DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE Idm-E NO._____ DMEA NO. 4929

Application
- [x] Denied
- [ ] Withdrawn

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

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

Folder No. 1: 50%

Left Side

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

Right Side

- [ ] Project summary (final)
- [ ] Work Comoleted analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

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

Right Side

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

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

Folders No._____: Settlement Sheets

Folders No._____: Drill Logs

Folders No._____: Royalty material

17963

MINING LEASE AMENDMENT

THIS AMENDED AGREEMENT, made and entered into this 17th day of February, A.D. 1958, by and between Elmer Trevenen and Kennis O. Littleton of Maybell, Colorado, hereinafter known as the OWNERS, Parties of the First Part and Jerry Phillips of Box 702, Palisade, Colorado, hereinafter known as the OPERATOR, Party of the Second Part, WITNESSETH:

That for and in consideration of the covenants hereinafter set forth to be performed by the OPERATOR the said OWNERS hereby give and grant to the said OPERATOR the exclusive mining lease of all of those certain Lode Mining Claims owned by said OWNERS in Township 7 N. R. 93 W. 6th P.M. in Moffat County, Colorado, being North of Maybell, Colorado, for the mining and removal of minerals therefrom, upon the terms as hereinafter set forth:

The names and place of recordation in the office of the County Clerk and Recorder, in Moffat County, Colorado, of said Claim is as follows, to-wit:

> The T. & L. Lode Mining Claims Nos. 1 to 14 inclusive and recorded in Book 239 at Pages 329 to 336 inclusive, also the T. & L. Lode Mining Claim No. 15, recorded in Book 236, Page 442.

Paragraph Four of the original Lease of November 15, 1956 is hereby amended to read as follows: OPERATOR is to move on said claims within 120 days from the date of this Agreement and start exploration work and the testing of said claims for the mineral content therein and such work is to consist of drilling or other mining exploration work, the cost of which is to be sufficient to at least meet the required amount of annual assessment work for each of said claims for the year ending June 30th, 1958. The Owners agree that this Lease is to remain in force for five (5) years from date, providing that the Operator performs at least the minimum required annual assessment work on said claims. And after said work has been finished each year, the Operator will make, execute and deliver to the Owners an affidavit showing the amount expended in exploratory work on said claims, for the purpose of recording and holding same. It is further understood that said exploratory work is to be conducted in a manner to develop said claims to the mutual advantage of all parties concerned.

Other sections of the Lease of November 15th, 1956 remain as written.

This agreement shall be binding upon and inure to the benefit of the respective parties hereto, their heirs, Administrators, Executors, personal representatives and assigns.

IN WITNESS WHEREOF, the said Parties have hereunto set their hands and seals, in duplicate, the day and date first above written.

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RECEIVED MAR 13 1958

DATE	INITIALS	CODE

Elmer Trevenen

Kennis O. Littleton
Parties of the First Part, the Owners

Jerry Phillips
Party of the Second Part, the Operator.

STATE OF COLORADO)
) ss
County of MOFFAT)

The foregoing instrument was acknowledged before me this 17 day of February, A.D. 1958, by Elmer Trevenen, Kennis O. Littleton and Jerry Phillips.

Witness my hand and Official seal.

My Commission Expires:

2/5/59

Ralph L. White
Notary Public

MINING LEA E AMENDMEN

THIS AMENDED AGREEMENT, made and entered into this 7th day of ~~February,~~ March A.D. 1958, by and between Elmer Trevenen, individually, and Elmer Trevenen, as Attorney-in-fact for K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robinson, George Polk, L. E. Gent, Dean Gent and A. D. Meineke all of Maybell, Colorado, hereinafter known as the OWNERS, Parties of the First Part and Jerry Phillips of Palisade, Colorado, Box 702, hereinafter known as the OPERATORS, Party of the Second Part, WITNESSETH:

That for and in consideration of the covenants hereinafter set forth to be performed by the OPERATOR the said OWNERS hereby give and grant to the said OPERATOR the exclusive mining lease of all of these certain Lode Mining Claims owned by said OWNERS in Township 7 N. R. 95 W. 6th P.M. in Moffat County, Colorado, being North of Maybell, Colorado, for the mining and removal of minerals therefrom, upon the terms as hereinafter set forth:

The names and place of recordation in the office of the County Clerk and Recorder, in Moffat County, Colorado, of said Claim is as follows, to-wit:

> The Orr Lode Mining Claims numbers 32 and 33 and recorded in Book No. 209 on Pages 318 to 321 and the George Polk No. 1 Claim and the Dean Gent No. 1 Claim, recorded in Book 190, Pages 424 and 425.

Paragraph Four of the original Lease of January 21st, 1958 is hereby amended to read as follows: OPERATOR is to move on said claims within 120 days from the date of this Agreement and start exploration work and the testing of said claims for the mineral content therein and such work is to consist of drilling or other mining exploration work, the cost of which is to be sufficient to at least meet the required amount of annual assessment work for each of said claims for the year ending June 30th, 1958. The Owners agree that this Lease is to remain in force for five (5) years from date, providing that the Operator performs at least the minimum required annual assessment work on said claims. And after said work has been finished each year, the Operator will make, execute and deliver to the Owners an affidavit showing the amount expended in exploratory work on said claims, for the purpose of recording and holding same. It is further understood that said exploratory work is to be conducted in a manner to develop said claims to the mutual advantage of all parties concerned.

Other sections of the Lease of January 21st, 1958 remain as written.

This agreement shall be binding upon and inure to the benefit of the respective parties hereto, their heirs, Administrators, Executors, personal representatives and assigns.

IN WITNESS WHEREOF, the said Parties have hereunto set their hands and seals, in duplicate, the day and date first above written.

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RECEIVED MAR 18 1958
DATE | INITIALS

Elmer Trevenen
Individually and as Attorney-in-fact for: K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Meineke. Parties OF THE FIRST PART, THE OWNERS

Jerry Phillips
PARTY OF THE SECOND PART, OPERATOR

STATE OF COLORADO)
) SS
COUNTY OF MOFFAT)

The foregoing instrument was acknowledged before me this 7 day of ~~February~~ March A.D. 1958, by Elmer Trevenen, individually and as Attorney-in-fact for K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Meineke, all of Maybell, Colorado, hereinafter known as the OWNERS, Parties of the First Part and Jerry Phillips of Palisade, Colorado, Box 702, hereinafter known as the OPERATOR, Party of the Second Part.

WITNESS my hand and Official Seal.

My Commission Expires:

Feb. 5 1959

Notary Public

MINING LEASE AMENDMENT

THIS AMENDED AGREEMENT, made and entered into this 7th day of ~~February~~ March, A.D. 1958, by and between Elmer Trevenen, individually, and Elmer Trevenen, as Attorney-in-fact for K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robinson, George Polk, L. E. Gent, Dean Gent and A. D. Meineke all of Maybell, Colorado, hereinafter known as the OWNERS, Parties of the First Part and Jerry Phillips of Palisade, Colorado, Box 702, hereinafter known as the OPERATORS, Party of the Second Part, WITNESSETH:

That for and in consideration of the covenants hereinafter set forth to be performed by the OPERATOR the said OWNERS hereby give and grant to the said OPERATOR the exclusive mining lease of all of those certain Lode Mining Claims owned by said OWNERS in Township 7 N. R. 95 W. 6th P.M. in Moffat County, Colorado, being North of Maybell, Colorado, for the mining and removal of minerals therefrom, upon the terms as hereinafter set forth:

The names and place of recordation in the office of the County Clerk and Recorder, in Moffat County, Colorado, of said Claim is as follows, to-wit:

> The Orr Lode Mining Claims Numbered 1 to 31 inclusive and recorded in Book No. 208 on Pages numbered 284 to 345 inclusive and Orr Mining Claims numbered 25 and 27 amended and recorded in Book No. 209 on Pages 314 to 317 inclusive.

Paragraph Four of the original Lease of July 5th, 1956 is hereby amended to read as follows: OPERATOR is to move on said claims within 120 days from the date of this agreement and start exploration work and the testing of said claims for the mineral content therein and such work is to consist of drilling or other mining exploration work, the cost of which is to be sufficient to at least meet the required amount of annual assessment work for each of said claims for the year ending June 30th, 1958. The Owners agree that this Lease is to remain in force for five (5) years from date, providing that the Operator performs at least the minimum required annual assessment work on said claims. And after said work has been finished each year, the Operator will make, execute and deliver to the Owners an affidavit showing the amount expended in exploratory work on said claims, for the purpose of recording and holding same. It is further understood that said exploratory work is to be conducted in a manner to develop said claims to the mutual advantage of all parties concerned.

Other sections of the Lease of July 5th, 1956 remain as written.

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This agreement shall be binding upon and inure to the benefit of the respective parties hereto, their heirs, Administrators, Executors, personal representatives and assigns.

DATE		

IN WITNESS WHEREOF, the said Parties have hereunto set their hands and seals, in duplicate, the day and date first above written.

Elmer Trevenen
Individually and as Attorney-in-fact for:
K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Meineke. Parties OF THE FIRST PART, THE OWNERS.

Jerry Phillips
PARTY OF THE SECOND PART, OPERATOR

STATE OF COLORADO)
) SS
COUNTY OF MOFFAT)

The foregoing instrument was acknowledged before me this 7 day of ~~February~~ March A.D. 1958, by Elmer Trevenen, individually and as Attorney-in-fact for K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Meineke, all of Maybell, Colorado, hereinafter known as the OWNERS, Parties of the First Part and Jerry Phillips of Palisade, Colorado, Box 702, hereinafter known as the OPERATOR, Party of the Second Part.

Witness my hand and Official Seal.

My Commission Expires:
Feb. 5 1959

Ralph L. White
Notary Public

Filed for record the 3 day of Mar A. D. 19 58 at 11 o'clock A M. BOOK 255 PAGE 433
No. 137929
Mary J. Haughey RECORDER.

Know all Men by these Presents, That I, Virginia Trevenen
Maybell, Colo

have made, constituted and appointed, and By These Presents do make, constitute and appoint
Elmer Trevenen

true and lawful Attorney for me and in my name, place and stead
to deal with in all manner whatsoever and to transact all buainessof every kind and nature, including selling, leasing and negotiating for the production of minerals from any and all miningclaims of every kind and discription which I may own, or in whichI may have and interest locat ed in Sections 17, 18, 19, 20, 21 in Township 7 North, Range 95 West 6th P.M.,

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giving and granting unto him said Attorney full power and authority to do and perform all and every act and thing whatsoever, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that ~~he~~ he said Attorney or his substitute shall lawfully do or cause to be done by virtue hereof.

In Witness Whereof, We have hereunto set our hand~~s~~ and seal~~s~~ the 2 day of 2 one thousand nine hundred and

Signed, Sealed and Delivered in Presence of

Virginia Trevenen (Seal)

(Seal)

STATE OF COLORADO,
County of Moffat } ss.

I, Ralph L. White
a Notary Public in and for said County, in the State aforesaid, do hereby certify that
Virginia Trevenen
who is personally known to me to be the person whose name is subscribed to the foregoing Power of Attorney appeared before me this day in person, and acknowledged that she signed, sealed and delivered the said instrument of writing as her free and voluntary act, for the uses and purposes therein set forth.

My commission expires February 5th A. D. 1959

Given under my hand and official seal, this 3rd day of March A. D. 19 58

RALPH L. WHITE NOTARY PUBLIC MOFFAT COUNTY COLORADO

Ralph L. White
Notary Public

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DATE	INITIALS	CODE

BOOK 255 PAGE 434

RECEPTION NO. 137930 FILED FOR RECORD March 3 1958 AT 11:02 A.M.

POWER OF ATTORNEY—Empire Publishing Co., Craig, Colo.

Know all Men by these Presents, That... George Kitchens and ... A. C. ... Meineke

have made, constituted and appointed, and **By These Presents** do make, constitute and appoint ... Elmer Trevenen

true and lawful Attorney for ... them ... and in ... their ... name s., place and stead to handle only the business pertaining to the Kitchens Lode No. 1 Mining claim and the Meineke Lode No. 1 Mining claim which were originally recorded in Book No. 192 at Pages 301 and 302 thereof of the Moffat County Clerk and Recorder's records but said claims now are each one of a groupe of mining claims knwn and designated as Orr Lode Mining Claims Numbers 1 to 31 inclusive.

To do anything necessary under the terms of a certain Mining lease dated July 5th, 1956, between Elmer Trevenen, individually and as attorney in fact for various Locators covering said Orr Lode Mining Claims from 1 to 31 inclusive and one Jerry Phillips of Palisade, Colorado, as the Lessee covering said Orr Lode Mining claims Nos. 1 to 31.

Should negotiations terminate with the said Jerry Phillips this power of Attorney shall thereupon cease by recording a notice thereof in the Clerk of Moffat County and Recorder's Office.

giving and granting unto ... him ... said Attorney full power and authority to do and perform all and every act and thing whatsoever, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as ... they ... might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that ... the ... said Attorney or ... his ... substitute shall lawfully do or cause to be done by virtue hereof.

In Witness Whereof, ... we ... have hereunto set ... our ... hand s and seal s the ... 24th ... day of ... February ..., one thousand nine hundred and ... Fifty-Eight ...

Signed, Sealed and Delivered in Presence of

George Kitchens (SEAL)

A. C. Meineke (SEAL)

STATE OF COLORADO,
County of ... Moffat ... } ss.

I, ... Ralph L. White ..., a Notary Public in and for said County, in the State aforesaid, do hereby certify that ... George Kitchens and A. C. Meineke

who ... personally known to me to be the person s whose name s ... are ... subscribed to the foregoing Power of Attorney, appeared before me this day in person, and acknowledged that ... they ... signed, sealed and delivered the said instrument of writing as ... their ... free and voluntary act, for the uses and purposes therein set forth.

My commission expires ... Feb. 5th ..., A. D. 1959

Given under my hand and official seal, this ... 24th ... day of ... February ..., A. D. 1958

Ralph L. White

Notary Public

RALPH L. WHITE NOTARY PUBLIC

BOOK 255 PAGE 436

Filed for record the 3 436 day of Mar A. D. 1958, at 11:06 o'clock A M.

No. 137932 Mary G. Haughey RECORDER.

Know all Men by these Presents, That I, Fred Leatherby of 702 Superior Avenue, Rockford, Illinois have made, constituted and appointed, and By These Presents do make, constitute and appoint Elmer Trevenen true and lawful Attorney for I and in my name, place and stead to deal with in all manner whatsoever and to transact all business of every kind and nature, including selling, leasing and negotiating for the production of minerals from any and all mining claims of every kind and description which I may own, or in which I may have and interest located in Sections 17, 18, 19, 20 and 21 in Township 7 North, Range 95 West 6th P.M., ~~giving and granting unto my said Attorney full power and authority to do and~~

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giving and granting unto my said Attorney full power and authority to do and perform all and every act and thing whatsoever, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as I might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that My said Attorney or his substitute shall lawfully do or cause to be done by virtue hereof.

In Witness Whereof, I have hereunto set my hand and seal the 28th day of February one thousand nine hundred and fifty-eight

Signed, Sealed and Delivered in Presence of
John A. Barry
Elaine P. Lewis

Fred Leatherby (Seal)
Nina Leatherby (Seal)

STATE OF ~~COLORADO~~, Illinois
County of Winnebago } ss.

I, Nina Leatherby a Notary Public in and for said County, in the State aforesaid, do hereby certify that Fred Leatherby who is personally known to me to be the person whose name is subscribed to the foregoing Power of Attorney appeared before me this day in person, and acknowledged that he signed, sealed and delivered the said instrument of writing as his free and voluntary act, for the uses and purposes therein set forth.

My commission expires November 30 A. D. 1958

Given under my hand and official seal, this 28th day of February A. D. 1958

Nina Leatherby
507 Harlem Rd. Rockford Ill

422-P. POWER OF ATTORNEY—Out West Printing and Stationery Co., Colorado Springs, Colo.

Filed for record the 3 day of Mar A. D. 19 58 at 11:04 o'clock A. M. BOOK 255 PAGE 435

No. 137935 Mary D. Haughey RECORDER.

Know all Men by these Presents, That I, Jim Duncan of Denver, Colo.

have made, constituted and appointed, and By These Presents do make, constitute and appoint Elmer Travenen

true and lawful Attorney for me and in my name, place and stead

Tondeal with in all manner whatever and to transact all business ~~all-busin~~ of every kind and nature, including selling, leasing and negotiating for the production of minerals from any and all mining claims of every kind and description which I may own, or in which I may have and interest located in Sections 17, 18, 19, 20, and 21 in Township 7 North, Range 95 West 6th P.M.,

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giving and granting unto him said Attorney full power and authority to do and perform all and every act and thing whatsoever, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as they might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that he said Attorney or his substitute shall lawfully do or cause to be done by virtue hereof.

In Witness Whereof, I have hereunto set my hand and seal the 27th day of February one thousand nine hundred and Fifty-Eight

Signed, Sealed and Delivered in Presence of

Jim S. Duncan (Seal)

(Seal)

STATE OF COLORADO,
County of Adams } ss.

I, Donald P. Jones a Notary Public in and for said County, in the State aforesaid, do hereby certify that Jim S. Duncan who personally known to me to be the person whose name is subscribed to the foregoing Power of Attorney appeared before me this day in person, and acknowledged that he signed, sealed and delivered the said instrument of writing as his free and voluntary act, for the uses and purposes therein set forth.

My commission expires April 2 A. D. 1960

Given under my hand and official seal, this 27th day of February A. D. 1958

Donald P. Jones
Notary Public

DONALD P. JONES NOTARY PUBLIC ADAMS COUNTY, COLORADO

422-P. POWER OF ATTORNEY—Out West Printing and Stationery Co., Colorado Springs, Colo.

RECEPTION NO. 137933 FILED March 3 1958 - 11:08 A.M.

BOOK 255 PAGE 437

POWER OF ATTORNEY.—Empire Publishing Co., Craig, Colo.

Know all Men by these Presents, That Jim Solace

have made, constituted and appointed, and **By These Presents** do make, constitute and appoint

Inez Converse

true and lawful Attorney for him and in his name, place and stead

to handle transactions concerning the Jim Solace No. 1 Lode Claim and Jim Solace No. 2 Lode Claim in Moffat County, Colorado, as more fully described by Location Certificates filed in the office of the County Clerk and Recorder of Moffat County, Colorado, on July 8, 1954

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BY DMEA
RECEIVED MAR 13 1958
DATE

giving and granting unto her said Attorney full power and authority to do and perform all and every act and thing whatsoever, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as she might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that her said Attorney or her substitute shall lawfully do or cause to be done by virtue hereof.

