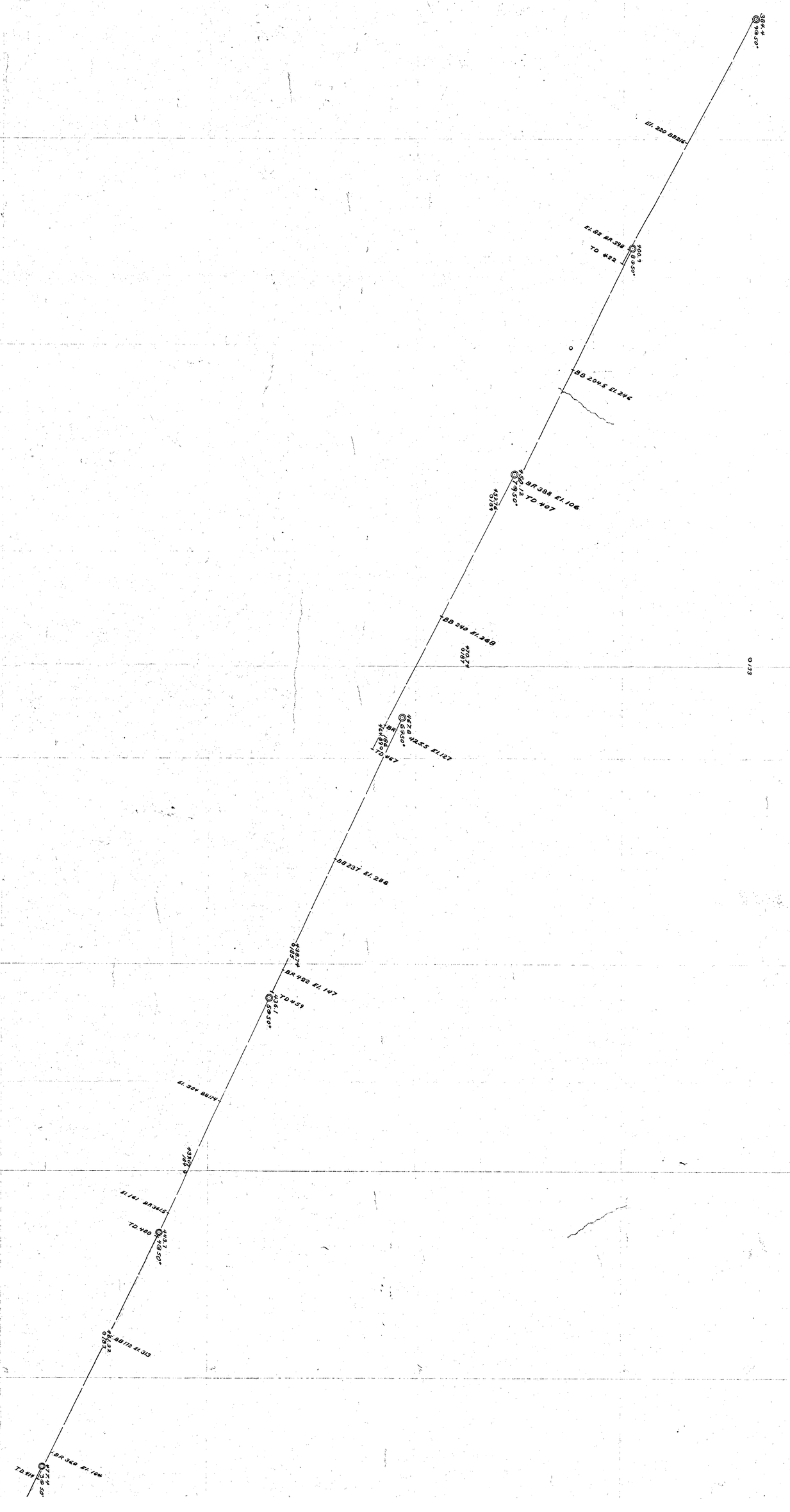
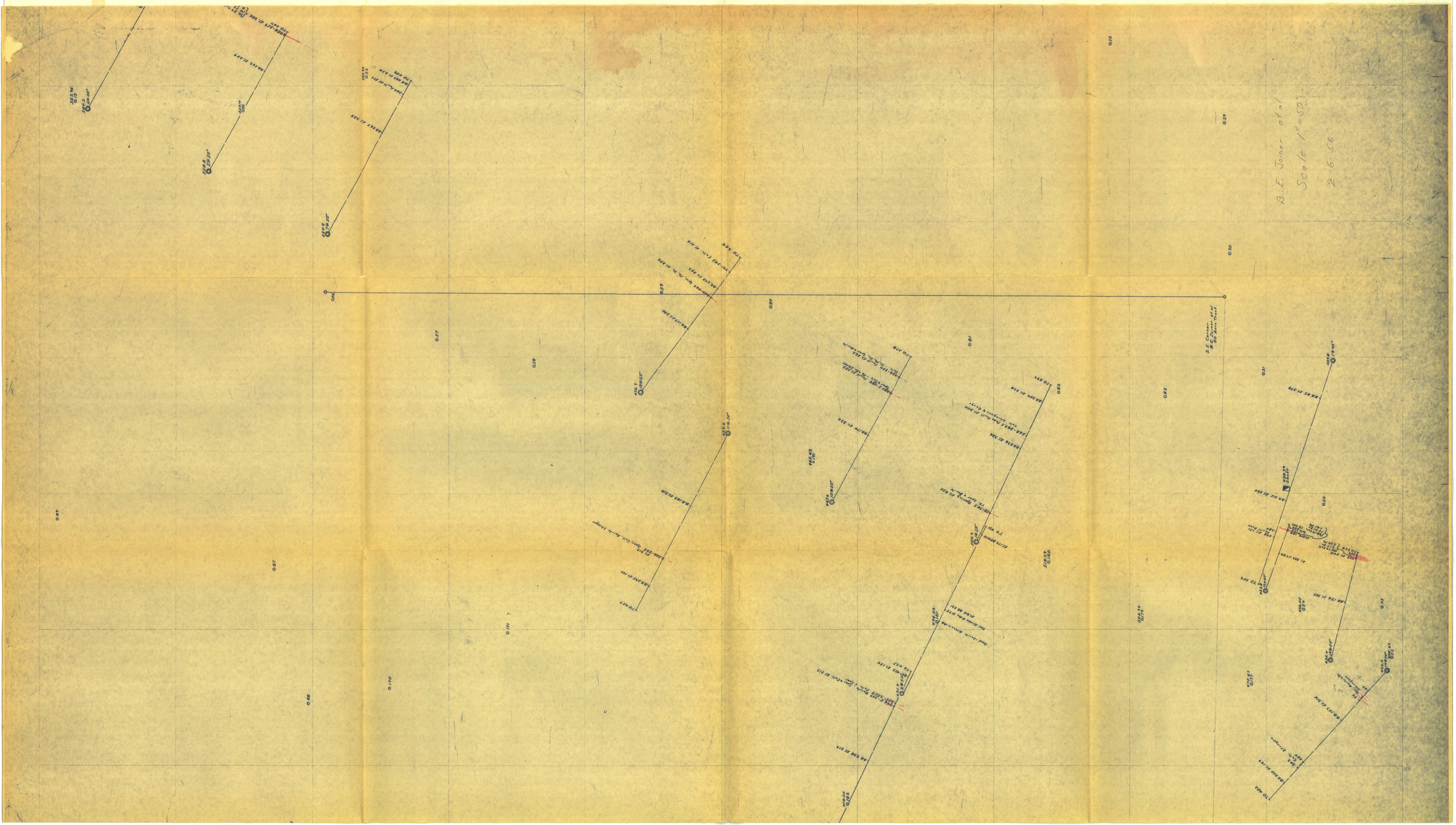