In Witness Whereof, I have hereunto set my hand and seal the 8th day of July, one thousand nine hundred and Fifty-Four.

Signed, Sealed and Delivered in Presence of

Jim Solace (SEAL)

(SEAL)

STATE OF COLORADO,
County of Moffat } ss.

I, Ralph L. White, a Notary Public in and for said County, in the State aforesaid, do hereby certify that Jim Solace who is personally known to me to be the person whose name is subscribed to the foregoing Power of Attorney, appeared before me this day in person, and acknowledged that he signed, sealed and delivered the said instrument of writing as his free and voluntary act, for the uses and purposes therein set forth.

My commission expires February 5th, A. D. 1955

Given under my hand and official seal, this 8th day of July, A. D. 1954

Ralph L. White
Notary Public.

RALPH L. WHITE NOTARY PUBLIC

BOOK 255 PAGE 438

RECEPTION NO. 137934 FILED FOR RECORD Mar 3 1958 AT 11:10 A.

POWER OF ATTORNEY.—Empire Publishing Co., Craig, Colo.

Know all Men by these Presents, That M. A. Solace

have made, constituted and appointed, and **By These Presents** do make, constitute and appoint Omer revenen true and lawful Attorney for him and in his name, place and stead to handle transactions concerning the M. A. Solace No. 1 Lode Claim and M. A. Solace No. 2 Lode Claim in Moffat County, Colorado, as are more fully described by Location Certificates filed in the office of the County Clerk and Recorder of Moffat County, Colorado, on July 10, 1954

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DATE	INITIALS	CODE

giving and granting unto him said Attorney full power and authority to do and perform all and every act and thing whatsoever, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that he the said Attorney or his substitute shall lawfully do or cause to be done by virtue hereof.

In Witness Whereof, I have hereunto set my hand and seal the 10 th day of July, one thousand nine hundred and Fifty-four

Signed, Sealed and Delivered in Presence of

M. A. Solace (SEAL)

(SEAL)

STATE OF COLORADO,
County of Moffat } ss.

I, Ralph L. White, a Notary Public in and for said County, in the State aforesaid, do hereby certify that M. A. Solace who is personally known to me to be the person whose name is subscribed to the foregoing Power of Attorney, appeared before me this day in person, and acknowledged that he signed, sealed and delivered the said instrument of writing as his free and voluntary act, for the uses and purposes therein set forth.

My commission expires February 5th, A. D. 1955

Given under my hand and official seal, this 10th day of July, A. D. 1954

Ralph L. White
Notary Public

RALPH L. WHITE NOTARY PUBLIC

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RECEIVED MAR 13 1958

DATE	INITIALS	CODE

RECORDING NO. 137935 FILED FOR RECORD March 3 1958 BOOK 255 PAGE 439 AT 11:12AM

POWER OF ATTORNEY.—Empire Publishing Co., Craig, Colo.

Know all Men by these Presents, That Sam Steele

have made, constituted and appointed, and **By These Presents** do make, constitute and appoint Elmer Trevenen true and lawful Attorney for him and in his name, place and stead to sell, lease, trade, mortgage or encumber; or to deal with as he shall see fit, the following described property in Moffat County, Colorado:

The Sam Steele No. 1 Lode Claim, described as follows: Beginning at corner No. 1 which is West 200 feet from the W¼ corner of Section 21 in Township 7 North of Range 95 West of the 6th P. M.; thence East 600 feet to corner No. 2; thence North 1500 feet to corner No. 3; thence west 600 feet to corner No. 4; thence south 1500 feet to the point of beginning.

and

The Don Steele No. 1 Lode Claim described as follows: Beginning at corner No. 1 which is west 200 feet from the W¼ corner of Section 21 in Township 7 North of Range 95 West of the 6th P. M.; thence North 1500 feet to corner No. 2; thence West 600 feet to corner No. 3; thence South 1500 feet to corner No. 4; thence east 600 feet to the point of beginning

giving and granting unto the said Attorney full power and authority to do and perform all and every act and thing whatsoever, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that the said Attorney or his substitute shall lawfully do or cause to be done by virtue hereof.

In Witness Whereof, I have hereunto set his hand and seal the 28th day of July, one thousand nine hundred and fifty-four.

Signed, Sealed and Delivered in Presence of

Sam Steele (SEAL)

(SEAL)

STATE OF COLORADO,
County of Moffat } ss.

I, E. D. Davis, a Notary Public in and for said County, in the State aforesaid, do hereby certify that Sam Steele who is personally known to me to be the person whose name is subscribed to the foregoing Power of Attorney, appeared before me this day in person, and acknowledged that he signed, sealed and delivered the said instrument of writing as his free and voluntary act, for the uses and purposes therein set forth.

My commission expires June 5, A. D. 1956

Given under my hand and official seal, this 28th day of July, A. D. 1954.

Commission Expires June 5, 1956. E. D. Davis
Notary Public

MOFFAT COUNTY

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RECEIVED MAR 13 1958
DATE | INITIALS | CODE

RECEPTION NO. 137936 FILED FOR RECORD March 3 1958 11:14 A.M.

POWER OF ATTORNEY—Empire Publishing Co., Craig, Colo.

Know all Men by these Presents. That R. N. Robinson

have made, constituted and appointed, and **By These Presents** do make, constitute and appoint Elmer Trovenon

true and lawful Attorney for him and in his name, place and stead to handle transactions concerning the R. N. Robinson No. 1 Lode Claim and the R. N. Robinson No. 2 Lode Claim in Moffat County, Colorado, as are more fully described by Location Certificates filed in the office of the County Clerk and recorder of Moffat County, Colorado, on July 19th, 1954.

giving and granting unto him said Attorney full power and authority to do and perform all and every act and thing whatsoever, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that he the said Attorney or his substitute shall lawfully do or cause to be done by virtue hereof.

In Witness Whereof, I have hereunto set my hand and seal the 19th day of July, one thousand ~~nine~~ hundred and Fifty-Four

Signed, Sealed and Delivered in Presence of

R. N. Robinson (SEAL)

(SEAL)

STATE OF COLORADO,
County of Moffat } ss.

I, Ralph L. White, a Notary Public in and for said County, in the State aforesaid, do hereby certify that R. N. Robinson

who is personally known to me to be the person whose name is subscribed to the foregoing Power of Attorney, appeared before me this day in person, and acknowledged that he signed, sealed and delivered the said instrument of writing as his free and voluntary act, for the uses and purposes therein set forth.

My commission expires February 5th, A. D. 1955

Given under my hand and official seal, this 19th day of July A. D. 1954

Ralph L. White
Notary Public

NOTARY PUBLIC

RECEIVED MAR 15 1958

DATE	NOTE	CODE

RECEPTION NO. 137937 FILED FOR RECORD March 3 1958 AT 11:16 A.M. BOOK 255 PAGE 441

POWER OF ATTORNEY—Empire Publishing Co., Craig, Colo.

Know all Men by these Presents, That K. O. Littleton and Rosie Littleton

have made, constituted and appointed, and **By These Presents** do make, constitute and appoint Elmer Trevenen

true and lawful Attorney for them and in their name s, place and stead to handle transactions concerning the K. O. Littleton No 1 Lode Claim and the K. O. Littleton No 2 Lode Claim and the K. O. Littleton No. 3 Lode Claim and the Rosie Littleton No 1 Lode Claim in Moffat County, Colorado, as are more fully described by Location Certificates filed in the office of the County Clerk and Recorder of Moffat County, Colorado, on June 29, 1954

giving and granting unto him said Attorney full power and authority to do and perform all and every act and thing whatsoever, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that he the said Attorney or his substitute shall lawfully do or cause to be done by virtue hereof.

In Witness Whereof, We have hereunto set our hand s and seal s the 4th day of Aug., one thousand nine hundred and Fifty-four.

Signed, Sealed and Delivered in Presence of

K. O. Littleton (SEAL)

Rosie Littleton (SEAL)

STATE OF COLORADO,
County of Moffat } ss.

I, Ralph L. White, a Notary Public in and for said County, in the State aforesaid, do hereby certify that K. O. Littleton and Rosie Littleton who are personally known to me to be the persons whose names are subscribed to the foregoing Power of Attorney, appeared before me this day in person, and acknowledged that they signed, sealed and delivered the said instrument of writing as free and voluntary act, for the uses and purposes therein set forth.

My commission expires February 5th, A. D. 1955

Given under my hand and official seal, this 4th day of August, A. D. 1954

Ralph L. White

Notary Public

RALPH L. WHITE NOTARY PUBLIC MOFFAT COLO.

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DATE	INITIALS	CODE

BOOK 255 PAGE 442
RECEPTION NO. 137938 FILED FOR RECORD Mar 3 1958 at 11 AM

POWER OF ATTORNEY—Empire Publishing Co., Craig, Colo.

Know all Men by these Presents, That Geo. B. Polk, Edna Polk, L. Elton Gent and Dean Gent of Craig, Colorado

have made, constituted and appointed, and **By These Presents** do make, constitute and appoint Elmer Trevenen of Maybell, Colorado

true and lawful Attorney for them and in their name s., place and stead To do and perform anything and everything necessary in handling, managing, developing, leasing or selling our interests in the Orr Lode Mining Claim No.11; the Orr Lode Mining Claim No. 15; the Orr Lode Mining Claim No. 16 and the Orr Lode Mining Claim No. 21, situated in Twp. 7 N. R. 95 West 6th P. M. in Moffat County, Colorado,

giving and granting unto him said Attorney full power and authority to do and perform all and every act and thing whatsoever, requisite and necessary to be done in and about the premises, as fully to all intents and purposes as they might or could do if personally present, with full power of substitution and revocation, hereby ratifying and confirming all that he the said Attorney or his substitute shall lawfully do or cause to be done by virtue hereof.

In Witness Whereof, We have hereunto set our hand s and seal s the 6th day of July, one thousand nine hundred and Fifty-Five

Signed, Sealed and Delivered in Presence of

L. Elton Gent (Seal)
Geo. B. Polk (SEAL)
Edna Polk (SEAL)
Dean Gent (Seal)

STATE OF COLORADO,
County of Moffat } ss.

I, Ralph L. White, a Notary Public in and for said County, in the State aforesaid, do hereby certify that Geo. B. Polk, Edna Polk, L. Elton Gent and Dean Gent

who are personally known to me to be the person s whose name s are subscribed to the foregoing Power of Attorney, appeared before me this day in person, and acknowledged that they signed, sealed and delivered the said instrument of writing as their free and voluntary act, for the uses and purposes therein set forth.

My commission expires February 5th, A. D. 1959

Given under my hand ~~and official~~ seal, this 6th day of July, A. D. 1955.

Ralph L. White
Notary Public

LARSEN · INDUSTRIES

URANIUM · OIL AND GAS
MINERAL REFINING
URANIUM REFINING

~~BOX XXXXXX~~ SALT LAKE CITY, UTAH
~~OFFICE XXXXXXXXXXXXXXXX~~ 259 - 7th Ave.
PHONE - ~~XXXXXXX~~ Empire ~~3-7724~~ 4-7761

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DATE	INITIALS	CODE
Littleton		

January 25, 1958

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
Washington, D. C.

Dear Mr. Mittendorf:

Herewith 4 copies of DMEA Application on the Trevenen-Littleton Group of Claims, Maybell, Moffat County, Colorado.

The Application contains executed Form M-103, Revised October 1957 with 2 typewritten sheets outlining answers to the various headings under the form; also enclosed is the mining engineer's report on the property by Neal M. Muir of Grand Junction, Colorado. Copies of the 3 leases and assignment of interest, experience records and bids from 3 drilling contractors are attached to the Application.

I believe the essentials have been covered, however, will be pleased to answer any questions that may arise.

Thanking you for consideration in this matter.

Very truly yours,

Lewis H. Larsen

Lewis H. Larsen

LHL:vc

Form MF–103
Revised Oct. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42–R1035.3
Approval expires June 30, 1958

APPLICATION FOR AID IN AN EXPLORATION PROJECT

PURSUANT TO DMEA ORDER I, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

NAME OF APPLICANT (Full legal name and mailing address as it should appear on contract if one is executed)

Lewis H. Larsen and Jerry Phillips
259 - 7th Ave., Salt Lake City, Utah

RECEIVED 29 1958 DMEA

APPLICANT NOT TO USE THIS BLOCK

Docket Number: DMEA- 4929
Date Received: 1/29/58
Government Participation %:
Region: III
Division Code: 700

BUSINESS ORGANIZATION (Check one)

- Individual [ ]
- Corporation [ ]
- Partnership [ ]
- Other (Specify) [X] Joint Venture

State in which firm is organized: Utah

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title
Lewis H. Larsen	259 - 7th Ave., Salt Lake City, Utah	Co-Associate
Jerry Phillips	Palisade, Colorado	Co-Associate

Mineral(s) for which you wish to explore: Uranium - Vanadium

Estimated Cost of Project: $ 80,676.30

LOCATION OF PROPERTY

Name	County	State
Trevenen-Littleton Group of Claims	Moffat	Colorado

GENERAL INSTRUCTIONS

Before filling out this application, please read DMEA Order–I, Revised, "Government Aid in Defense Exploration Projects." To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit four copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 1, existing mine workings and geology in item 2, and the proposed exploration project in item 4. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 2(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals,* of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest DMEA Field Office.*

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.

January 25, 1958
Dated

Lewis H Larsen
BY *(Signature)*

Co-Associate
Title

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense. U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

1. *Applicant's Property Rights:*

(a) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all land adjacent to the proposed project area which you own or control. Describe any part of the project land or workings which should not be subject to Government lien for royalty payments. If the land consists of unpatented claims, state the book and page number for each recorded location notice, including amended locations, and the place where recorded (courthouse, recorder's office, county, and state).

(b) State all the names by which you know the property.

(c) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise. If you are not the owner, submit with this application one exact copy of the lease, contract, or other document (with address of owner) under which you control the property.

(d) Describe all liens, mortgages, or other encumbrances on the property.

2. *Physical Description:*

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the lands, including existing mine workings. Describe all production facilities.

(b) State your interest, if any, in operations stated in 2*(a)*.

(c) State, as far as you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves on the property giving quantities and grades and sampling methods used, supporting your statement with copies of assay certificates and assay maps if available.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) State your reasons for expecting to find ore, and if you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you may have, indicating on each whether you require its return to you.

3. *Accessibility of Project:*

(a) To aid DMEA representatives who may be required to examine the property, state the name and address of the person who will meet the DMEA representative; give directions for reaching the property; and describe accessibility of the property including the mine workings.

(b) Name the shipping and supply points and places where employees reside and state the distances between them and the property.

4. *The Exploration Project:*

(a) Describe fully the proposed exploration project giving individual footages and sizes of openings *for each item of work*. Use narrative, maps, plans, and longitudinal and cross sections as necessary. Show the location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show also the relation of the proposed work to any existing mine workings and to *property boundaries* or to the closest identifiable corner.

(b) If an access road to the project must be built, show the location on the property map and state the length, type, and construction methods proposed.

(c) In the event that an exploration contract with DMEA is executed, how soon will the work start and how many months will be required to complete it? State your anticipated average daily or monthly rate of progress for each type of work.

5. *Experience:*

State your operating experience and background with relation to your ability to carry out this exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of Costs:*

Furnish detailed estimates of the costs *for each item of the work proposed in 4(a)* under the headings listed below with a total for each heading and the estimated total cost of the project. Costs for any work to be performed by an independent contractor should be shown separately under category *(a)* below. Costs for any work that is not to be performed by an independent contractor should be given in detail under categories *(b)* through *(g)*.

(a) Independent contracts. State the cost of any proposed independent contract for the performance of all or any part of the work, expressed in units of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. *(Note* – If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. For necessary supervision, engineering and geological services, and labor, include an itemized schedule of numbers, classes, rates of wages, salaries or fees, and periods of employment. State whether these technicians and employees are available.

(c) Operating materials and supplies. List items of material and supplies with their cost. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of operating equipment to be used giving specifications and indicating how each item is to be acquired – i.e., rented, purchased, or provided by the applicant. If it is rented or purchased, state the estimated rental or purchase price. If it is to be furnished by the applicant, give its present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of necessary *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant, which will be used on the exploration project.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration project stating specifications and cost including labor, materials and supervision.

(g) Miscellaneous. For the operating equipment listed in 6*(d)*, describe the type and estimate the cost of repairs and maintenance expected during project operations. Do not repeat initial repairs listed in 6*(e)*. Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories.

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)* State whether you are prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation stated in Sec. 7 of DMEA Order–I, Revised.

(b) Explain to what extent you propose to furnish your share of the costs by providing money, by use of equipment owned by you, or otherwise.

* * * * *

INT.-DUP. SEC., WASH., D.C. 25960

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APPLICATION FOR DMEA PROJECT

ON TREVENEN-LITTLETON GROUP OF CLAIMS

FOR

LEWIS H. LARSEN AND JERRY PHILLIPS

259 - 7th Avenue
Salt Lake City, Utah.

January 25, 1958

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APPLICATION FOR DMEA PROJECT ON TREVENEN-LITTLETON GROUP OF CLAIMS FOR LEWIS H. LARSEN AND JERRY PHILLIPS

January 25, 1958

1. Applicant's Property Rights

(a) and (b) See Pages 1, 2 and 3 of Engineers Report on the Trevenen-Littleton Group of Claims by Neal M. Muir, Mining Engineer, which is attached and made a part of this application.

(c) See Pages 1 and 3 of Muir's Report, Copies of Leases, Trevenen-Littleton, et al to Jerry Phillips; dated July 5, 1956, November 15, 1956 and January 21, 1958 follow Page D-2 of DMEA application. Copy of Assignment, Jerry Phillips to Lewis H. Larsen follow the lease copies. Note: Owners will sign a "consent to Lien and Subordination Agreement" if this application is approved.

(d) No liens or incumbrances on the property.

2. Physical Description

(a) (b) (c) (d) (e) (f)
See Pages 4,5,6,7, 8, 9, 10, Table 1, Pages a-1 to a-4, Table 11, Pages b-1 and b-2 of Muir's Report; also Index Map No. 1, and Maps 2 to 5 in pocket of report.

(g) Copy of Muir's Report is attached to each of the 4 copies of the DMEA application.

3. Accessibility of Project

(a) Elmer Trevenen, Maybell, Colorado will conduct any examing engineer to the property. (a) and (b) See Pages 3 and 4 of Muir's Report.

4. The Exploration Project

(a) and (b) See Pages 4, 9, 11 and Maps No. 2, 3, and 4 of Muir's Report.
(c) The drilling can be started within 30 to 60 days and Stage 1 drilling could be completed within 3 months time from date of starting; all 3 Stages of drilling could be completed within 6 months of the starting date. At least 375 feet average daily drilling can be accomplished. See Pages 11, 12, and 13 of Muir's Report.