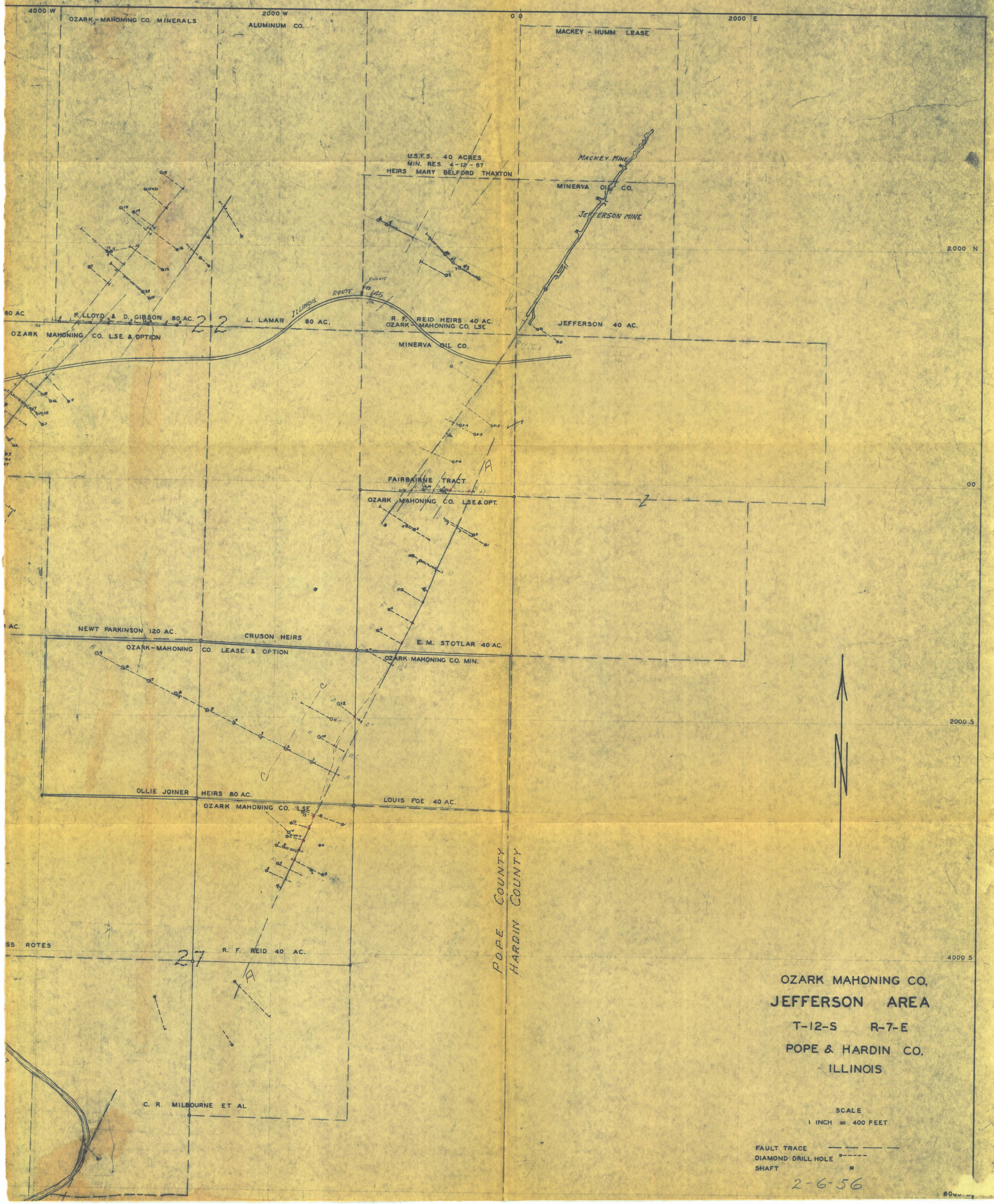
2-6-56