5. Experience

Experience records of Lewis H. Larsen, Jerry Phillips and Neal M. Muir follow the assignment of leases.

6. Estimate of Costs

(a) (b) (c) (d) (g) (h) See Pages 11, 12 and 13 of Muir's Report.

(a) Drilling bids by Sprague and Henwood, Minerals Engineering Company and Martin and Buell, Inc., follow experience records.

(e) and (f) Not applicable.

7. Applicants Share of Costs

(a) The total cost of the Prospective Project, being $80,676.30, the Applicants share is $40,338.15. See Page 13 of Muir's Report. The Applicants are prepared to furnish their share of the costs.

(b) They propose to pay their share of costs by providing money.

Respectfully submitted,

Lewis H. Larsen

Lewis H. Larsen
Co-Associate

259 - 7th Avenue
Salt Lake City, Utah

January 25, 1958

EXPERIENCE RECORD OF LEWIS H. LARSEN

Mr. Lewis H. Larsen of 259 - 7th Avenue, Salt Lake City, Utah has been associated in the oil, mining and metallurgical industries since 1949, in financing, management and operation.

At present he holds the following positions and connections:

Vice Pres. & Director (5 years)
Minerals Refining Company, Murray, Utah (This is a metallurgical research laboratory)

Vice Pres. & Director of Alpha Mining & Milling Co. North Salt Lake City, Utah. (A columbium and tantalum refinery)

Director - Resource Ventures Corporation, Salt Lake City, Utah.

Pres. & Director, M. & L. Rare Earths Co. Murray, Utah.

Substantial Stockholder - Ogden Mining & Smelting Co. Milford, Utah.

These enterprises give him interests in properties in Utah, Colorado, Arizona, New Mexico, Texas and Alberta, Canada.

Financial Reference: John Pike, Vice Pres. First Security Bank, Fourth & Main Branch, Salt Lake City, Utah.

EXPERIENCE RECORD OF JERRY PHILLIPS

Jerry Phillips of Palisade, Colorado, has worked in mining and oil field work for a number of years in various positions from miner to foreman and owner of properties. During 1938 and 1939, he was mill and mine foreman for the Gateway Alloy Company, Gateway, Colorado. He worked in placer mining in the Breckinridge, Colorado area for several years. For over five years he was engaged in oil field work in southern Utah.

From 1948 to 1958, he has been in uranium leasing in the Uravan, Naturita, Slick Rock Districts, Colorado and the Yellow Cat District, Utah. In the Yellow Cat District, he has operated on the Cactus, Rat , Pittsburg No. 5 and the Blackstone Mines; presently is heavily interested in Blackstone Mine and Utah oil leases.

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SUMMARY NOTES

EXPERIENCE RECORD OF NEAL M. MUIR

He attended the University of Minnesota for one term and was graduated from the Michigan College of Mines. His work in mining has covered various positions as miner, millman, assayer, engineer, foreman, superintendent, manager and examining engineer in Western and Central United States, Mexico, and Alaska.

His experience in mining has involved work in gold, silver, copper, lead, zinc, iron, coal, tungsten, quicksilver, flourspar, and uranium, on examination, exploration and operation.

He has had a number of years' experience in the Midcontinent states in natural gasoline manufacture and sales work. He represented the Southwestern Engineering Company, the Williamson Ball Mill Company, the General Refractories Company, and the Griscon Russell Company. His contacts were with the power plants, oil refineries, natural gasoline plants, lead and zinc smelters, steel plants, glass plants, cement plants, foundries, and various small industries.

Among the more important positions that he has held are the following:

Ass't. Supt. Railroad Tunnel Construction, A. Guthrie & Co., Lavina, Montana.

Supt. Old Telegraph Mine, Utah Leasing Co., Bingham Canyon, Utah.

Mining Engineer & Ass't Supt. San Antonio Copper Co., San Antonio de la Huerta, Sonora, Mexico.

Supt. Genesee Valley Copper Co., Genesee Valley, Plumas County, California.

Supt. Starlight Mine, Schloss & Hanford Interests, Jarbidge, Nevada.

Vice Pres., & Mgr. Virginia California Gasoline Co., Muskogee, Oklahoma.

Supt. & Sec., Orpha May Mining Co., Cripple Creek, Colorado.

Supt., Mgr. & Sec., Nevada Minnesota Mining Co., Gold Point, Nevada.

Inventory & Production Analyst with the War Production Board, Salt Lake City, Utah.

Mining Engineer with the U.S. Bureau of Mines in Alaska, Utah, Illinois, Kentucky, Missouri, Oklahoma and Kansas.

Assistant to the Mine Geologist, Utah Copper Division, Kennecott Copper Corporation, Bingham Canyon, Utah.

His examination work has been for various interests, among them the Bennett Office of Minneapolis, D. C. Shepherd of St. Paul, the United States Smelting, Refining and Mining Company, the Hearst Estate, the Monolith Portland Cement Company, and the U. S. Bureau of Mines.

His experience has given him contacts with various phases of mining and other industries and with the public in general. He has also raised finances for several operations and is familiar with handling business.

During the fall of 1953 and the year of 1954, he was engaged by the U. S. Bureau of Mines on examination of black sands for radioactive black opaque minerals in the Baker, Oregon, region, and in Montana on examination of aluminum shales.

Since January, 1955, he has been making his headquarters in Grand Junction, Colorado and doing examination and report work for various interests on uranium properties. He has made examinations in Colorado, Utah, Arizona, New Mexico, Nevada and Wyoming.

MANUFACTURERS OF
DIAMOND DRILLS
DRILLING EQUIPMENT
DIAMOND BITS

BRANCH OFFICES
NEW YORK · PITTSBURGH
PHILADELPHIA
GRAND JUNCTION, COLO

EXECUTIVE OFFICES & PLANT
221 W OLIVE STREET
SCRANTON, PA

SPRAGUE & HENWOOD, INC.

SINCE 1883

CONTRACTORS FOR
DIAMOND DRILLING
SHOT DRILLING · SOIL SAMPLING · PRESSURE GROUTING
WATER WELLS & CHURN DRILLING

PLEASE REPLY TO
P O BOX 645
GRAND JUNCTION, COLO.
TELEPHONE Chapel 2-0440

December 18, 1957

OFFICE FILE COPY
DMEA
RECEIVED JAN 29 1958

DATE	INITIALS	CODE

Mr. Lewis H. Larsen
759 7th Avenue
Salt Lake City, Utah

Attn: Mr. Neil Muir, Consulting Engineer
La Court Hotel, Grand Junction, Colo.

Dear Sir:

In accordance with our conversation with Mr. Neil Muir, we herewith submit our proposal for drilling on your property in Sections 17 - 18 - 19 - 20 and 21, R 95 W - T 7 N, Moffat County, Colorado. It is our understanding this proposal is in conjunction with a D.M.E.A. loan application. This proposal is based on a minimum of 10,000 feet of drilling.

PROPOSAL:

Item 1. Non-Core Drilling - minimum size 4½" hole
From surface to 200 foot depth . . . . . $0.80/ft.

Item 2. Standby time for radiometric logging or
any other delay time requested by customer $12.00/hr.

THIS PROPOSAL IS BASED ON THE FOLLOWING PROVISIONS:

1. All drill hole locations and access roads to drill sites will be constructed and maintained to accommodate Sprague & Henwood, Inc. truck mounted drills and water trucks. Any bulldozer work required for preparation of sites and roads will be furnished by the customer at no cost to Sprague & Henwood, Inc.

2. Dust samples will be made available at drill hole locations; however, collection, storage and preservation of dust samples will be the responsibility of the customer.

3. Upon completion of a hole to the specified bottom depth and prior to moving the drill rig, if the drill and crew are required to stand by while the customer logs said hole with subsurface logging equipment, if the drill and crew are required to perform additional work in the hole for use of subsurface logging equipment, Sprague & Henwood, Inc. will be paid at the rate per hour specified under Item 2 of proposed schedule.

Mr. Lewis H. Larsen
Attn: Mr. Neil Muir

December 18, 1957

4. All holes will be located in the field by the customer.

5. All rights of entry to and exit from the property will be obtained by the customer.

6. Sprague & Henwood, Inc. will furnish one rotary type drill, two man crew and all accessory equipment commensurate with good drilling operations, including Ducon type dust sampler.

7. Payments are to be made monthly based on completed holes, within 15 days after date of invoice. Should payments not be made within the specified period then Sprague & Henwood, Inc. reserves the right to terminate operations. Credit arrangements satisfactory to Sprague & Henwood, Inc. must be made prior to commencement of work.

We thank you for the opportunity of submitting our proposal and trust you will feel free to call on us at any time if additional information is required.

Very truly yours

SPRAGUE & HENWOOD, INC.

Vincent D. Nourse

Vincent D. Nourse
Ass't to Western Mgr.

Orig. plus 4

VDN: nr
cc: Scranton
Carver
File

Supplementary Memorandum: Tentatively, for depths of drilling from 200 feet to 500 feet, the price would be $1.00 per foot.

V.D.N.

Martin & Buell, Inc.
Drilling Contractors
P. O. Box 925—Phone CHapel 2-5982
GRAND JUNCTION, COLORADO

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DMEA
RECEIVED JAN 29 1958

DATE	INITIALS	CODE

December 23, 1957

Mr. Lewis H. Larsen
259 7th Ave.
Salt Lake City, Utah

Attn: Mr Neal Muir

Gentlemen:

In accordance with our conversation of last week we are happy to furnish you with the following estimate for drilling of your property in Sections 17, 18, 19, 20, and 21, Twp. 7 N. Range 95 W., Moffat County, Colorado.

For drilling non-core exploration holes of at least 3 7/8" diameter, by rotary air or water methods, in the Brown's Park section of the aforementioned area, we quote;

100' to 200' depth range $1.20 per foot

It is our understanding that all access roads and drill locations will be furnished at no cost to contractor and that an estimated 20,000' of drilling is planned.

Thank you for the opportunity that you have given us to serve you thusly.

Very truly yours,

Martin & Buell, Inc.
H.D. Buell
H.D. Buell

MINERALS ENGINEERING COMPANY

P. O. BOX 1951
GRAND JUNCTION, COLORADO

December 14, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 29 1958

DATE	INITIALS	CODE

Mr. Louis H. Larson
749 - Seventh Avenue
Salt Lake City, Utah

Dear Sir:

In reply to a telephone conversation with Mr. Neal Muir, please accept the following quotations as our preliminary bid for your D.M.E.A. loan proposal for 10,000-foot minimum drilling to maximum depth per hole of 200 feet of air rotary drilling on your Ore, T, and L claims at Maybelle, Moffat County, Colorado:

Depth	Price per Foot
0-100 feet	$ 1.45
100-200 feet	1.95

Standby time will be at the rate of $15 per hour.

It is my understanding that you will construct drill sites and any necessary access roads.

Very truly yours,

MINERALS ENGINEERING COMPANY

Edson Foster

Edson Foster
Drill Superintendent

EF/k

NEAL M. MUIR
MINING ENGINEER

LA COURT HOTEL
GRAND JUNCTION
COLORADO

REPORT ON

TREVENEN - LITTLETON GROUP OF CLAIMS

MAYBELL DISTRICT,
MOFFAT COUNTY, COLORADO

BY

NEAL M. MUIR
Mining Engineer

LaCourt Hotel
Grand Junction, Colorado

December 27, 1957

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INTRODUCTION

This report made at the request of Mr. Lewis H. Larsen of Salt Lake City, Utah, is based upon an examination of the Trevenen - Littleton Group of Claims, Moffat County, Colorado during November 1956. The recorded locations of the various claims were checked with an available map and a revised map was compiled. The general area was examined, available drill hole logs analysed and the general and local geological data studied, with the view of outlining additional exploration and development work on the property.

LOCATION - ACCESSIBILITY

The Trevenen-Littleton Group of Claims is located northerly 2 miles from Yampa River, at Maybell, Moffat County, Colorado. Maybell is 31 miles west of Craig on paved U.S. Highway 40. Craig is 276 miles westerly of Denver and 239 easterly of Salt Lake City via U.S. Highway 40. Maybell is 137 miles northeasterly from Grand Junction via U.S. Highway's 6-24, State 789, County 57 and U.S. 40.

The County Road No. 19 north of Maybell is gravelled and crosses the western part of the property, continuing northerly toward Baggs, Wyoming. There are numerous dirt roads through the property, and nearly all parts of the claims are accessible by jeep.

The claims are located in sections 17, 18, 19, 20 and 21, Township 7 North, Range 95 West, 6th Principal Meridan in Colorado.

Mining supplies can be obtained at Craig and Grand Junction, Colorado. Drilling equipment and heavy mining equipment can be obtained in Grand Junction, and the markets of Denver and Salt Lake City are readily available.

Drilling contractors are available in Grand Junction. Proposals on the prospective drilling from 3 drilling contractors are attached.

Living quarters for workmen are available at current prices at Maybell and Craig, Colorado.

TITLE - OWNERSHIP - CLAIMS

The property consists of 48 unpatented mining claims held under the General Mining Laws of the United States by Messrs. Elmer Trevenen, Kennis O. Littleton and Associates of Maybell, Moffat County, Colorado. The property has been leased to Jerry Phillips of Palisade, Mesa County, Colorado as per the attached copies of leases reading from Trevenen and Littleton to Jerry Phillips, dated July 5, 1956 and November 15, 1956.

One-half undivided interest in said leases has been assigned to Lewis H. Larsen, 259-7th Avenue, Salt Lake City, Utah; as per attached copy of said assignment.

LIST OF CLAIMS AND RECORDING DATA

CLAIM NAME	DATE OF RECORD	BOOK	PAGE
T & L No. 1	November 15, 1956	235	323
" " 2	" " "	"	324
" " 3	" " "	"	325
" " 4	" " "	"	326
" " 5	" " "	"	327
" " 6	" " "	"	328
" " 7	" " "	"	329
" " 8	" " "	"	330
" " 9	" " "	"	331
" " 10	" " "	"	332
" " 11	" " "	"	333
" " 12	" " "	"	334
" " 13	" " "	"	335
" " 14	" " "	"	336
" " 15	December 5, 1956	236	442
Orr No. 1	July 1, 1955	208	284 - 285
" " 2	" " "	"	286 - 287
" " 3	" " "	"	288 - 289
" " 4	" " "	"	290 - 291
" " 5	" " "	"	292 - 293
" " 6	" " "	"	294 - 295
" " 7	" " "	"	296n - 297
" " 8	" " "	"	298 - 299
" " 9 *	" " "	"	300 - 301
" " 10 *	" " "	"	302 - 303
" " 11	" " "	"	304 - 305
" " 12	" " "	"	306 - 307
" " 13	" " "	"	308 - 309
" " 14	" " "	"	310 - 311
" " 15	" " "	"	312 - 313
" " 16	" " "	"	314 - 315
" " 17	" " "	"	316 - 317
" " 18	" " "	"	318 - 319
" " 19	" " "	"	320 - 321
" " 20	" " "	"	322 - 323
" " 21	" " "	"	324 - 325
" " 22	" " "	"	326 - 327
" " 23	" " "	"	328 - 329
" " 24	" " "	"	330 - 331
" " 25	" " "	"	332 - 333
" " 26	" " "	"	334 - 335
" " 27	" " "	"	336 - 337
" " 28	" " "	"	338 - 339

CLAIM NAME	DATE OF RECORD	BOOK	PAGE
Orr No. 29	July 1, 1955	208	340 - 341
" " 30	" " "	"	342 - 343
" " 31	" " "	"	344 - 345
" " 26 - Amended	July 12, 1955	209	314 - 315
" " 27 - Amended	July 12, 1955	209	316 - 317
" " 32	July 12, 1955	209	318 - 319
" " 33	July 12, 1955	209	320 - 321
George Polk No. 1	July 7, 1955	190	424
Dean Gent No. 1	July 7, 1955	190	425

* Note: Claims Orr No. 9 and 10 were dropped as they were on State ground.

Note A: The four claims Orr Nos. 32 and 33, George Polk No. 1 and Dean Gent No. 1 will be covered by a supplementary lease to be dated in January 1958.

The several leases to Jerry Phillips carry a 10% royalty to the owners.

HISTORY

The district is young; prospecting started in 1954, especially after Johnson's anomaly map was published in 1954. Development started in the Poison Basin district in southern Wyoming and the Trace Elements Associates started their development in the Maybell-Lay District in 1954.

Trevenen and Littleton did their first work in 1954. The summer of 1955, Bronson Williams and Associates did a limited amount of drilling on the Orr claims of the Trevenen-Littleton Group. The records of this drilling were not available. Jerry Phillips obtained his leases on this group in 1956, and drilled 13 holes during the summer of 1956. November 1957, Phillips assigned verbally 1/2 interest in his lease to Lewis H. Larson.

PHYSICAL CHARACTERICS

The topography is of the slightly rolling hill type rising gradually from the Yampa River. Elevations on the property range from 6,000 to 6,300 feet above sea level. The elevation at the Yampa River below the property is approximately 5,880 feet; at Maybell it is 5,903 feet. There are 3 main draws through the property. A fair road follows up the easterly draw. Spring Creek lies 3/4 miles easterly of the east claims. An old wagon road runs northwesterly, diagonally across the claims and connects on the west with County Highway No. 19. Several "Mine" roads divert from this road to the drill holes. Most parts of the claims could be reached with a limited amount of road work. A few of the proposed drill locations might have to be offset on account of topography.

The climate and vegetation is similiar to most of the western slope conditions. The valley of the Yampa River is a farming and cattle country, with good grazing in the hills. Timber is very limited. Mining and construction timber would have to be shipped in.

The average annual precipitation over several years is about 12 inches. As an example of a somewhat sub-normal year, 1956 had an annual precipitation of 9.67 inches; distributed as follows:

Jan.	2.10 inches	May	0.51 inches	Sept.	0.07 inches
Feb.	1.14 inches	June	0.10 inches	Oct.	0.72 inches
March	0.34 inches	July	1.16 inches	Nov.	0.79 inches
April	0.84 inches	Aug.	0.63 inches	Dec.	0.27 inches

Average yearly temperatures for 1956:

Maximum	59.0° F
Minimum	25.1° F
Mean	41.8° F

Maximum temperature 85.7° F July
Minimum temperature 14° F January

Thus it is evident that no extreme temperatures or excessive falls of rain or snow are to be anticipated. The water supply is good and in plentiful supply.

MARKETS

The nearest uranium mill to the Trevenen-Littleton property is that of the Trace Elements Corporation. A good dirt road extends westerly-easterly through the Trevenen-Littleton claims and then through the Trace Elements property to their mill. Distance to the mill is approximately 4 miles.

The mill is in two sections, a concentrating or "upgrading" unit and the main leaching unit. The concentrating unit will treat 1,000 tons daily of low grade ore, concentrating ratio, five to one. This 200 tons of concentrated ore, with 100 tons of richer ore direct

from the mine or partially from custom mines, will go to the 300 ton leaching unit.

Custom ore with a value of 0.22% U_3O_8 or higher which is amenable to the treatment will be acceptable at this mill. A tentative proposal for purchase of 1,000 tons monthly has been made. The purchase of ore would be based on "Circular No. 5 (Revised) of the Atomic Energy Commission.

Value of 0.22% U_3O_8 ore would be $15.70 per ton plus the development credit by the A.E.C. of $2.20 per ton and about $0.25 per ton haulage allowance. Total value at the mill is $18.15 per ton. The Trevenen-Littleton Claims would qualify for the $35,000.00 bonus allowance.

The sampling plant at the Trace Elements Mill is good.

Another market could probably be arranged with the Vitro Uranium Corporation Plant at Salt Lake City. The Vitro Plant has treated some 14,000 tons from Maybell-Lay area, and the ore is amenable to their process.

BIBLIOGRAPHY

"Environment of Some Wyoming Uranium Deposits"

By Eugene W. Grutt, Jr.
U.S. Atomic Energy Commission
For 1957 Nuclear Engineering and Science Conference
Paper No. 57-NESC-69

"Airborne Radioactive Survey of Part of Moffat County, Colorado, south of 40°15'"

By R. W. Johnson
Geophysical Investigations, Map GP 126
U.S.G.S. - July, 1954.

"Geologic Investigations of Radioactive Deposits" U.S.G.S.

"Maybell-Lay Area, Moffat County, Colorado"

By J. M. Bergin

(a) "Semi-Annual Progress Report for June 1 to November 30, 1955" Tei 590
Pages 176 - 179
(b) "Semi-Annual Progress Report for December 1, 1955 to May 31, 1956" Tei 620
Pages 190 - 199
(c) "Semi-Annual Progress Report for June 1, 1956 to November 30, 1956" Tei 640
Pages 138 - 143

"White River Quadrangle, Colorado" U.S.G.S. - 1910

"Resurvey Township 7 North, Range 94 West of the 6th Principal Meridan in Colorado" (4-675a)

Surveyor Generals' Office,
Denver, Colorado, August 1907

"Guidebook to the Geology of Northwest Colorado" 1955

Intermountain Association of Petroleum Geologists
Rocky Mountain Association of Geologists.

(a) "A review of the Browns Park Formation"
By Byrl D. Carey, Jr. Pages 47-50

(b) "Correlation of Cenozoic Deposits of Northwestern Colorado" Pages 50-53
And tectonic chart
By M. Dane Pickard and Paul O. McGrew

(c) "Uranium in Northern Colorado and Southern Wyoming" Pages 126 - 129
By Eugene W. Grutt, Jr. and Jerry F. Whalen

SAMPLING

The drill holes recorded in this report were drilled with a rotary rig using bentonite mud. After some drying, the holes were logged by Jerry Phillips with a 600-W Minerals Engineering type of Babbel Counter. All values in the drill hole logs are radiometric.

Mr. Trevenen sent a sample from Section 20 to the Atomic Energy Commission July 9, 1954. The chemical analysis was 0.27% U_3O_8.

Sampling in the Maybell-Poison Springs area has shown that chemical assays are higher then the radiometric indications. Due to this lack of equilibrium samples should be taken at regular intervals and analysed chemically.

Due to the friability and softness of the sandstone rotary drilling with compressed air blowing of the cuttings and collection of samples with a Ducon collector is advisable.

MAPS

Map No. 1 - Index Map shows location of the Maybell District.

Map No. 2 - Map of the Trevenen-Littleton Group of Claims; which shows contours, drainage, present drill holes and proposed drill holes for Stage 1 drilling.

Map No. 3 - U.S.G.S. topograpical map "White River" Quadrangle.

Map No. 4 - U.S.G.L.O. Map Township 7 North, Range 95 West, 6th P.M. in Colorado; showing Trevenen-Littleton Group of Claims and some adjacent properties.

Map No. 5 - Colorado State Highway Map - Moffat County, Sheet 4. Some of the adjacent mines and properties are shown.

ADJACENT MINES

Adjoining the easterly claims of the Trevenen-Littleton Group in Section 21, T.7N., R. 95W., are the claims of Sullivan and Associates; most of their claims are located in sections 22 and 23, east of Spring Creek. Some drilling was being done on these claims in November.

Eastward from the Trevenen-Littleton Group, approximately 2 miles are the properties of the Trace Elements Corporation, a division of the Union Carbide Corporation. Trace Elements Corporation have holdings in sections 11, 12, 13 and 24, T. 7N., R.95W., and in Sections 8, 17, 18, 19 and 20, T.7N., R.94W. The Margie Mine in section 24, T.7N., R.95W., and the Gertrude Mine in sections 8, 17, and 18, T.7N., R.94 W., are reported to have shipped 0.20% to 0.25% U_3O_8 ore. The Robb Mine in this general area has recently been opened. Some underground mining has been done. One shaft has a depth of 135 feet. Most of the mining has been done by open pits from 50 to 100 feet deep. The ore has occurred 10 to 100 feet below surface. Mineralization has been reported to a depth of 300 feet. Water has not been a problem in mining in this area.

To the west of the Trevenen-Littleton Property, it is reported that 0.40% U_3O_8 ore has been found by Jerry Roberts. Northerly of the claims, Schwalder is reported to have 0.20% U_3O_8 ore at 20 feet depth and at 150 feet, 0.12% U_3O_8.

A sample from one mine in the Maybell area, at 100 feet depth in the unoxidized zone assayed 0.75% U_3O_8 and in another mine, a sample, also in the unoxidized zone, assayed 0.40% U_3O_8.

GEOLOGY AND MINERALIZATION

The formation, in which the Trevenen-Littleton property lies is the Brown's Park formation, of the Miocene, Series of the Tertiary System. According to Bergin, the Brown's Park formation lies unconformably on areas of rocks from Pre-Cambrian to the Eocene of the Tertiary System. He gives a possible thickness in places of 2,500 feet. Carey considers the estimate of 1,800 feet by Powell as a fair average maximum thickness for northwestern Colorado. Of course the thickness varies and is much less in many places. The Brown's Park formation extends from Brown's Park in the northwestern corner of Colorado along the north drop of the Uinta Mountain Arch through Maybell and along the Axial Basin anticline then easterly of Juniper Mountain and along the southerly part of the Sand Wash Basin to Cedar Mountain, northwest of Craig. Northerly of this area, rather extensive outcrops of Browns Park occur in southern Wyoming west of Baggs and east of Baggs to the Sarato Valley. Uneroded sections occur in the Elkhead Mountains of Colorado.

The Browns Park is of continental origin. Some parts are evidently of eolian deposition.

The Browns Park is in two units or members. The lower is a conglomerate principally of Pre-Cambrian cobbles, and ranges in thickness from 1 to 120 feet, depending on the eroded surface. This unit is termed the basal Browns Park conglomerate. The upper member ranges in various thicknesses up to 1,200 feet, and even greater in the Uinta Mountain area.

The upper standstone member is principally fine to medium grained, with gray and buff coloring, sometimes grayish white. The quartz grains, small, rounded and quite uniform in size are cemented by clays and calicum carbonate, very loosely in some areas. There are thin beds of tuffaceous standstone and chert; also a few occurrences of tuff and limestone lenses. Most of the sandstone beds are of slight dip. Some crossbedding occurs. There are several high angle faults in the area. It is believed that these faults have had a strong influence on the uranium deposition, through a controling effect on the ground water circulation. Very little carbonaecous material has been found in the sandstones. Some gas seeps occur south of Maybell.

Volcanic intrusions during Browns Park time are evident in the basalt at Cedar Mountain.

The Browns Park sandstone has been oxidized by surface and ground waters to various depths. The oxidized zone is light brownish in color due to limonite formed from oxidation of the original pyrite. Kaolinization of the clays and limestone lenses gives in places a whitish color. Due to the blue gray color of the disseminated pyrite bearing unoxidized sandstones, the contact with the oxidized zone is well marked. The minute particles of pyrite are widely disseminated throughout the small sandstone grains. The unoxidized area of the Browns Park formation has been shown by oilwell and mine drilling to extend over a very extensive area.

Uranium mineralization occurs in the three Browns Park divisions. The basal comglomerate does not carry mineable values; however, both the oxidized and unoxidized divisions carry uranium mineralization in mineable quanities.

The uranium mineralization which has been shown by radiometric surveys to extend over a very considerable area, is very finely divided, and very seldom can be identified in the hand specimen. Uraninite and coffenite have been indentified in the unoxidized zone. Uranophane, meta-autunite, uranyl phosphate and schroeckeingerite have been identified in the oxidized zone. Gypsum veinlets are common.

Deposits developed to date show several elongated ore lenses varying in length, width and thickness and in depths from surface and frequently overlap in superimposed positions. The ore generally consists of finely disseminated uranium minerals in soft, friable, porous, fine to medium grained massive sandstone. Ore has been mined in the area from near surface to 100 feet depths.

The principal ore occurrences developed to date are in the Gertrude and Margie Mines eastward of the Trevenen-Littleton property. The Gertrude is located in Sections 8, 17, and 18, T. 7N., R.94W., and the Margie in Section 24, T. 7N., R.95W. The ore from these mines, shipped from 50 feet deep open pits averages at least 0.22% U_3O_8. According to Bergin the ore occurs in sandstone beds from 5 to 30 feet in thickness, these beds are separated by beds of claystone and hard calcareous sandstone, 1 to 5 feet thick. The ore lenses are from 1 to 19' feet thick. The largest is reported to be 1,000 feet long, with widths of 200 to 300 feet. The ore zones usually follow the bedding of the sandstone. There are from one to five ore zones, at depths of 5 to 200 feet, as shown by drilling on the Gertrude Mine; these are overlapping zones. Also, on the Margie property there are one to three overlapping ore zones at depths of 10 to 180 feet. These ore bodies are associated with northerly striking, high angle faulting. The gauge material along the faults is highly mineralized.

Mineralization is more concentrated in the soft poorly cemented sandstone than in the hard calcareous sandstone. Samples of ore are reported to run as high as 0.80 to 1.25% U_3O_8.

Ore averaging 0.22% U_3O_8 has been shipped from Section 27, T. 7N., R. 94W. This was mined along a high angle fault, uranium values were disseminated. There are uranium mineral occurrences in Section 29, T. 7N., R. 94W., and Section 9, T. 6N., R. 94W.

A study by several government geologists, among them J. M. Bergin indicate a syncline superimposed on the Axial Incline. The north flank of this syncline, lying north of Maybell and Lay is where the present uranium mines and occurrences have been opened up. From the available data this area is an excellent area for further prospecting.

The U.S.G.S. Geophysical Investigations, Map GP 126, airborne Radioactivity Survey of Part of Moffat County, Colorado, south of 40°45' shows many very strong anomalies in Townships 7 and 8 North, through Ranges 91 to 96 West. This survey made in 1954 has been proven correct by drilling and mine development in numerous places. There is good probability that other places will similiarly be verified.

DEVELOPMENT

The development on the Trevenen-Littleton Group consists of several shallow location cuts and three large open cuts and 13 rotary drill holes. The open cuts were made during 1956 and are now partially caved. The drill holes ranging from 29 feet to 155 feet in depth were drilled during the summer of 1956 by Jerry Phillips. The holes are numbered from 5 to 17. The first four holes caved at the start and were abandoned.

There are ten holes classed as ore holes and three as mineralized.

Drill holes numbers 5, 7 and 8 are located in the northeasterly part of Orr No. 15 Claim. Hole No. 5 shows 5 feet of 0.26% U_3O_8 at 21 to 26 feet depth and 12 feet of 0.15 U_3O_8, at 47 to 59 feet depth. Hole No. 7 shows 10 feet of 0.20% U_3O_8 at 19 to 29 feet depth and 13 feet of 0.16% U_3O_8 at 47 to 60 feet depth. Hole No. 8, at depth from 9 to 15 feet, for 6 feet gives 0.13% U_3O_8 and from 100 to 105 feet, for 5 feet shows 0.14% U_3O_8.

Holes Nos. 6 and 9 and cuts 1 and 2 are in the southerly and northwesterly part of Trevenen-Littleton Claim No. 10. Hole No. 6 shows for 7 feet 0.14% U_3O_8, at 22 to 29 feet depth. Hole No. 9 for 50 feet from 5 to 55 feet depth, gives 0.12% U_3O_8. Cut 1 is approximately 75 feet long and 22 feet deep. The cut was partially caved, some radioactivity was indicated. Cut 2 just southerly of Hole 9 is 108 feet long and estimated at 50 feet deep. This cut is also caved, and shows slight radioactivity in its present weathered state.

Hole No. 10 is located in the northwest part of Dean Gent No. 1 Claim. This hole for 5 feet, from 120 to 125 feet shows 0.15% U_3O_8.

Hole No. 11 is mineralized and is located in the south central part of Orr Claim No. 20. Hole No. 12, a mineralized hole, is located in the southeasterly part of Orr No. 21 Claim. Hole No. 15, a mineralized hole, is located in the southwesterly part of Trevenen and Littleton Claim No. 7.

Hole No. 13, located in the west central part of Orr No. 22 Claim, shows 7 feet of 0.13% U_3O_8 at 28 to 35 feet depth.

Hole No. 14 in the northeast corner of Orr No. 24 Claim at depth of 16 to 33 feet, for 17 feet shows 0.15% U_3O_8. Hole No. 17 located in the southeasterly part of Orr No. 25 Claim, for 10 feet shows 0.15% U_3O_8 feet. Hole No. 16 located in the southwesterly part of Orr No. 7 Claim, for 12 feet, from 48 to 60 feet, shows 0.22% U_3O_8 and for 5 feet from 110 to 115 feet depth, shows 0.17% U_3O_8. Cut 3, a few feet northeasterly of Hole 16, is 52 feet long and 18 feet deep; it shows some radioactivity at these depths.

A study of the values and depths in these drill holes strongly indicates two ore zones. The area outlined by Holes 5, 6, 7 and 8 shows an ore zone ranging in depths from 9 to 29 feet, with a weighted average of 7.8 feet thickness and 0.19% U_3O_8. At depths ranging from 47 to 60 is a second ore zone, with weighted average of 12.7 feet thickness and 0.16% U_3O_8. A third zone is indicated in Hole No. 8 at depths of 100 to 105 feet, with a thickness of 5 feet and 0.14% U_3O_8.

A good potential ore body is indicated by the above holes, however, they are not sufficiently closely spaced to estimate a positive ore reserve.

Holes 9 and 10 indicate an area with two ore zones, a shallow zone of about 50 feet thickness of 0.12% U_3O_8 and a deeper zone below 100 foot depth of 5 feet thickness of 0.15% U_3O_8.

The area as partially outlined by Holes No's 13, 14, 16 and 17 indicates an ore zone ranging in depth from 20 to 60 feet, with a weighted average of 11.5 feet thickness and 0.17% U_3O_8. Hole 16 has a lower zone at 110 feet for a 5 feet thickness and 0.17% U_3O_8.

The weighted average of the 10 holes for the upper zone is 11.5 feet in thickness and 0.17% U_3O_8. The second zone is indicated as 12.5 feet thick with 0.16% U_3O_8 and the third zone as of 5 feet thickness with 0.15% U_3O_8.

The 13 holes show a strong mineralization for a distance of two miles in a southeasterly direction and for an indicated 1,200 feet in a northerly direction.

This scattered drilling on the Trevenen-Littleton area of nearly 950 acres shows a wide distribution of uranium mineralization and indicates the desireability of a systematic program of drilling.

RECOMMENDED EXPLORATION PROGRAM

The exploration drilling done on the Trevenen-Littleton Group of 48 Claims in 1956 shows strong uranium mineralization over a wide area and in one locality several ore holes indicate ore bodies in at least two zones. The 13 drill holes range in depth from 29 to 155 feet. As the topography raises on the northerly tier of claims, some 200 feet deep holes will be needed. It is suggested that 153 holes be drilled in the First Stage drilling to depths from 100 to 200 feet, with an average of 160 feet depth, placed on 400 feet centers in fences 600 feet apart, to determine the presence and trends of favorable and mineralized areas.

As mineralization has been reported to occur as deep as 300 to 600 feet, it is considered advisable to drill some 500 feet holes. It is suggested that one in every 12 holes be drilled to 500 feet depths, in all 3 stages of drilling.

Depending on the results of the Stage 1 drilling, it is suggested that Stage 11 drilling consisting of 76 holes, of similiar depths and spacing of holes and fences, however, staggered with the spacing of Stage 1, to determine within the favorable areas the more definite location of ore bodies. Depending on the location of ore bodies in the Stage 11 drilling, it is suggested that 76 holes, of similiar depths, be drilled on 50 feet offsets to ore and mineralized holes to outline ore bodies, under the classification of "reasonable delineation," for the Stage 111 drilling. ? Dev.

For location of drill holes under Stage 1, please refer to map No. 2, in pocket.

ESTIMATED EXPLORATION COSTS UNDER DMEA

Stage 1 The suggested layout of holes on Map No. 2 totals 153 holes, average 160 feet in depth; with 12 holes 500 feet deep.

(a) Independent Contracts:

It is contemplated to do all phases of the drilling under contract, including equipment, labor, water, power, fuel, etc., on an actual cost basis:

		Cost	Unit Cost Per Foot
Drilling	24,480 feet @ $ .80 ft	$19,584.00	$0.697
	3,600 " @ 1.00 ft	3,600.00	0.128
Total	28,080 "	$23,184.00	0.825
Standby Time	152 Hrs @ $12.00	1,824.00	0.065
Bulldozer	70 Hrs @ $12.00	840.00	0.030
Chemical Assays	1,530 @ 3.50	5,355.00	0.191
		(31,203.00)	
			(1.111)

(b) Labor, Supervision, Consultants:

It is estimated that one drilling unit can do 375 feet per working day. Stage 1 with 24,480 feet of drilling would be completed in 65 working days or in approximately 3 months operating time.