B.F. Johor et al
Scale 1"=50'
2-6-56


4000 W
2000 W
0 0
2000 E
OZARK - MAHONING CO. MINERALS
ALUMINUM CO.
MACKEY - HUMM LEASE
U.S.F.S. 40 ACRES
MIN. RES. 4-12-87
HEIRS MARY BELFORD THAXTON
MACKEY MINE
MINERVA OIL CO.
JEFFERSON MINE
2000 N
ILLINOIS ROUTE 145
Culvert
80 AC
F. LLOYD & D. GIBSON 80 AC.
L. LAMAR 80 AC.
R. F. REID HEIRS 40 AC.
OZARK - MAHONING CO. LSE
JEFFERSON 40 AC.
OZARK MAHONING CO. LSE & OPTION
MINERVA OIL CO.
FAIRBAIRNE TRACT
OZARK MAHONING CO. LSE & OPT.
00
NEWT PARKINSON 120 AC.
CRUSON HEIRS
E. M. STOTLAR 40 AC.
OZARK-MAHONING CO. LEASE & OPTION
OZARK MAHONING CO. MIN.
2000 S
OLLIE JOINER HEIRS 80 AC.
LOUIS FOE 40 AC.
OZARK MAHONING CO. LSE
POPE COUNTY
HARDIN COUNTY
R. F. REID 40 AC.
4000 S
C. R. MILBOURNE ET AL
N
OZARK MAHONING CO.
JEFFERSON AREA
T-12-S R-7-E
POPE & HARDIN CO.
ILLINOIS
SCALE
1 INCH = 400 FEET
FAULT TRACE
DIAMOND DRILL HOLE
SHAFT
2-6-56

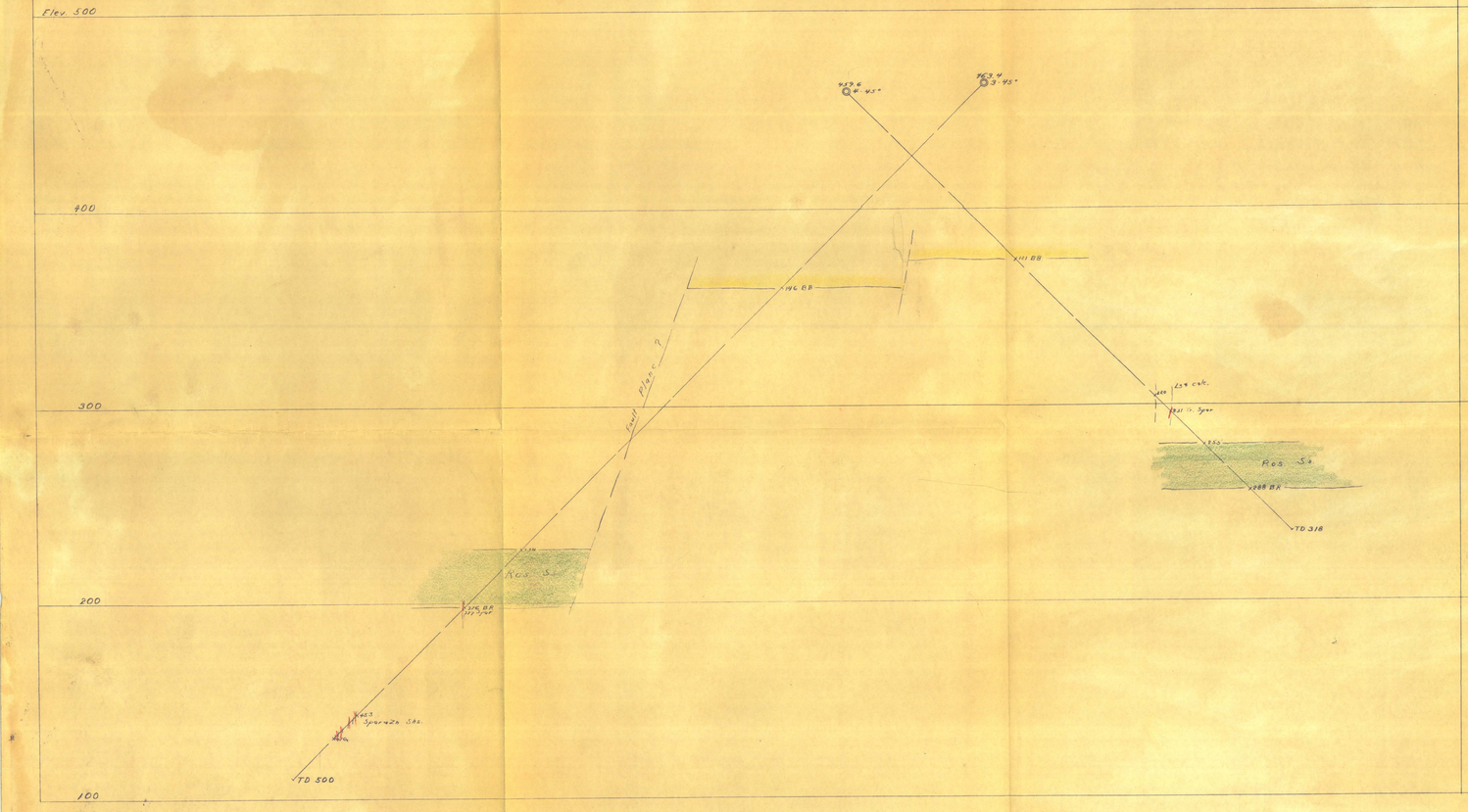
E. M. STOTLAR 40 Ac

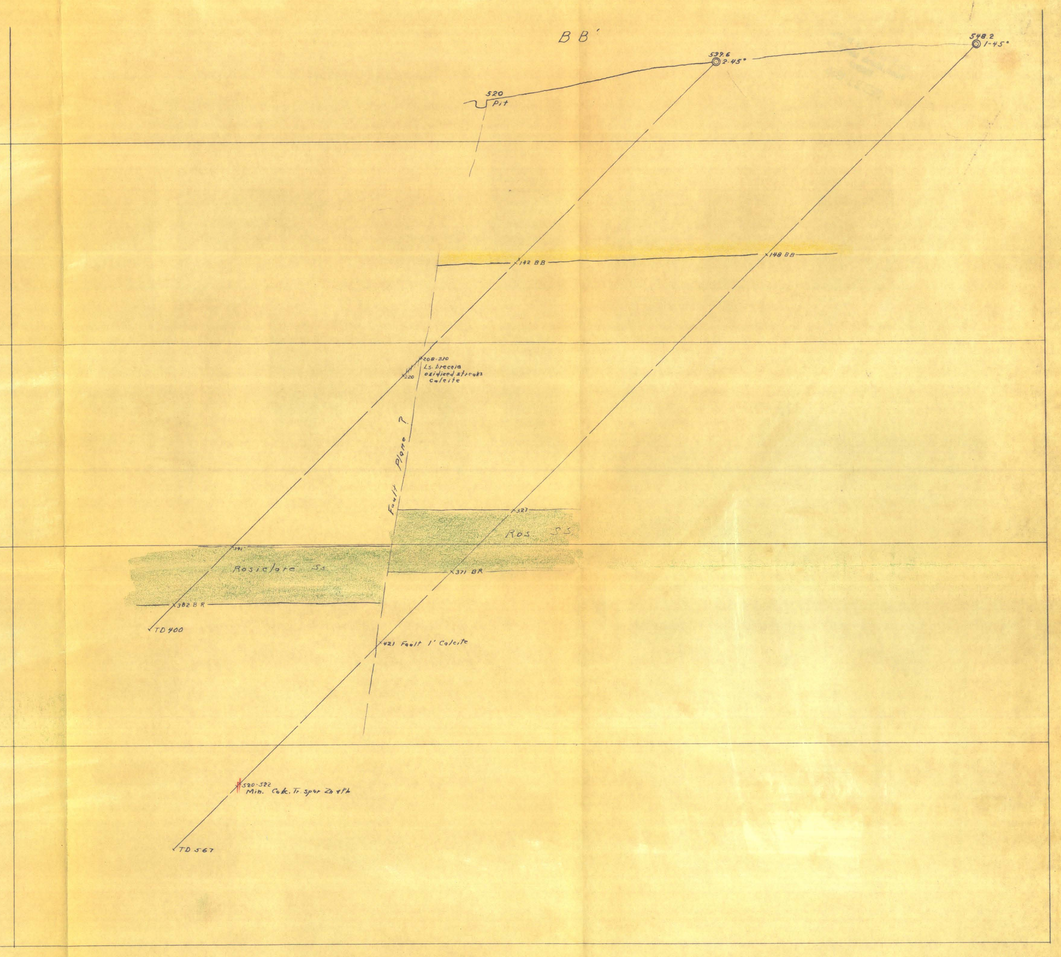
SECTION — BB' & CC'

Scale: 1" = 30'