Sampler - Geologist @ $650.00 per month	$1,950.00		
Consultant - 1 week intermittently per month @ $400.00	$1,200.00		
Expenses - 40 days monthly @ $5.00 = $200.00	$600.00		
		$3,750.00	0.134

(c) Operating Materials and Supplies

	Cost		Unit Cost Per Foot
Fuel for 1/2 ton truck @ $75.00 per Month	$225.00		
Core or sand boxes, 50 @ $5.00	250.00		
Miscel. drafting, office & reports, supplies	150.00	$625.00	0.022

(d) Operating Equipment

1 1/2 Ton Pickup Truck $150.00 per Month	$450.00		
1 Babbel County - @ $62.50	187.50	637.50	0.023

(g) Miscellaneous

Accounting - $100.00 per month	300.00		
Federal - State Unemployment tax @ 3%			
Social Security tax @ 2 1/4%			
State Industrial Compensation tax @ 1.13%			
Total 6.38% of $3,150.00	201.00	501.00	0.018
		(36,716.50)	

(h) Contingencies

Approximately 10% total	3,671.65	0.131
Totals Stage 1	$40,388.15	1.438

Stage 11 It is believed that an additional 76 holes would be required to search for ore deposits in the favorable ground found during Stage 1. Costs of Stage 11 drilling are estimated to be in porportion to the costs of Stage 1 drilling.

(a) Independent Contracts

		Cost	Unit Cost Per Foot
Drilling	12,240 feet @ $ 0.80	$9,792.00	0.697
	1,800 " @ 1.00	1,800.00	0.128
Total	14,040 "	11,592.00	0.825
Standby Time	76 Hrs @ $12.00	912.00	0.065
Bulldozer	35 Hrs @ $12.00	420.00	0.030
Chemical Assays	765 Hrs @ $ 3.50	2,677.50	0.191
(b) Labor, Supervision, Consultants (6 weeks time)		1,875.00	0.134
(c) Operating Materials and Supplies		312.50	0.022
(d) Operating equipment		318.75	0.023
(g) Miscellaneous		250.50	0.018
(h) Contingencies (Approx. 10% Total)		1,835.82	0.131
Totals Stage 11		20,194.07	1.438

Stage 111 An additional 76 holes would be required to offset ore and mineralized holes. Costs will be in proportion to the costs of Stage 1 drilling.

(a) Independent Contracts:

		Cost	Unit Cost Per Foot
Drilling	12,240 feet @ $ 0.80	$ 9,792.00	$ 0.697
	1,800 " @ 1.00	1,800.00	0.128
Total	14,040 feet	11,592.00	0.825
Standby Time	76 Hrs @ $12.00	912.00	0.065
Bulldozer	35 Hrs @ 12.00	420.00	0.030
Chemical Assays	765 Hrs@ 3.50	2,677.50	0.191
(b) Labor, Supervision, Consultants (6 weeks time)		1,875.00	0.134
(c) Operating Materials and Supplies		312.50	0.022
(d) Operating Equipment		318.75	0.023
(g) Miscellaneous		250.50	0.018
(h) Contingencies		1,835.82	0.131
Totals Stage 111		$20,194.07	$ 1.438

SUMMARY OF COSTS

Stage 1	$40,388.15
Stage 11	20,194.07
Stage 111	20,194.07
Total	$80,676.30
Governments participation @ 50%	40,338.15
Total Unit Price Per Foot	1.438

Total time required to complete all Stages: 6 Months

SUMMARY AND CONCLUSIONS

The Trevenen-Littleton Group of Claims is well located geologically in the Browns Park formation. The property is within two miles of the well developed and operating mines of the Trace Elements Corporation, easterly of Maybell, Moffat County, Colorado. The property is readily accessible for development and for marketing of ores. Mineralization is general easterly, northerly and westerly of the property. The entire area is markedly radioactive. The limited drilling on the property has indicated at least two ore zones and probably three. The drill holes have indicated mineralization over a considerable area.

In view of the favorable conditions, it is considered that an extensive and planned program of drilling to thoroughly explore and outline the mineralization and ore bodies is warranted.

Respectfully submitted

Neal M. Muir,
Mining Engineer

La Court Hotel
Grand Junction, Colo.

December 27, 1956.

TABLE NO. 1

LOGS OF DRILL HOLES

DRILLED BY JERRY PHILLIPS - Summer, 1956

Hole No. 5

Depth Feet	% U_3O_8
3	.06
6	.06
9	.06
12	.08
15	.10
18	.10
21	.06
23	.46
26	.06
28	.08
32	.06
35	.02
38	.02
41	.04
44	.02
47	.10
50	.18
53	.20
56	.16
59	.04

Hole No. 6

Depth Feet	% U_3O_8
0 to 22	No Reading
23	0.26
25	0.10
28	0.10
29	0.34

Hole No. 7

Depth Feet	% U_3O_8
3	.02
5	.10
8	.10
11	.08
18	.08
19	.10
20	.16
23	.40
26	.10
29	.10
32	.06
35	.02
38	.06
41	.06
44	.02
47	.10
50	.18
53	.20
54	.20
56	.18
60	.08
65	.08
70	.06
75	.02
80	.08
85	.02
90	.04

Hole No. 8

Depth Feet	% U_3O_8
1	.10
2	.08
3	.10
4	.08
5	.12
6	.10
7	.06
8	.08
9	.08
10	.12
12	.14
15	.09
20	.08
25	.06
30	.08
35	.10
40	.12
45	.08
50	.06
55	.04
60	.04
65	.10
70	.06
75	.06
80	.08
85	.10
90	.04
95	.06
99	.00
100	.20
101	.24
102	.18
105	.08
108	.02
115	.09

Hole No. 9

Depth Feet	% U_3O_8
5	.10
10	.14
15	.12
20	.12
25	.10
30	.12
35	.14
40	.10
45	.12
50	.12
53	.20
55	.12
60	.10
65	.08
70	.08
75	.10
80	.04
85	.02
90	.06
92	.10
100	.08
105	.04
110	.04
115	.15
120	.02
123	.04
125	Caved

Hole No. 10

Depth Feet	% U_3O_8
1 to 30	.00
35	.10
36 to 75	.00
80	.10
83	.08
90	.10
95	.10
100	.10
105	.10
110	.08
115	.02
120	.08
124	.20
125	.16
130	.02
130 to 155	.00

Hole No. 11

Depth Feet	% U_3O_8
2	.04
3	.06
7	.10
10	.04
15	.08
20	.00
25	.04
30	.04
35	.04
40	.02
44 to 55	.00

Hole No. 12

5	.04
6 to 20	.00
25	.02
30 to 40	.00
45	.04
50	.04
55	.10
60	.06
65	.04
70	.04
75	.10
79	.08
85	.00

Hole No. 13

Depth Feet	% U_3O_8
2	.08
3	.10
4	.12
5	.08
6	.10
7	.12
8	.12
9	.10
10	.10
12	.10
14	.10
15	.10
12	.12
20	.08
25	.06
28	.10
29	.30
30	.06
33	.14
35	.08
46	.04
46 to 50	Caved

Hole No. 14

Depth Feet	% U_3O_8
6	.04
7	.06
8	.10
9	.08
10	.14
11	.12
12	.12
13	.12
14	.10
15	.10
16	.10
18	.18
19	.20
20	.26
25	.06
30	.12
32	.30
33	.20
35	.02
40	.08
45	.08
50	.02
54	.10
55	.12
55 to 75	Caved

Hole No. 15

Depth Feet	% U_3O_8
5	.04
10	.02
15	.02
20	.00
22	.00
23	.08
23to 45	Caved

Hole No. 16

Depth Feet	% U_3O_8
2 to 45	.00
48	.14
49	.14
50	.18
51	.28
52	.18
53	.18
55	.12
56	.38
57	.40
60	.10
65	.08
70	.10
75	.08
80	.08
85	.04
90	.06
95	.10
100	.08
105	.08
110	.18
111	.18
115	.10
120	.04
125 to 150	Caved

Hole No. 17

Depth Feet	% U_3O_8
5	.04
10	.02
15	.06
20	.09
22	.16
23	.18
24	.20
25	.18
30	.10
35	.06
40	.06
45	.04
50	.10
55	.06
55 to 65	Caved

TABLE NO. 2

WEIGHTED AVERAGES OF VALUES OF ORE ZONES

TAKEN FROM JERRY PHILLIPS RADIOMETRIC LOGS

Hole No.	Depth in Feet From	To	Thickness Feet	% U_3O_8	
5	21	23	2	0.26	
	23	26	3	0.26	
			5	0.26	Average
	47	50	3	0.14	
	50	53	3	0.19	
	53	56	3	0.18	
	56	59	3	0.10	
			12	0.15	Average
6	22	23	1	0.13	
	23	25	2	0.18	
	25	28	3	0.10	
	28	29	1	0.22	
			7	0.14	Average
7	19	20	1	0.13	
	20	23	3	0.28	
	23	26	3	0.25	
	26	29	3	0.10	
			10	0.20	Average
	47	50	3	0.14	
	50	53	3	0.19	
	53	54	1	0.20	
	54	56	2	0.19	
	56	60	4	0.13	
			13	0.16	Average
8	9	10	1	0.10	
	10	12	2	0.13	
	12	15	3	0.12	
			6	0.12	Average
	100	101	1	0.22	
	101	102	1	0.21	
	102	105	3	0.13	
			5	0.14	Average

Hole No.	Depth in Feet From	To	Thickness Feet	% U_3O_8
9	5	10	5	0.12
	10	15	5	0.13
	15	20	5	0.12
	20	25	5	0.11
	25	30	5	0.11
	30	35	5	0.13
	35	40	5	0.12
	40	45	5	0.11
	45	50	5	0.12
	50	53	3	0.16
	53	55	2	0.16
			50	0.12 Average
10	120	124	4	0.14
	124	125	1	0.18
			5	0.15 Average
13	28	29	1	0.20
	29	30	1	0.18
	30	33	3	0.10
	33	35	2	0.11
			7	0.13 Average
14	16	18	2	0.14
	18	19	1	0.19
	19	20	1	0.23
	20	25	5	0.16
	25	30	5	0.09
	30	32	2	0.21
	32	33	1	0.25
			17	0.15 Average
16	48	49	1	0.14
	49	50	1	0.16
	50	51	1	0.23
	51	52	1	0.23
	52	53	1	0.18
	53	55	2	0.15
	55	56	1	0.25
	56	57	1	0.39
	57	60	3	0.25
			12	0.22 Average
	110	111	1	0.18
	111	115	4	0.14
			5	0.17 Average
17	20	22	2	0.12
	22	23	1	0.17
	23	24	1	0.19
	24	25	1	0.19
	25	30	5	0.14
			10	0.15 Aver.

MINING LEASE

THIS AGREEMENT, Made and entered into this 5th day of July, A. D. 1956, by and between Elmer Trevenen, individually, and Elmer Trevenen, as Attorney-in-fact for K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Meinake all of Maybell, Colorado, hereinafter known as the OWNERS, Parties of the First Part and Jerry Phillips of Palisade, Colorado, Box 702, hereinafter known as the OPERATORS, Party of the Second Part, WITNESSETH:

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DATE | INITIALS | CODE

That for and in consideration of the covenants hereinafter set forth to be performed by the OPERATOR the said OWNERS hereby give and grant to the said OPERATOR the exclusive mining lease of all of those certain Lode Mining Claims owned by said OWNERS in Township 7 N. R. 95 W. 6th P. M. in Moffat County, Colorado, being North of Maybell, Colorado, for the mining and removal of minerals therefrom, upon the terms as hereinafter set forth:

The names and place of recordation in the office of the County Clerk and Recorder, in Moffat County, Colorado, of said Claim is as follows, to-wit:

> The Orr Lode Mining Claims Numbered 1 to 31 inclusive and Recorded in Book No. 208 on Pages numbered 284 to 345 inclusive and Orr Mining Claims numbered 26 and 27 amended and recorded in Book No. 209 at pages 314 to 317 inclusive.

OPERATOR Is to move on said claims within 60 days from the date of this agreement and start exploration work and the testing of said claims for the mineral content therein and such work is to be completed not later than nine (9) months from the date of this agreement. Such testing to be thorough and complete and of such nature as to reveal the nature and extent of any minerals thereon or therein within what is generally known as the BROWNS PARK formation. The cost of such exploratory work to be equal to at least the required amount of assessment work for each of said claims for the year ending June 30th, 1957. And after said work has been finished OPERATOR will make, execute and deliver to OWNERS and affidavit showing the amount expended in exploratory work on said claims, for the purpose of holding the same.

If minerals of paying quality and quantity are discovered on any part of said Lode Claims of the Owners as a result of the prospect and exploratory work of the OPERATOR within 60 days of such discovery the said OPERATOR will move upon said Claim or Claims and start the mining and removal of said Ores or Minerals therefrom and will market same immediately upon removal from said claim or claims and will continue to mine, remove, and market said ores or Minerals from said premises so long as the same may be mined and removed in paying quantity and quality. It is further agreed that when minerals have been found on said premises and can be mined in paying quantity then the parties hereto will agree and determine the number of tons to be mined per annum from any part of said LODE MINING CLAIMS, and this may be done from year to year as conditions may warrant.

OPERATOR WILL PAY TO THE SAID Elmer Trevenen, individually and as attorney-in-fact for the other OWNERS of said claims a royalty of Ten Per Centum (10%) of all of the ores or minerals mined or removed from said Mining Claims to be delivered to the Buyer or Buyers of said minerals or ores free of cost to the said OWNERS. Such royalty at all times to be free and clear from any costs or expenses of any kind. Said Royalty payments to be made either direct to the said Elmer Trevenen or his order for the use and benefit of said OWNERS or the same may be deposited to the credit of said Elmber Trevenen, as an individual and as attorney-in-fact for said OWNERS in the Moffat County State Bank of Craig, Colorado. All Royalty Minerals to be settled for not later than the 10th day of the month succeeding the month in which the same have been mined.

In Addition to the Royalty above provided for the said OPERATOR will pay the OWNERS Ten Per Centum of any and all bonuses he may receive from the sale of any minerals from said claims or from the sale or assignment of his interest in said claims, and the full consideration for any assignment or sale of OPERATOR'S interest in said claims shall be revealed to OWNERS before any such assignment or sale becomes effective.

It is further agreed that OPERATOR will sell or dispose of all minerals within 30 days after the same have been mined and will not stock pile minerals or ores on said premises for a period of more than 15 days without the written permission of the OWNERS First had and obtained.

It is further agreed that OPERATOR will diligently prosecute the mining and removal of minerals or ores from said premises and sell the same within 30 days after removal from any mine, shaft or opening on said premises. If mining operations are suspended by OPERATOR, except through an Act of God, or for some unavoidable act on the part of OPERATOR, for a period of 30 days without the written permission of the OWNERS first had and obtained then this Lease shall forthwith terminate as to both parties and any and all property belonging to the OPERATOR on said premises shall not be removed until full settlement for any royalty due the OWNERS has been made.

OPERATOR may place any kind of machinery, equipment and buildings upon the said premises and may remove the same at the termination hereof except as set forth in the above paragraph.

OPERATOR will comply with all Federal, State and Local laws and customs and the regulations promulgated thereunder in his operation of mining and removal of minerals and ores from the above mining claims and he will hold the OWNERS free and clear from any and all liability arising from any mining operations on said claims and will when required by law carry such insurance protection as may be deemed necessary or advisable against loss from damage to property and persons while mining on said premises, or for compensation insurance.

It is further agreed that OPERATOR will hold OWNERS free from loss to any individual or others claiming loss because of the use of the surface of any of said Mining Claims.

The OWNERS hereby warrant that they have good right, full power and authority to lease the said Mining Claims above and will hold OPERATOR free and harmless from any claim to any other individual or individuals claiming any interest in the mineral content of the lands in the above described Claims. OWNERS further warrant that they are the sole and only owners of said Mining Claims.

In the event that OPERATOR fails to meet all the requirements herein provided for for him to keep and perform for a period of 30 days this lease may be terminated upon 10 days written notice unless OPERATOR shall remedy such default within said 10 days.

Upon the termination of this agreement for any purpose whatever the OPERATOR will quit and surrender said premises and deliver to OWNERS a Quit Claim deed covering said premises upon demand, such surrender to be forthwith under penalty of unlawful detainer.

This agreement shall be binding upon and inure to the benefit of the respective parties hereto, their heirs, Administrators, Executors, personal representatives and assigns.

IN WITNESS WHEREOF, the said Parties have hereunto set their hands and seals, in duplicate, the day and date first above written.

Elmer Trevenen

Individually and as Attorney-in-fact for: K. C. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solsen, Alva Solsen, Sam J. Steele, George Kitchens, Fred Heatherly, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Heinsohn.
Parties OF THE FIRST PART, THE OWNERS.

Jerry Phillips

PARTY OF THE SECOND PART, OPERATOR

STATE OF COLORADO)
) SS.
COUNTY OF MOFFAT)

The foregoing instrument was acknowledged before me this 14th day of July, A. D. 1956, by Elmer Trevenen, individually and as Attorney-in-fact for E. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitebens, Fred Leatherty, Bobby Robison, George Polk, L. E. Gant, Dean Gant and A. D. Meinecke all of Maybell, Colorado, hereinafter known as the OWNERS, Parties of the First Part and Jerry Phillips of Palisade, Colorado, Box 702, hereinafter known as the OPERATOR, Party of the Second part,

Witness my hand and Official Seal.

My Commission Expires

Feb 5. 19 57

Notary Public

MINING LEASE

THIS AGREEMENT, Made and entered into this 15th day of November, A. D. 1956, by and between Elmer Trevenen and Kennis O. Littleton of Maybell, Colorado, hereinafter known as the OWNERS, Parties of the First Part and Jerry Phillips of Box 702, Palisade, Colorado, hereinafter known as the OPERATOR, Party of the Second part, WITNESSETH:

That for and in consideration of the covenants hereinafter set forth to be performed by the OPERATOR the said OWNERS hereby give and grant to the said OPERATOR the exclusive mining lease of all of theose certain Lode Mining Claims owned by said OWNERS in Township 7 N. R. 95 W. 6th P. M. in Moffat County, Colorado, being North of Maybell, Colorado, for the mining and removal of minerals therefrom, upon the terms as hereinafter set forth;

The names and place of recordation in the office of the County Clerk and Recorder, in Moffat County, Colorado, of said Claim is as follows:

> The T. & L. Lode Mining Claims Nos. 1 to 14 inclusive and recorded in Book 235 at pages 323 to 336 inclusive, also the T. & L. Lode Mining Claim No. 11 not yet recorded.

OPERATOR is to move on said claims within 60 days from the date of this agreement and start exploration work and the testing of said claims for the mineral content therein and such work is to be completed not later than nine (9) months from the date of this agreement. Such testing to be thorough and complete and of such nature as to reveal the nature and extent of any minerals thereon or therein within what is generally known as the BROWNS PARTK formation. The cost of such exploratory work to be equal to at least the required amount of assessment work for each of said claims for the year ending June 30th, 1957. And after said work has been finished OPERATOR will make, execute and deliver to OWNERS an affidavit showing the amount expended in exploratory work on said claims, for the purpose of holding the same.

If minerals of paying quality and quantity are discovered on any part of said Lode Claims of the Owners as a result of the prospect and exploratory work of the OPERATOR within 60 days of such discovery the said OPERATOR will move upon said Claim or Claims and start the mining and removal of said Ores or Minerals therefrom and will market same immediately upon removal from said claim or claims and will continue to mine, remove, and market said ores or Minerals from said premises so long as the same may be mined and removed in paying quantity and quality. It is further agreed that when minerals have been found on said premises and can be mined in paying quantity then the Parties hereto will agree and determine the number of tons to be mined per annum from any part of said LODE MINING CLAIMS, and this may be done from year to year as conditions may warrant.

OPERATOR will pay to the said Elmer Trevenen and Kennie O.Littleton, the OWNERS of said claims a royalty of Ten Per Cent (10%) of all of the ores or minerals mined or removed from said mining claims to be delivered to the Buyer or Buyers of said minerals or ores free of cost to the said OWNERS. Or will pay to said Owners the equivalent of Ten Per Cent (10%) of the value of said minerals or ores delivered to the Buyer, free of cost, to said Owners. Said Royalty payments to be made either direct or to the credit of the said Owners at the Moffat County State Bank at Craig, Colorado. All Royalty Minerals or Ores to be settled for not later than the 10th day of the month succeeding the month in which the same have been mined.

In Addition to the Royalty above provided for the said OPERATOR will pay the ONWERS Ten (10) Per Centum of any and all bonuses he may receive from the sale of any minerals from said claims or from the sale of assignment of his interest in said claims, and the full consideration for any assignment of sale of OPERATOR'S interest in said claims shall be revealed to OWNERS before any such assignment of sale becomes effective.

It is further agreed that OPERATOR will sell or dispose of all minerals within 30 days after the same have been mined and will not stock pile minerals or ores on said premises for a period of more than 15 days without the written permission of the OWNERS First had and obtained.

It is further agreed that OPERATOR will diligently prosecute the mining and removal of minerals or ores from said premises and sell the same within 30 days after removal from any mine, shaft or opening on said premises. If mining operations are suspended by OPERATOR, except through an Act of God, or for some unavoidable act on the part of OPERATOR, for a period of 30 days without the written permission of the OWNERS first had and obtained then this Lease shall forthwith terminate as to both parties and any and all property belonging to the OPERATOR on said premises shall not be removed until full settlement for any royalty due the OWNERS has been made.

OPERATOR may place any kind of machinery, equipment and buildings upon the said premises and may remove the same at the termination hereof except as set forth in the above paragraph.

OPERATOR WILL COMPLY WITH ALL Federal, State and Local laws and customs and the regulations promulgated thereunder in his operation of mining and removal of minerals and ores from the above mining claims and he will hold the OWNERS free and clear from any and all liability arising from any mining operations on said claims and will when required by law carry such insurance protection as may be deemed necessary or advisable against loss from damage to property and persons while mining on said premises, or for compensation insurance.

It is further agreed that OPERATOR will hold OWNERS free from loss to any individual or others claiming loss because of the use of the surface of any of said Mining Claims.

The OWNERS hereby warrant that they have good right, full power and authority to Lease the said Mining Claims above and will hold OPERATOR free and harmless from any claim to any other individual or individuals claiming any interest in the mineral content of the lands in the above described Claims. OWNERS further warrant that they are the sole and only owners of said Mining Claims.

In the event that OPERATOR fails to meet all the requirements herein provided for for him to keep and perform for a period of 30 days this lease may be terminated upon 10 days written notice unless OPERATOR sahll remedy such default within said 10 days.

Upon the termination of this agreement for any purpose whatever the OPERATOR will quit and surrender said premises and deliver to OWNERS a Quit Claim deed covering said premises upon demand, such surrender to be forthwith under penalty of unlawful detainer.

This agreement shall be binding upon and inure to the benefit of the respective parties hereto, their heirs, Administrators, Executors, personal representatives and assigns.

IN WITNESS WHEREOF, the said Parties have hereunto set their hands and seals, in duplicate, the day and date first above written.

Elmer Trevenen

Kennis O. Littleton

Parties of the First Part, the Owners.

Jerry Phillips

PARTY OF THE SECOND PART, The OPERATOR.

STATE OF COLORADO)
) SS
COUNTY OF MOFFAT)

The foregoing instrument was acknowledged before me this 15th day of November, A. D. 1956, by Elmer Trevenen, Kennis O. Littleton and Jerry Phillips.

Witness my hand and Official Seal.

My Commission Expires
February 5th, 1959.

Notary Public

MINING LEASE

THIS AGREEMENT, made and entered into this 21st day of January, A.D. 1958, by and between Elmer Trevenen, individually, and Elmer Trevenen, as Attorney in Fact for K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam. J. Steele, George Kitchens, Fred Leatherby, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Meineke all of Maybell, Colorado, hereinafter known as the OWNERS, Parties of the First part and Jerry Phillips of Palisade, Colorado, Box 702, hereinafter known as the OPERATORS, Party of the Second Part, WITNESSETH:

That for and in consideration of the covenants hereinafter set forth to be performed by the OPERATOR the said OWNERS hereby give and grant to the said OPERATOR the exclusive mining lease of all of those certain Lode Mining Claims owned by said OWNERS in Township 7N. R. 95W. 6th P.M. in Moffat County, Colorado, being north of Maybell, Colorado, for the mining and removal of minerals therefrom, upon the terms as hereinafter set forth:

The names and place of recordation in the office of the County Clerk and Recorder, in Moffat County, Colorado, of said Claim is as follows, to-wit:

> The Orr Lode Mining Claims numbers 32 and 33 and recorded in Book No. 209 on Pages 318 to 321 and the George Polk No. 1 Claim and the Dean Gent No. 1 Claim, recorded in Book 190, Pages 424 and 425.

OPERATOR is to move on said claims within 120 days from the date of this agreement and start exploration work and the testing of said claims for the mineral content therein and such work is to be completed not later than nine (9) months from the date of this agreement. Such testing to be thorough and complete and of such nature as to reveal the nature and extent of any minerals thereon or therein within what is generally known as the BROWNS PARK formation. The cost of such exploratory work to be equal to at least the required amount of assessment work for each of said claims for the year ending June 30th, 1958. And after said work has been finished OPERATOR will make, execute and deliver to OWNERS an affidavit showing the amount expended in exploratory work on said claims, for the purpose of holding the same.

If minerals of paying quality and quantity are discovered on any part of said Lode claims of the Owners as a result of the prospect and exploratory work of the OPERATOR within 60 days of such discovery the said OPERATOR will move upon said Claim or Claims and start the mining and removal of said Ores or Minerals therefrom and will market same immediately upon removal from said claim or claims and will continue to mine, remove, and market said ores or minerals from said premises so long as the same may be mined and removed in paying quantity and quality. It is further agreed that when minerals have been found on said premises and can be mined in paying quantity then the parties hereto will agree and determine the number of tons to be mined per annum from any part of said LODE MINING CLAIMS, and this may be done from year to year as conditions may warrant.

OPERATOR WILL PAY TO THE SAID Elmer Trevenen, individually and as Attorney in Fact for the other OWNERS of said claims a royalty of Ten Percent (10%) of all of the ores or minerals mined or removed from said mining claims to be delivered to the buyer or buyers of said minerals or ores free of cost to the said OWNERS. Such royalty at all times to be free and clear from any costs or expense of any kind. Said royalty payments to be made either direct to the said Elmer Trevenen or his order for the use and benefit of said OWNERS or the same may be deposited to the credit of said Elmer Trevenen, as an individual and as Attorney in Fact for said OWNERS in the Moffat County State Bank of Craig, Colorado. All royalty minerals to be settled for not later than the 10th day of the month succeeding the month in which the same have been mined.

In addition to the royalty above provided for the said OPERATOR will pay the OWNERS ten percent (10%) of any and all bonuses he may receive from the sale of any minerals from said claims or from the sale or assignment of his interest in said claims, and the full consideration for any assignment or sale of OPERATOR'S interest in said claims shall be revealed to OWNERS before any such assignment or sale becomes effective.

It is further agreed that OPERATOR will sell or dispose of all minerals within 30 days after the same have been mined and will not stockpile minerals or ores on said premises for a period of more than 15 days without the written permission of the OWNERS first had and obtained.

It is further agreed that OPERATOR will diligently prosecute the mining and removal of minerals or ores from said premises and sell the same within 30 days after removal from any mine, shaft or opening on said premises. If mining operations are suspended by OPERATOR, except through an Act of God, or for some unavoidable act on the part of OPERATOR, for a period of 30 days without the written permission of the OWNERS first had and obtained then this Lease shall forthwith terminate as to both parties and any and all property belonging to the OPERATOR on said premises shall not be removed until full settlement for any royalty due the OWNERS has been made.

OPERATOR may place any kind of machinery, equipment and buildings upon the said premises and may remove the same at the termination hereof except as set forth in the above paragraph.

OPERATOR will comply with all Federal, State and Local Laws and customs and the regulations promulgated thereunder in his operation of mining and removal of minerals and ores from the above mining claims and he will hold the OWNERS free and clear from any and all liability arising from any mining operations on said claims and will when required by law carry such insurance protection as may be deemed necessary or advisable against loss from damage to property and persons while mining on said premises, or for compensation insurance.

It is further agreed that OPERATOR will hold OWNERS free from loss to any individual or others claiming loss because of the use of the surface of any of said Mining Claims.

The OWNERS hereby warrant that they have good right, full power and authority to lease the said Mining Claims above and will hold OPERATOR free and harmless from any claim to any other individual or individuals claiming any interest in the mineral content of the lands in the above described claims. OWERNS further warrant that they are the sole and only owners of said Mining Claims.

In the event that OPERATOR fails to meet all the requirements herein provided for for him to keep and perform for a period of 30 days this Lease may be terminated upon 10 days written notice unless OPERATOR shall remedy such default within said 10 days.

Upon the termination of this agreement for any purpose whatever the OPERATOR will quit and surrender said premises and deliver to OWNERS a Quit Claim deed covering said premises upon demand, such surrender to be forthwith under penalty of unlawful detainer.

This agreement shall be binding upon and inure to the benefit of the respective parties hereto, their heirs, Administrators, Executors, personal representatives and assigns.

IN WITNESS WHEREOF, the said Parties have hereunto set their hands and seals, in duplicate, the day and date first above written.

Ebner Trevenen
Individually and as Attorney in Fact for K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Meineke, Parties of THE FIRST PART, THE OWNERS.

Larry P. Phillips
PARTY OF THE SECOND PART, OPERATOR

STATE OF COLORADO)
) SS
COUNTY OF MOFFAT)

The foregoing instrument was acknowledged before me this 21st day of Jan, A.D. 1958, by Elmer Trevenen, individually and as Attorney in Fact for K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Meineke all of Maybell, Colorado, hereinafter known as the OWNERS, Parties of the first part.

Witness my hand and Official Seal.

My Commission Expires:

Feb 5. 1959

Ralph L. White
Notary Public

STATE OF COLORADO)
) SS
COUNTY OF Mesa)

The foregoing instrument was acknowledged before me this 24th day of January, A.D., 1958 by Jerry Phillips of Plaisade, Colorado, Box 702, hereinafter known as the OPERATOR, Party of the Second Part.

Witness my hand and Official Seal.

My Commission Expires:

1/2/60

Leslie C. Wilson
Notary Public

ASSIGNMENT

In consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration, the undersigned, JERRY PHILLIPS of Palisade, Colorado, does hereby sell, assign, transfer and convey unto LEWIS H. LARSEN of Salt Lake City, Utah, one-half (1/2) undivided interest in all of his right, title and interest in and to certain Mining Leases TO WIT: Mining Lease dated November 15, 1956, wherein Elmer Trevenen and Kennis O. Littleton are designated as the Owners, and Jerry Phillips is designated as the Operator, said Mining Lease relating to certain Lode Mining Claims, situated in Township 7 North, Range 95 West, 6th P.M., in Moffat County, Colorado, said claims being named the T. & L. Lode Mining Claims Nos. 1 to 14, inclusive, and having been recorded November 15, 1955 in Book 235, Pages 323 to 336, inclusive, in the Recorder's Office for Moffat County, Colorado, and T. & L. Lode Mining Claim No. 15, recorded December 5, 1956, Book 236, Page 442; Mining Lease dated July 5, 1956, wherein Elmer Trevenen, individually and Elmer Trevenen, as Attorney in Fact for K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Meineke all of Maybell, Colorado, therein known as the OWNERS, Parties of the First Part and Jerry Phillips of Palisade, Colorado, Box 702, therein known as the OPERATOR; said Mining Lease relating to certain Lode Mining Claims, situated in Township 7 North, Range 95 West, 6th P.M. in Moffat County, Colorado; said claims being named the Orr Lode Mining Claims Nos. 1 to 31 inclusive recorded July 1, 1955 in Book 208, Pages 284 to 345, inclusive, Orr Mining Claims 26 - amended and 27 - amended, recorded July 12, 1955, in the Recorder's Office for Moffat County, Colorado; Mining Lease dated January 21, 1958, wherein Elmer Trevenen, individually and Elmer Trevenen, as Attorney in Fact for K. O. Littleton, Rosie Littleton, Virginia Trevenen, James Duncan, James Solace, Alva Solace, Sam J. Steele, George Kitchens, Fred Leatherby, Bobby Robison, George Polk, L. E. Gent, Dean Gent and A. D. Meineke all of Maybell, Colorado, therein known as the OWNERS, parties of the First Part and Jerry Phillips of Palisade, Colorado, Box 702, therein known as the OPERATOR; said Mining Lease relating to certain Lode Mining Claims, situated in Township 7 North, Range 95 West, 6th P.M. in Moffat County, Colorado; said claims being named the Orr Lode Mining Claims numbers 32 and 33 and recorded in Book 209 on Pages 318 to 321 and George Polk No. 1 Claim and Dean Gent No. 1 Claim, recorded in Book 190, Pages 424 and 425, in the Recorder's Office for Moffat County, Colorado.

IN WITNESS WHEREOF, the undersigned has set his hand this 24th day of January, 1958.

Witness

Jerry Phillips

STATE OF COLORADO)
) SS
COUNTY OF MESA)

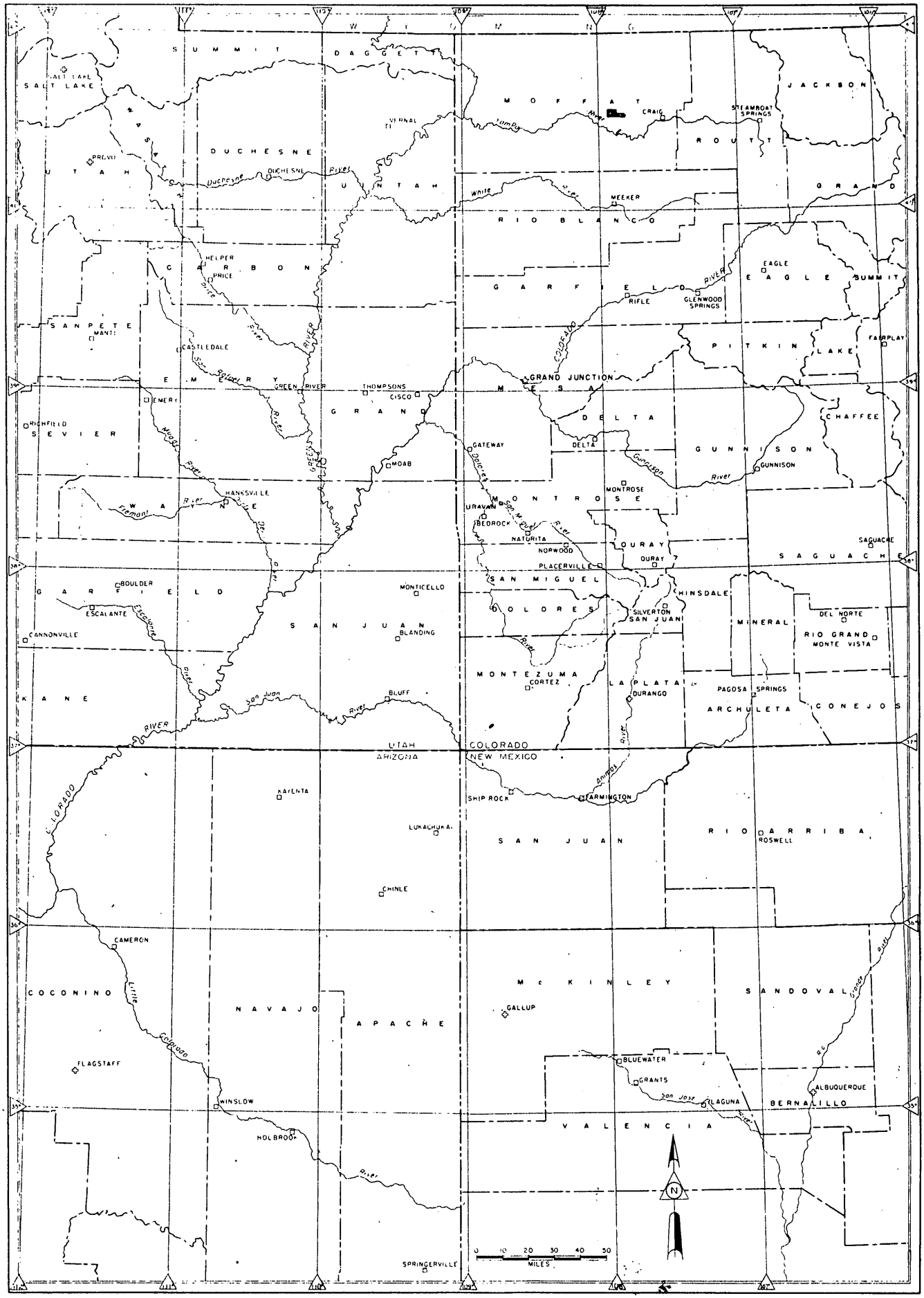
The foregoing instrument was acknowledged before me this 24th day of January, A.D. 1958 by Jerry Phillips of Palisade, Colorado, the signer of the foregoing assignment, who duly acknowledged to me that he executed the same.

My Commission Expires:

11-12-60

Notary Public

Residing at Grand Junction, Colo.



Maybell District

No. 1 INDEX MAP

Krouse
Ellis

June 10, 1958

DOCKET COPY

Summary of Proposed Project

Object: Denial of application for an exploration project.