Bethel SS -

Rosiclare SS -





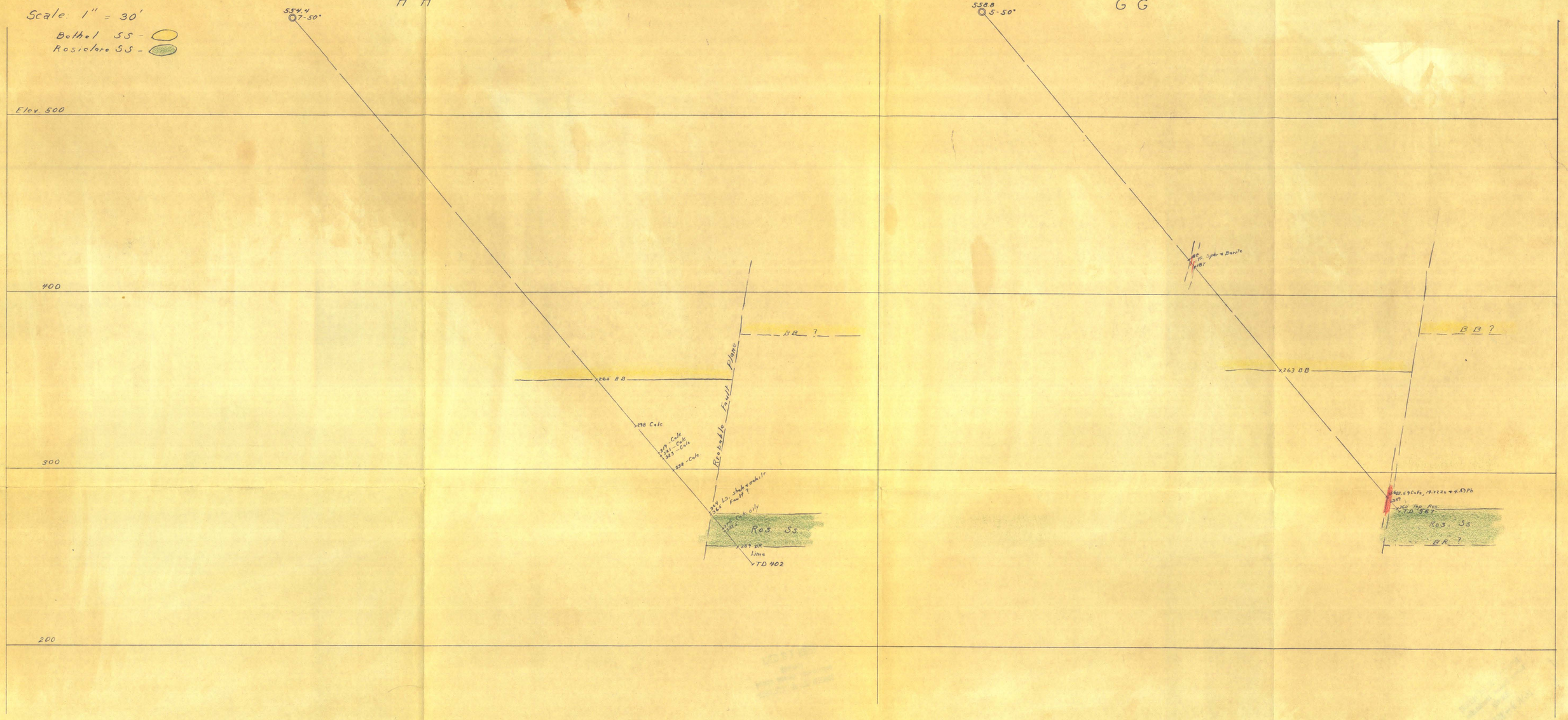
E. M STOTLAR 40 Ac

SECTION – GG' & HH'

Scale: 1" = 30'