Docket No.: DMEA-4929

Commodity: Uranium

Applicant: Lewis H. Larsen and Jerry Phillips, a Joint Venture
259 - 7th Avenue
Salt Lake City, Utah

Property: 48 unpatented lode mining claims, T & L Nos. 1-15, Orr Nos. 1-8 and 11-33, George Polk No. 1, and Dean Gent No. 1, situated in secs. 17, 18, 19, 20, and 21, T. 7 N., R. 95 W., 6th P.M. & B., Moffat County, Colorado.

The claims were leased by Jerry Phillips who assigned an individed one-half interest to Lewis H. Larsen.

Date of application: January 25, 1958

Amount of application: $80,676.30

Processing data:
Referred to Region III - March 14, 1958
Date of field examination - April 8, 1958
Field Team report received - May 19, 1958

Work Proposed: Explore the Brown's Park formation by non-core rotary drilling in three stages as follows:

Stage I - Consists of 153 holes on 400-foot centers in fences 600 feet apart. Drilling depth estimated to be from 100 to 200 feet; one out of each 12 holes would be drilled to a depth of 500 feet (12 holes 500 ft. deep).

Stage II - Consists of 76 holes to search for ore deposits in favorable ground found during Stage I.

Stage III - Consists of 76 additional holes to offset ore and mineralized holes.

Estimated Cost

Stage I

Independent Contracts

24,480 ft. non-core drilling @ $0.80/ft.	$19,584.00	
3,600 ft. non-core drilling @ $1.00/ft.	3,600.00	
152 hrs. standby time @ $12/hr.	1,824.00	
70 hrs. bulldozing @ $12/hr.	840.00	
1,530 chemical assays @ $3.50	5,355.00	$31,203.00

Labor, Supervision, Consultants

Geologist @ $650/mo.	$1,950.00	
Consultant - 1 week/mo. @ $400	1,200.00	
Expenses - 40 days month @ $5/day	600.00	3,750.00

Operating Materials and Supplies

Fuel - 1/2-ton truck @ $75/mo.	$225.00	
50 core and sand boxes @ $5/each	250.00	
Misc. drafting, office & Engr. supplies	150.00	625.00

Operating Equipment

1 - 1/2-ton pickup truck @ $150/mo.	$450.00	
1 - Babbel counter @ $62.50/mo.	187.50	637.50

Miscellaneous

Accounting @ $100/mo.	$300.00	
P.R. Taxes & Ins. @ 6.38% of $3,150.00	201.00	501.00

Contingencies 10%	3,671.65
Estimated Total Cost Stage I	$40,388.15

Stage II

Independent Contracts

12,240 ft. non-core drilling @ $0.80	$9,792.00	
1,800 ft. non-core drilling @ $1.00/ft.	1,800.00	
76 hrs. standby time @ $12/hr.	912.00	
35 hrs. bulldozing @ $12/hr.	420.00	
765 chemical assays @ $3.50	2,677.50	$15,601.50

Labor, Supervision, Consultants - 6 weeks	1,875.00
Operating Materials and Supplies	312.50
Operating Equipment	318.75
Miscellaneous	250.50
Contingencies (Appr. 10% of total)	1,835.82
Estimated Total Cost Stage II	$20,194.07

Stage III

Independent Contracts

12,240 ft. non-core drilling @ $0.80	$9,792.00	
1,800 ft. non-core drilling @ $1.00/ft.	1,800.00	
76 hrs. standby time @ $12/hr.	912.00	
35 hrs. bulldozing @ $12/hr.	420.00	
765 chemical assays @ $3.50	2,677.50	$15,601.50
Labor, Supervision, Consultants - 6 weeks		1,875.00
Operating Materials and Supplies		312.50
Operating Equipment		318.75
Miscellaneous		250.50
Contingencies		1,835.82
Estimated Total Cost Stage III		$20,194.07
Estimated Total Cost of the Project		$80,676.29
Government Participation @ 50%		$40,338.15

Field Team Report, dated May 12, 1958,
By D. P. Elton, USGS, and M. H. Howes, USBM

The claims are near the southern margin of the Sand Wash Basin of northwestern Colorado and are located on gentle to moderately steep slopes developed on the Browns Park formation of Miocene or Pliocene age. The Browns Park formation is estimated to be 1,800 feet thick in places, ranges from 900 to 1200 feet thick where penetrated by drill holes 3-1/2 miles east of the claims. Possibly the thickness of the formation in the claim areas is as much as 900 to 1,000 feet thick, but because of the configuration of the lower contact (marked unconformity), this thickness may be excessive by 400 to 500 feet.

Significant uranium deposits in the area occur in rock which are basin-like syncline in the Browns Park formation. Individual deposits range in size from less than 1,000 tons to more than 200,000 tons. Each deposit consists of numerous multiple-horizon lenticular ore bodies which are spaced sufficiently close to constitute minable ore. These deposits are located 3-1/2 to 4 miles east of the property. Mining in large open pits is in progress and the grade of the ore being produced is about 0.18% U_3O_8. Ore minerals are uranophane and meta-autunite. Workings on the claims consist of small cuts, 3 large open cuts and 13 rotary drill holes.

There are no known commercial uranium deposits on the property. Significant anomalous radioactivity is

present at the outcrops in at least two places, but the occurrences are small, the distribution is erratic in stratigraphic position, and the rocks in detail are highly variable in radioactivity. One selected sample collected by the examining team from the central part of the claim group contained 0.13% U_3O_8. The exploratory cuts are generally unremitting. Cuts 1 and 2 are in alluvium, about 25 feet thick, but did not expose bedrock. Cut 3, about 15 feet deep, is in bedrock. No anomalous radioactivity was noted in these exposures with a scintillation instrument.

The thick, strongly to weakly mineralized intervals reported by the Applicant in the exploratory holes drilled may not actually exist. A field check of hole No. 9, collared in alluvium that is in excess of 15 feet thick, was made in a closely adjacent discovery cut. The Applicant reported 0.10 to 0.14% eU_3O_8 for the upper 15 feet of the hole but a field scintillation counter showed no anomalous radioactivity in the alluvium. It is possible that radon accumulated in the hole prior to logging.

Commercial low-grade deposits occur in the upper part of the formation (Browns Park) and the nearest of these is 3-1/2 miles. Exposures are poor and there are no stratigraphic markers which indicate that the upper part of the formation exists on the property.

Because of a lack of basic stratigraphic control, and because the Applicant's probe results are suspect, the examining geologist recommends denial of the application without prejudice.

The examining engineer is of the opinion that the property warrants exploration, based on the presence of sufficiently favorable showings.

Commodity Members' Comments:

U. S. Geological Survey, W. P. Williams, dated May 27, 1958.

The examining geologist states: "Because of a lack of basic stratigraphic control, and because the applicant's radiometric probe results are suspect, the examining geologist recommends that the application be denied without prejudice." After studying the examining geologist's report, I find myself in agreement with his recommendations.

U. S. Bureau of Mines, James Paone, dated May 22, 1958.

In view of the low uranium content of the target ore bodies, I am inclined to recommend denial without prejudice; however, the Field Team feels that a moderate program is justified.

Division of Rare and Miscellaneous Metals,
F. L. Knouse, June 10, 1958.

Since there is good basis to doubt that the upper part of the Browns Park formation exists on the property (in which significant uranium deposits occur in the area), and also as the probing results reported by the Applicant are suspect, the application should be denied without prejudice. If further work proves the existence of the ore-bearing horizon on the property, then the findings should be considered for an exploration project.

Conclusions:

A review of all our information indicates that the horizon in which significant uranium deposits occur in the area may not be present on the property, also, that the mineralized sections reported in the exploratory drill holes is suspect. Therefore, the application should be denied without prejudice.

Ernest Wm. Ellis

Ernest Wm. Ellis

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

REGION III

OFFICE OF
REGIONAL DIRECTOR

224 NEW CUSTOM HOUSE
DENVER 2, COLORADO

July 21, 1958

RECEIVED JUL 24 1958

DATE	INITIALS	CODE
7/24	N.G.	225
		~~100~~
		225

Memorandum

To: Marling J. Ambony, Director

From: Regional Director, Region III

Subject: Disclosure of DMEA Field Team Recommendations

Reference is made to the letter signed by T. H. Miller, Acting Director, dated June 24, subject: Disclosure of DMEA Field Team Recommendations, and to a memorandum from Frank D. Lamb of the same date relative to an alleged conversation of Marvin H. Howes, Mining Engineer on DMEA work, concerning DMEA Docket 4929.

Attached is a photostat of a reply from Mr. Howes to the allegations. You will note that he emphatically denies disclosure of any recommendations to the applicant of DMEA Docket 4929.

Engineers concerned with DMEA work have been cautioned repeatedly not to make any disclosures under any circumstances.

Original signed by
J. H. EAST, Jr.

J. H. East, Jr.

Attachment

cc: Frank D. Lamb w/att
C. O. Mittendorf w/att
J. B. Clemmer

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 24 1958

DATE	INITIALS	CODE

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION III

INTERMOUNTAIN
EXPERIMENT STATION

1600 EAST 1ST SOUTH STREET
SALT LAKE CITY, UTAH

July 11, 1958

Memorandum

To: J. H. East, Jr., Regional Director, Region III
Through: J. Bruce Clemmer

From: M. H. Howes

Subject: Disclosure of DMEA Field Team recommendations

I most emphatically deny disclosure of recommendations made by myself and the Geological Survey representative regarding a recent field examination under Docket No. DMEA-4929 (Uranium), Louis H. Larsen and Jerry Phillips (Orr, et al claims), Moffatt County, Colorado, to Mr. Larsen or to anyone else outside of official Government channels.

According to the reported telephone conversation between C. O. Mittendorf and Louis H. Larsen, I was supposed to have told Mr. Larsen that both the Bureau and the Survey had approved his application. Quoting from the Joint Engineering and Geologic Report of Examination, section on Conclusions and Recommendations:

"Because of lack of basic stratigraphic control, and because the applicant's radiometric probe results are suspect, the examining geologist recommends that the application be denied without prejudice.

"The examining engineer is of the opinion that the property warrants exploration, based on the presence of sufficient favorable showings."

It is not likely that I would have told the applicant that both the Bureau and Survey had approved the application when the examining geologist had stated a recommendation of denial. Mr. Larsen may have interpreted my questions and remarks during the examination as showing enthusiasm and favor for the possibilities of discovery of important uranium deposits. No mention was made of recommendations.

M. H. Howes

M. H. Howes

cc: J. B. Clemmer

Excerpt from Mr. Mittendorf's diary, 6/18/58:

Frank Speaker dropped in unannounced and wanted to know what progress was being made on the Lewis Larsen case, DMEA 4929. I told him Larsen had phoned me only last Monday and at that time I told him the case was recommended for denial, and that it was scheduled to go through the Operating Committee Monday afternoon and the final determination would not be known until they had acted upon the case.

Speaker was very much disappointed. He said Union Carbide had submitted a proposal to lease the land because their ore on the adjoining ground is going into Larsen's ground. He implied that we had turned down another good bet.

I asked him what interest he had in the case. He said he had invested some of his own money. He was afraid that if our denial were made known to Union Carbide they would drive a very hard deal with Larsen. I told him that Union Carbide would not learn of our action - at least, not through this office.

Excerpt from Mr. Mittendorf's diary, 6/16/58:

Lewis Larsen called from Salt Lake in regard to DMEA-4929, Lewis H. Larsen and Jerry Phillips. This is the case that Frank Speaker inquired about a week or so ago. I had discussed it with Cap and knew that a denial was in the offing. I told Larsen that the case would come before the Committee today and a recommendation for denial would be proposed.

He was quite surprised - perhaps a little shocked. He said he was talking with Howes, Bureau of Mines engineer in Salt Lake, this morning. Howes told him he was the examining engineer and he recommended approval. He also told him that the Survey representative recommended denial. He said Harshman recommended approval on a modified basis.

I explained that the field team and its representatives serve only as consultants and that final decision rests with Washington.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/16/58	Knouse	700
6/16	Selbredge	130
"	Jackson	110
"	Mittendorf	100
		220
		225
6/16	Lamb	130
6/16	Kilsgaard	213

JUN 16 1958

Mr. Lewis H. Larsen, Co-Associate
Lewis H. Larsen and Jerry Phillips
259 - 7th Avenue
Salt Lake City, Utah

Re: Docket No. DMEA-4929 (Uranium)
Orr, et al., Claims
Moffat County, Colorado

Dear Mr. Larsen:

Your application for aid in an exploration project and other information available to us in Washington concerning your above-named property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting some uranium mineralization on your property, indicates that the probability of disclosing significant ore reserves is not sufficiently promising to justify Government participation. We regret to advise you that, under these circumstances, your application for exploration assistance is denied. Such denial, however, is made without prejudice.

Under the new policy announced on June 6, copy enclosed, funds to finance new mineral and metal exploration contracts will not be available after June 30. However, if proposed new legislation is enacted, new applications will be processed under the rules and regulations that would be established. Therefore, if further work on your part discloses new and more favorable evidence of ore deposition on your property, we shall be pleased to consider a new application.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FLKnouse/gla
(6-10-58) 6-16-58
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
FLKnouse
DMEA Field Team, Region III (2)
Enclosure

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/10/58	Knouse	700
"	[illegible]	700
6/13	Selfridge	130
		110
		100
		220
		225
6/13	Lamb	130
6/13	Kilgaard	330

Mr. Lewis H. Larsen, Co-Associate
Lewis H. Larsen and Jerry Phillips
259 - 7th Avenue
Salt Lake City, Utah

Re: Docket No. DMEA-4929 (Uranium)
Orr, et al., Claims
Moffat County, Colorado

Dear Mr. Larsen:

Your application for aid in an exploration project and other information available to us in Washington concerning your above-named property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting some uranium mineralization on your property, indicates that the probability of disclosing significant ore reserves is not sufficiently promising to justify Government participation. We regret to advise you that, under these circumstances, your application for exploration assistance is denied. Such denial, however, is made without prejudice. In the event further work on your part discloses new and more favorable evidence of ore deposition on the property, we shall be pleased to consider a new application.

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

Sincerely yours,

Administrator

FLKnouse/gla 6-10-58
cc to: Admr.'s Reading File
Operating Committee
Mr. Knouse
Mr. Ching
THKiilsgaard, 5224
DMEA Field Team, Region III (2)

8623

OFFICIAL FILE COPY
DMEA
IN REPLY REFER TO:
RECEIVED MAY 28 1958
DATE CODE
5/28 C 220
11 MC 700
Complete

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

May 27, 1958

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: W. P. Williams, U. S. Geological Survey

Subject: Review of Field Examination Report, DMEA 4929 (Uranium) L. H. Larsen and Jerry Phillips, Orr et al Claims, Moffat County, Colorado

The examining team report that the applicants' property may have potentialities for large low-grade uranium ore deposits. Individual deposits in the vicinity range in size from less than 1,000 tons to more than 200,000 tons. Indicated and inferred ore reserves estimated by the AEC for the Maybell area are 480,000 short tons averaging 0.16% U_3O_8.

It is well established that although the ore deposits are large they are low grade. Locally within ore bodies the uranium content is as much as 0.30 to 0.70% U_3O_8. High grade deposits of that nature, however, are scattered and of local extent. Ore reserves which may exist on the applicants' property are likely to be in the 0.13 to 0.18% U_3O_8 range.

The field examiners point out that favorability for ore deposits in the vicinity depends a great deal upon the thickness of the Browns Park formation. Favorability of the Browns Park formation varies directly as its thickness. Although the applicants have done some shallow drilling on their property, they apparently have not established the thickness of the Borwns Park. The objection might be raised then that the preliminary drilling in an exploration project might have as its objective a search for basic geologic information rather than ore deposits.

The examining geologist states on Page 18, "Because of a lack of basic stratigraphic control, and because the applicant's radiometric probe results are suspect, the examining geologist recommends that the application be denied without prejudice." After studying the examining geologist's report, I find myself in agreement with his recommendations for denial of the application without prejudice.

N. S. Nelson
for W. P. Williams

RECEIVED MAY 22 1958		
DATE	INITIALS	CODE
5/22	C	220
23	Chmy	700

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

Date May 22, 1958

DMEA Docket No. 4929
DMEA Contract No.
Commodity Uranium
Name of applicant L. H. Larsen and Jerry Phillips
Name of property Orr et al group of claims
Location of property Moffat County, Colo.
Estimated cost of project

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: James Paoletti, Bureau of Mines Member
Uranium Commodity Committee

Subject: Review of Field Team Report
(Application, Field Team Report, etc.)

1. Date of subject document: 5/15/58. 2. Date received by reviewer: 5/21/58

3. Prior reports on this property known to reviewer: Yes ☐ No ☐

4. Prior reports on nearby properties known to reviewer: Yes ☐ No ☐

5. Information available on past production: Yes ☐ No ☐

6. Other pertinent factors known to reviewer: Yes ☐ No ☐

7. Explain items marked yes above:

8. Factors needing special consideration:
   a. Location ☐
   b. Ownership ☐
   c. Evidence of mineralization ☐
   d. Geology ☐
   e. Proposed exploration method ☐
   f. Alternate exploration method ☐
   g. Costs ☐
   h. _____ ☐

9. Action advised:
   a. Obtain information from applicant ☐
   b. Refer to Field Team ☐
   c. Denial ☐
   d. Agree with Field Team ☐
   e. Disagree with Field Team ☐
   f. Suggest alternate plan ☐
   g. Request another examination ☐
   h. Approval ☐
   i. Consult with Mr. _____ at _____ AEC office.

10. Remarks: (Use back of page if necessary) In view of the low uranium content of the target orebodies, I am inclined to recommedn denial without prejudice; however the field team feels that a moderate program is justified.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado
May 15, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 19 1958

DATE		
5/19	C	220
5/21	HB	130
5/21	C	220
5/22	Chrg	700

Memorandum

To: Secretary to the Operating Committee

From: Field Team, Region III

Subject: Docket No. DMEA 4929 (Uranium) L. H. Larsen and Jerry Phillips (Orr et al group of claims) Moffat County, Colorado - Report of Examination

Enclosed are the original and two copies of a Joint Report of Examination by the field examiners and Appendix A showing the proposed exploration program and cost estimate recommended by the Field Team.

The rough draft of the report, as submitted to the Field Team, contained a recommendation for denial without prejudice and two cost estimates on a program of exploration proposed by the examiners for consideration by DMEA. With approval of the examiners, the report was revised by removing the exploration program and two cost estimates from the body of the report, reconciling the two cost estimates, and including a suggested exploration program and cost estimate in an Appendix to the denial report.