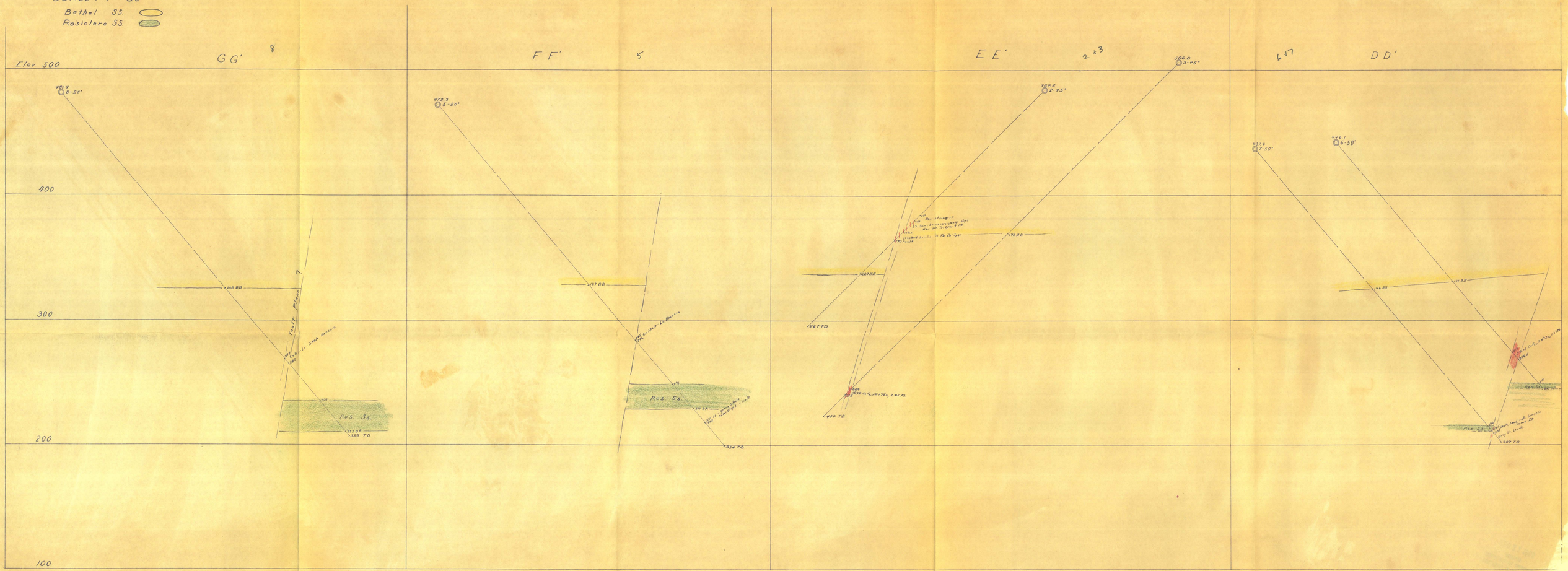
Bethel SS –

Rosiclare SS –



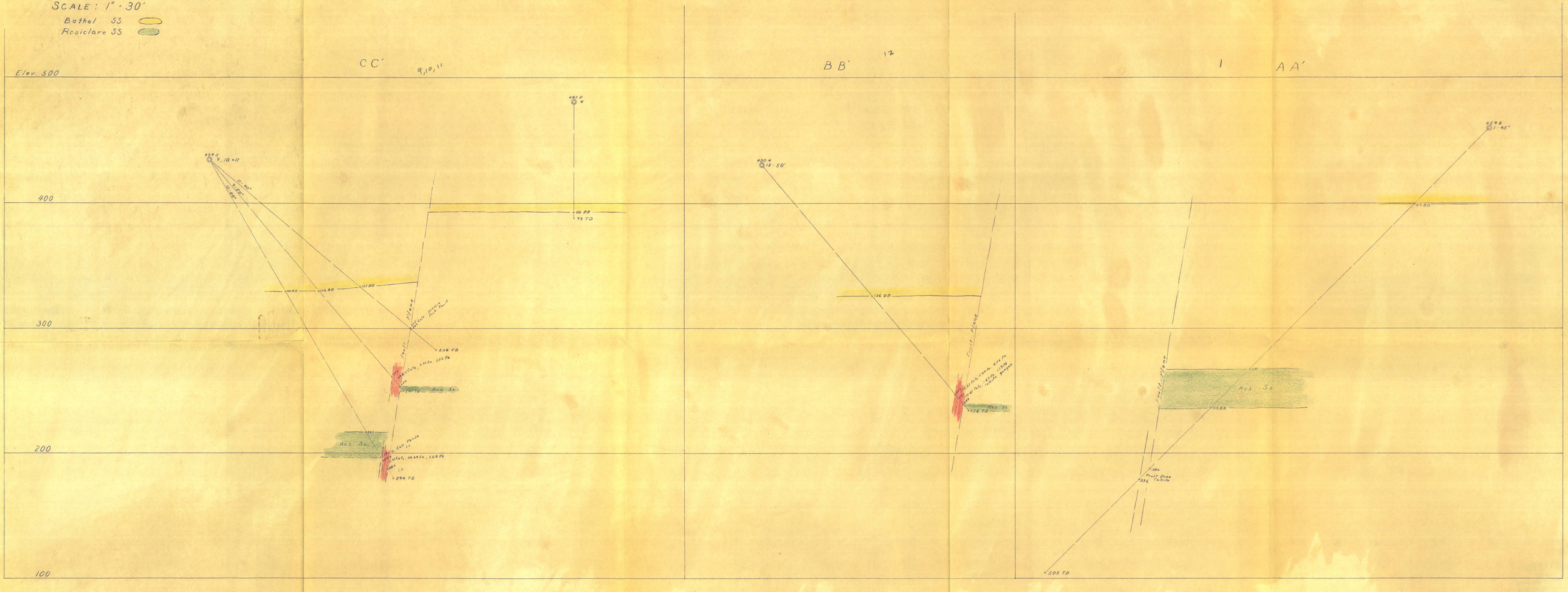
R. F. REID 40 AC.
SECTION – DD', EE', FF' & GG'
SCALE: 1" = 30'

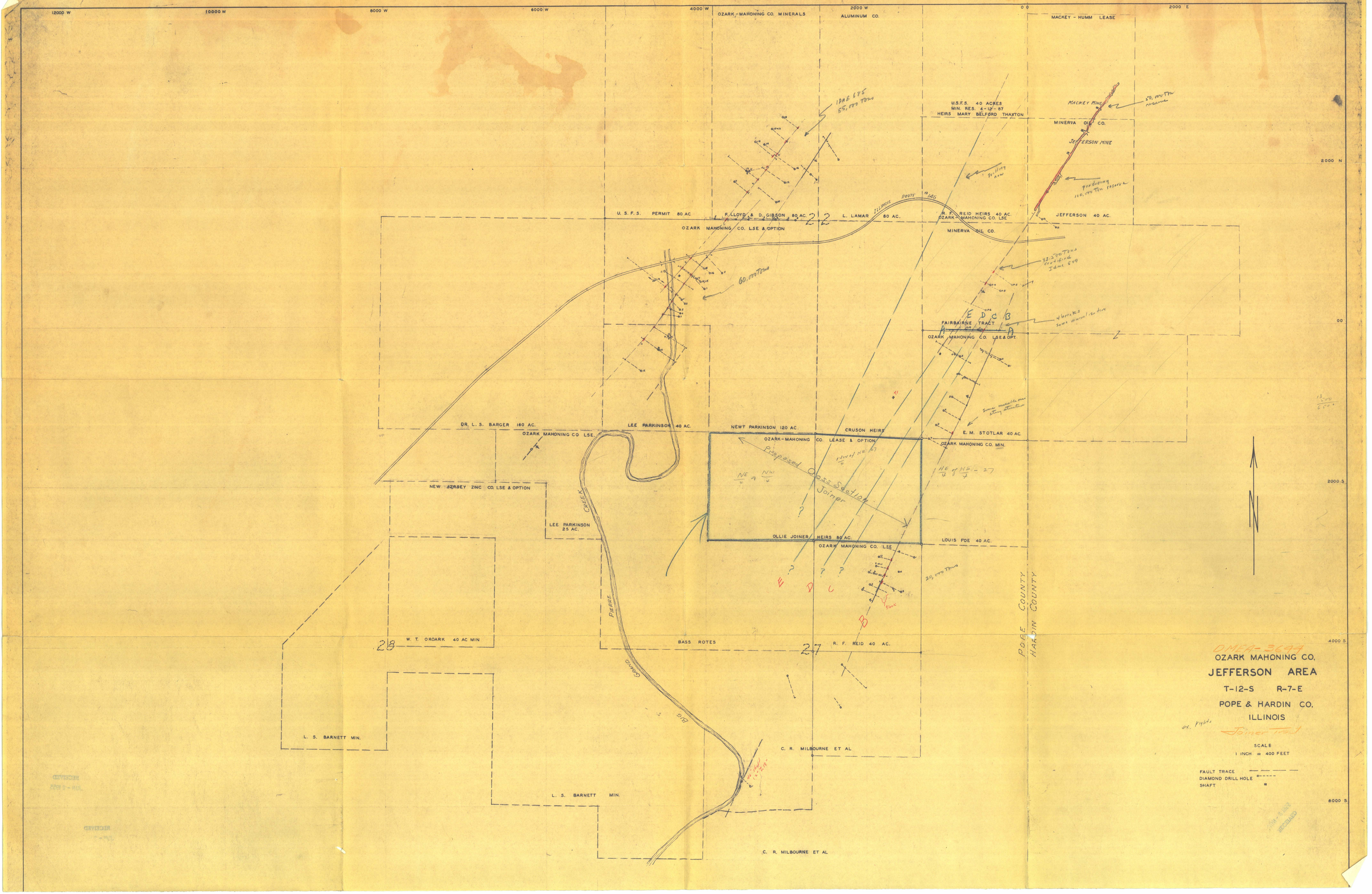
Bethel SS.
Rosiclare SS.



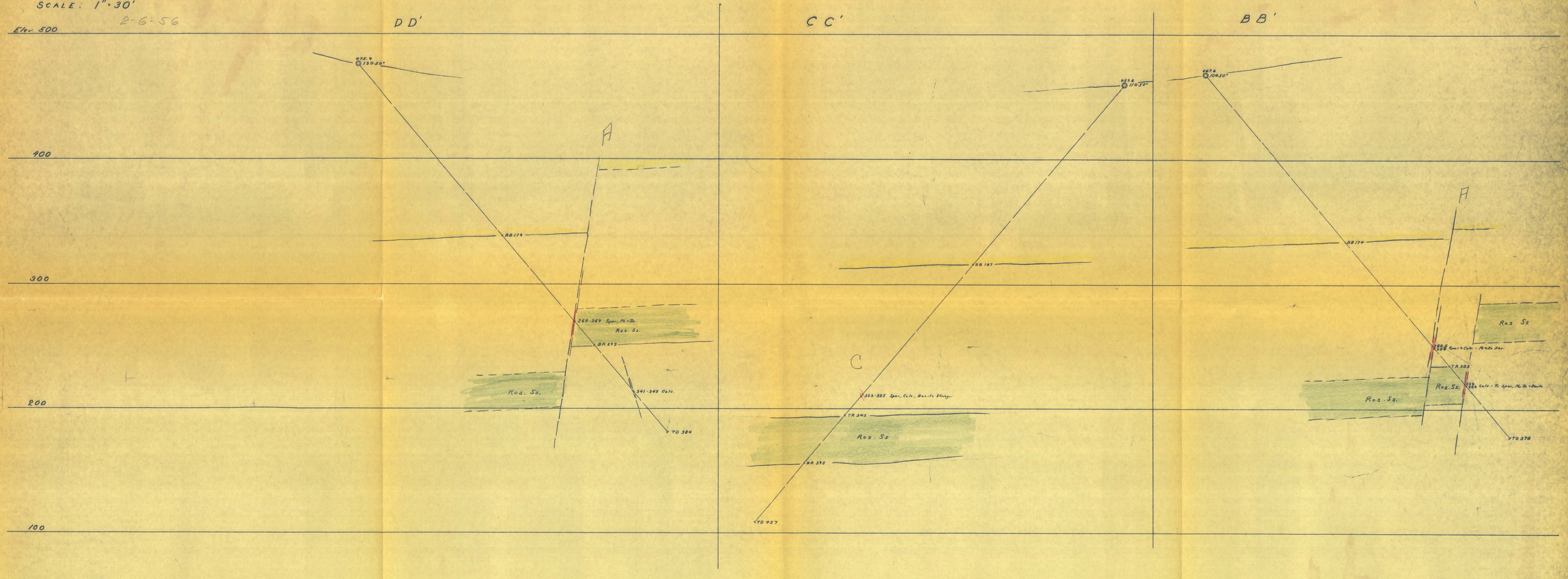
R. F. REID' 40 AC.
SECTION – AA', BB' & CC'
SCALE: 1" = 30'

Bethel SS
Rosiclare SS

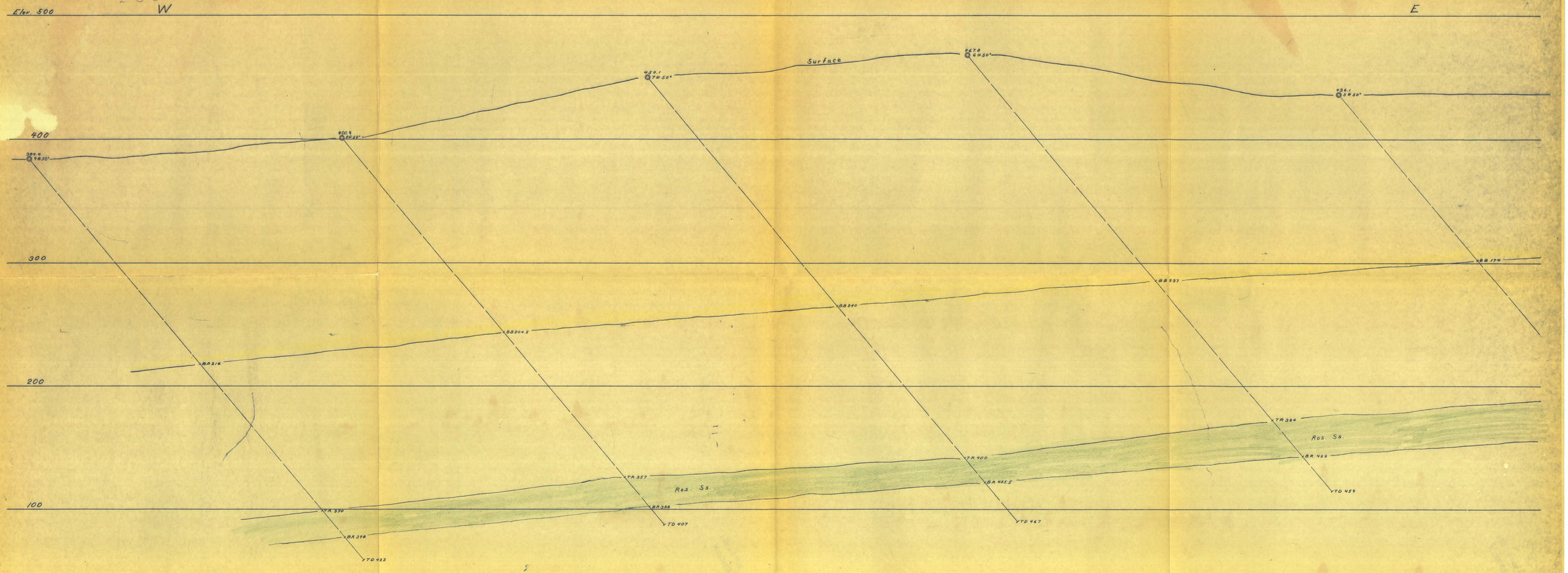
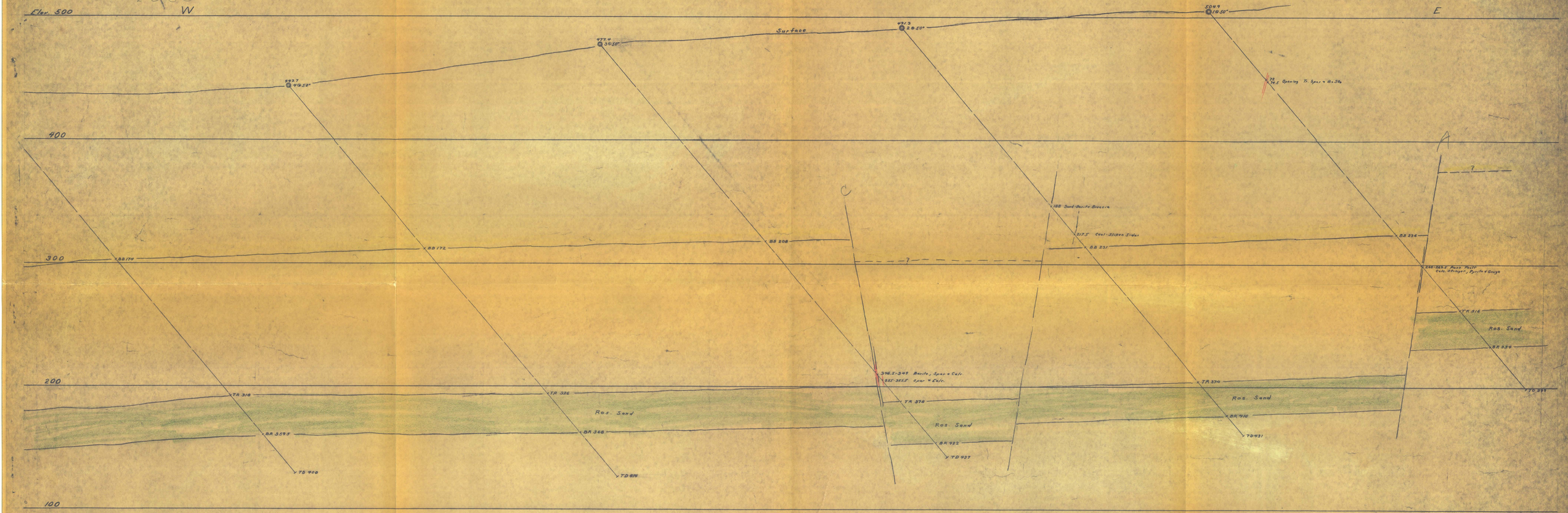



12000 W
10000 W
8000 W
6000 W
4000 W
2000 W
0 0
2000 E
2000 N
00
2000 S
4000 S
6000 S
OZARK-MAHONING CO. MINERALS
ALUMINUM CO.
MACKEY - HUMM LEASE
U.S.F.S. 40 ACRES
MIN. RES. 4-12-67
HEIRS MARY BELFORD THAXTON
MINERVA OIL CO.
MACKEY MINE
JEFFERSON MINE
U. S. F. S. PERMIT 80 AC
F. LLOYD & D. GIBSON 80 AC.
L. LAMAR 80 AC.
R. F. REID HEIRS 40 AC.
OZARK-MAHONING CO. LSE
JEFFERSON 40 AC.
OZARK MAHONING CO. LSE & OPTION
MINERVA OIL CO.
ILLINOIS ROUTE 14
FAIRBAIRNE TRACT
OZARK MAHONING CO. LSE & OPT.
DR. L. S. BARGER 160 AC.
OZARK MAHONING CO LSE.
LEE PARKINSON 40 AC.
NEWT PARKINSON 120 AC.
CRUSON HEIRS
OZARK-MAHONING CO. LEASE & OPTION
E. M. STOTLAR 40 AC.
OZARK MAHONING CO. MIN.
Proposed Cross Section
Joiner
NEW JERSEY ZINC CO. LSE & OPTION
LEE PARKINSON 25 AC.
OLLIE JOINER HEIRS 80 AC.
OZARK MAHONING CO. LSE
LOUIS FOE 40 AC.
PIERRE CREEK
W. T. ORDARK 40 AC MIN
BASS ROTES
R. F. REID 40 AC.
POPE COUNTY
HARDIN COUNTY
L. S. BARNETT MIN.
C. R. MILBOURNE ET AL
L. S. BARNETT MIN.
C. R. MILBOURNE ET AL
OMFA-3644
OZARK MAHONING CO.
JEFFERSON AREA
T-12-S R-7-E
POPE & HARDIN CO.
ILLINOIS
Joiner Trail
SCALE
1 INCH = 400 FEET
FAULT TRACE
DIAMOND DRILL HOLE
SHAFT

B.E. JOINER 80 ACRE TRACT
SECTION BB', CC', DD'
SCALE: 1" = 30'
2-6-56



B.E. JOINER 80 ACRE TRACT
SECTION - AA' Sheet #2
SCALE: 1" = 30'
2-6-56



B.E. JOINER 80 ACRE TRACT
SECTION - AA' Sheet #1
SCALE: 1" = 30'
2-6-56