We are fully aware that Stage I of the program, outlined in the Appendix, may be considered as prospecting. In spite of this fact we believe that the low grade ore potential of the area is sufficiently great to justify the modest program of exploration outlined in the Appendix and recommend participation of DMEA in that program.

Enclosed are eight extra copies of Figure 4 for use in preparing the contract.

packet

E. N. Harshman

E. N. Harshman

Reviewed by
DMEA OPERATING COMMITTEE
5-21-58
(date)

J. W. Townsend

J. W. Townsend
Acting Member

EXHIBIT

MINERAL DEPOSITS
DMEA
RECEIVED
MAY 8 1958

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 360
Grand Junction, Colorado

U. S. GEOLOGICAL SURVEY
DENVER, COLORADO
CENTRAL FILE COPY
DMEA
RECEIVED MAY 19 1958

DATE	INITIALS	CODE
5/21	2/B	730
		220

May 6, 1958

Memorandum

To: Acting Executive Officer, DMEA Field Team, Region III

From: J. William Hasler

Subject: Transmittal of a joint geologic and engineering report of examination on DMEA Docket 4929 (Uranium), L. H. Larsen and Jerry Phillips, Orr, et al. group of claims, Moffat County, Colorado.

Transmitted herewith is a rough draft of a joint report of examination on DMEA docket 4929 (Uranium), L. H. Larsen and Jerry Phillips, Orr, et al. group of claims, Moffat County, Colorado, by D. P. Elston, U. S. Geological Survey and M. H. Howes, U. S. Bureau of Mines.

Lewis H. Larsen and Jerry Phillips, a joint venture, applied to the Defense Minerals Exploration Administration on January 25, 1958 for aid in exploration drilling for uranium on the Orr, et al. group of claims. The property consists of 48 unpatented mining claims in parts of section 17, 18, 19, 20, and 21, T. 7 N., R. 95 W., 6th P.M., 2 to 3 miles north of the town of Maybell, Moffat County, Colorado. The application was referred to the field and an examination was made on April 8, 1958 by J. W. Hasler and D. P. Elston, U. S. Geological Survey and M. H. Howes, U. S. Bureau of Mines. The examining team was accompanied by Mr. Lewis H. Larsen and Mr. Jerry Phillips, applicants, and Mr. Elmer Trevenen, part owner of the property.

Low grade uranium deposits occur in the Browns Park formation of Miocene age. The Browns Park formation is deposited in an east-west trough cutting folded and faulted Paleozoic and Mesozoic strata, and is about 1000-1200 feet thick, about 5 miles northwest of Maybell, Colorado. Significant uranium deposits mostly low-grade but in part of moderate grade have been discovered in the upper 270 feet of Browns Park formation about 3-1/3 miles east of the subject claims. Minor low grade uranium deposits have been penetrated by the drill stratigraphically beneath this, both in the dominant sandstone rock type of Browns Park formation and in the basal conglomerate. These latter deposits are widespread but are not considered to be economically profitable deposits.

TRANSMITTED

MAY 15 1958

Reviewed by
DMEA OPERATING COMMITTEE

5-21-58
(date)

The applicant explored the area with several shallow bulldozer cuts and a number of diamond drill holes. The results of the applicant's radiometric probing of the non-core holes are suspect; there are no chemical assay data of the cuttings to verify the radiometric value reported by the applicant. The operator reported 0.10 to 0.14 percent eU_3O_8 for the upper 15 feet of hole no. 9, but a field scintillation counter showed no anomalous radioactivity in the hole. In addition, the character of the anomalous radioactivity penetrated by the "ore" holes as reported by the applicant allows 2 alternative interpretations: 1) there are several mineralized layers in part ore grade which aggregate an uncommonly great thickness, or 2) the radiometric data are too high by a factor of about two. The latter, the "ore" and weakly mineralized rock reduced accordingly would better fit the average production rate of reserves discovered to the east, of 0.13 and 0.16 percent U_3O_8, and would better fit the field relations of the radiometric data although erratic are generally lower than the chemical assay data.

An unknown factor related to the potential of the claims is the overall thickness of the Browns Park formation on the property. If thin, on the order of about 700 feet or less, mineralized rock exposed on the claims penetrated by the drill probably would be in an equally mineralized interval that has not been found to be productive. If the Browns Park formation is thick, on the order of 700 to 1000 feet or more, there is a reasonable possibility that significant deposits may exist on the claims.

The individual deposits in the Maybell area range in size from less than 1000 tons or more to more than 200,000 tons. The largest is about 1500 feet in length and 500 feet in width. Each deposit consists of numerous multiple horizons of lenticular ore bodies which are spaced sufficiently close to constitute minable ore. Thickness of the individual ore bodies range from about 3 to 25 feet.

The average depth to the ore is about 100 feet but some deposits are 270 feet deep. The economic deposits are surrounded by large amounts of low-grade material with assays of 0.04 to 0.09 percent U_3O_8. On the subject claims the rock penetrated by the drill to depths as great as 150 feet is mostly oxidized and only minor beds of gray rock were penetrated according to the applicant.

Minable indicated and inferred ore reserves estimated by the A.E.C. for the Maybell area are 480,000 short tons averaging 0.16 percent U_3O_8. Trace Elements Corporation, a division of Union Carbide Nuclear Corporation, is the major producing company in the area. Company reserves are in excess of 1,000,000 tons containing 0.13 percent U_3O_8. The somewhat lower grade estimate is a result of including larger blocks of weakly mineralized rock containing 0.09 and 0.03 percent U_3O_8 with mineralized rock containing 0.10 percent or more U_3O_8. Mining in large open pits is in progress and the grade of ore which is being produced is about 0.18 percent U_3O_8.

It is well established that although the deposits are large they are low grade. Locally within ore bodies the uranium content is as much as 0.30 to 0.70 percent U_3O_8 but such high grade occurrences are erratic and of local extent. Minable reserves which may exist on the subject property likely will be in the 0.13 to 0.18 percent U_3O_8 range. The chance that reserves are present on the Orr claims that would average 0.22 percent or more U_3O_8 and thus acceptable to the Trace Elements Corporation mill, are not good.

Because of the lack of basic geologic data which includes an apparent high eU_3O_8 pattern which is unsupported by chemical assay and an unknown thickness of the Browns Park formation, the examining geologists recommend that the application be denied without prejudice; however, the examining engineer does not concur.

However, in view of the potential large low grade ore reserves that may be present on the property a tentative exploration program has been designed to test the potential of the ground, and if results are favorable, to explore for significant uranium deposits. The proposed drilling has been limited generally to the part of the property on which apparently the thickest section of the Browns Park formation may exist.

I concur with the conclusions and recommendations of the examining geologist that the application be denied without prejudice; however, the alternate program as suggested by the examining geologist may be considered as a test for the potential of the particular area under consideration.

The Atomic Energy Commission was consulted relative to the merits of the property.

Enclosed are ten copies each of 4 figures for inclusion in the completed report of examination as well as 11 additional copies of figure 4, that of the Orr et al. claims, showing proposed DMEA Stage I drill holes, Larsen & Phillips property, Moffat County, Colorado, for inclusion in a possible contract. Enclosed also is the applicant's brochure. The joint report is being transmitted in rough draft form because of the differences in calculation of costs due to additional items that should be included in a possible contract as well as the element of time that would be involved in an extended review by both the U.S.G.S. and U.S.B.M.

J. William Hasler

J. William Hasler,
Geologist

JWH/bh
Enclosures

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UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

JOINT REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

DMEA
DEPARTMENT OF THE INTERIOR
MAY 13 1958
REGION III
DENVER, COLORADO

DMEA 4929

TRANSMITTED
MAY 15 1958

L. H. Larsen and Jerry Phillips

Orr, et al., group of claims

Moffat County, Colorado

Uranium

Joint Engineering and Geologic Report

by

D. P. Elston, Geologist
Geological Survey

M. H. Howes, Mining Engineer
Bureau of Mines

May 12, 1958

Reviewed by
DMEA OPERATING COMMITTEE
5-21-58
(date)

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DMEA 4929

L. H. LARSEN AND JERRY PHILLIPS
ORR, et al., GROUP OF CLAIMS
MOFFAT COUNTY, COLORADO

INTRODUCTION AND SUMMARY

Lewis H. Larsen, 259 7th Avenue, Salt Lake City, Utah, and Jerry Phillips, Palisade, Colorado, a joint venture, applied to the Defense Minerals Exploration Administration on January 25, 1958, for aid in exploration drilling for uranium on the Orr, et al., group of claims. The property consists of 48 unpatented mining claims in parts of secs. 17, 18, 19, 20 and 21, T. 7 N., R. 95 W., 6th Principal Meridian, 2 to 3 miles north of the town of Maybell, Moffat County, Colorado (figs. 1 and 3).

The applicant proposes to explore for uranium with 305 non-core drill holes, to depths of 100-200 and 500 feet, totaling 56,160 feet of drilling at an over-all cost of $80,676.30; Government participation at 50 percent would be $40,338.15.

A field examination of the property was made April 8, 1958, by J. William Hasler and D. P. Elston, Geological Survey, and M. H. Howes, Bureau of Mines, accompanied by Lewis H. Larsen and Jerry Phillips, applicants, and Elmer Trevenen, part owner of the property.

Strata that crop out on the claims are yellowish-brown to greenish, fine- to coarse-grained, moderately well cemented to friable sandstone

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
MAY 1958
DOCKET 4929

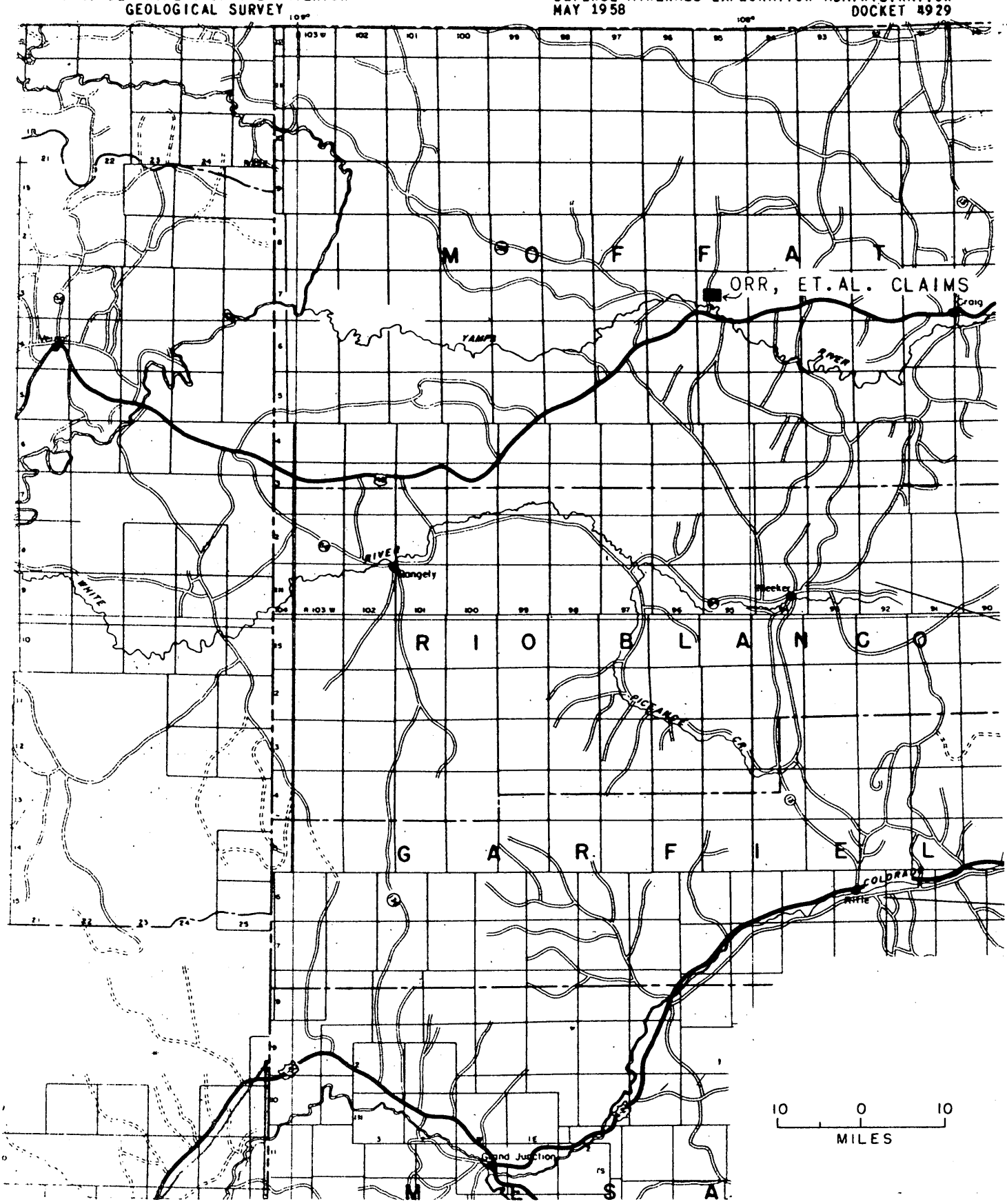

Figure 1.--INDEX MAP SHOWING LOCATION OF ORR, ET. AL. CLAIM GROUP, MOFFATT COUNTY, COLORADO.

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DATE	INITIALS	CODE

of the Browns Park formation of Miocene age. The Browns Park formation is deposited in an east-west trough cut in folded and faulted Paleozoic and Mesozoic strata, and is about 1,000 to 1,200 feet thick about 5 miles northwest of Maybell, Colorado. Except for the basal conglomerate, there is no stratigraphic marker in the formation; mudstone is minor, but in places greenish silt and clay are abundant intergranularly in the sandstone.

Significant uranium deposits, mostly low grade but in part of moderate grade, have been discovered in the upper 270 feet of the Browns Park formation about 3-1/3 miles east of the subject claims; minor low grade uranium deposits have been penetrated by the drill stratigraphically beneath this, both in the dominant sandstone rock type of the formation and in the basal conglomerate. These latter deposits are widespread but are not considered to be economically profitable deposits.

Exploration by the applicant consists of several shallow cuts, three larger cuts, two of which are in alluvium, and 13 rotary non-core drill holes. In addition there has been an unknown amount of non-core drilling in the southern part of the claims by the American Leduc Company, a company to which the property had been leased. The results of the applicant's radiometric probing of the non-core holes are suspect; there are no chemical assay data of the cuttings to verify the radiometric values reported by the applicant. A field check of hole no. 9, collared in

alluvium that is in excess of 15 feet thick, was made in a closely adjacent discovery cut; the operator reported 0.10 to 0.14 percent eU_3O_8 for the upper 15 feet of the hole but a field scintillation counter showed no anomalous radioactivity in the alluvium. In addition, the character of the anomalous radioactivity penetrated by the "ore" holes as reported by the applicant, allows two alternative interpretations: 1) there are several mineralized layers, in part ore grade, which aggregate an uncommonly great thickness; or 2) the radiometric data are too high by a factor of about two. In the latter, the "ore" and weakly mineralized rock, reduced accordingly, would fit better the average production grade of reserves to the east of 0.13 to 0.16 percent U_3O_8, and would fit better the field relations that radiometric data, although erratic, are generally lower than the chemical assay data.

An unknown factor related to the potential of the claims is the over-all thickness of the Browns Park formation on the property. If thin, on the order of about 700 feet or less, the mineralized rock exposed on the claims and penetrated by the drill, probably would be in a weakly mineralized interval that has not been found to be productive; if the Browns Park is thick, on the order of 700 to 1,000 feet or more there is a reasonable possibility that significant deposits may exist on the claims.

Because of the lack of basic geologic data, which includes apparently high eU_3O_8 values unsupported by chemical assay and an unknown thickness of the Browns Park formation, the examining geologist recommends that the application be denied without prejudice. The examining engineer however does not concur, and believes that exploration is warranted.

ACKNOWLEDGMENTS

The writers are indebted to Mr. Robert Guilinger, chief geologist for the Trace Elements Corporation (Union Carbide Nuclear Co.) operations for the Maybell area for his courtesy and the wealth of general and detailed information he supplied us. We also acknowledge the cooperation of Mr. Dan Meschter, district resource appraisal geologist for the Atomic Energy Commission, Rawlins, Wyoming, and Mr. W. C. Woodmansee from the Denver office of the Atomic Energy Commission. Reserves and, in part, ore habits and controls quoted in this report are from files of the ore reserves section, Grand Junction Operations Office of the Atomic Energy Commission and from a report entitled "Uranium Resources, Western United States, Grand Junction Operations Office, U.S.A.E.C., January 1, 1958". The cooperation of Russell C. Cutter, Grand Junction, Colorado, a geologist familiar with exploration in the Maybell area, is also acknowledged.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The property lies on the gently rolling slope immediately north of the Yampa River and about 2 miles north of Maybell, Moffat County, Colorado. Altitudes vary from a low of 6,000 feet to a high of 6,300 feet on the claims. Below the property the altitude of the Yampa River is approximately 5,890 feet. Three large draws running southerly to the river comprise the principal drainage system through the property.

The climate is semiarid and similar to much of the Rocky Mountain Region. Annual precipitation for an average of several years is about 12 inches. Temperatures are generally moderate, reaching a maximum of not much over 90° F. in summer and a minimum of approximately -40° F., in winter, with an average mean of about 42° F.

Vegetation is limited to desert plants with sagebrush predominating.

HISTORY AND PRODUCTION

Prospecting in the district started in 1954 after investigations, successful in discovering uranium, had been made in the Browns Park formation in Poison Basin and Miller Hill areas of southern Wyoming. The Trace Elements Associates commenced their exploratory and development program in the Maybell-Lay district in 1954. Trevenen and Littleton

also did their first work that year. During the summer of 1955 the American Leduc Company did a limited amount of drilling on the southwest part of the Trevenen-Littleton property. These drilling records are not available. In 1956 Jerry Phillips obtained leases on the claims and drilled 13 holes, all of which showed radioactivity. A half interest in the leases was assigned to Lewis H. Larsen January 24, 1958.

OWNERSHIP AND EXTENT

The property, consisting of 48 unpatented lode-mining claims, is owned by Elmer Trevenen and Kennis A. Littleton and associates of Maybell, Colorado. The claims are held under leases dated July 5, 1956, November 15, 1956, and January 21, 1958, and lease amendments dated February 17, 1958, and March 7, 1958, by Jerry Phillips, Palisade, Colorado. On January 24, 1958, Jerry Phillips assigned one-half undivided interest in the above leases to Lewis H. Larsen, 259 7th Avenue, Salt Lake City, Utah.

The 48 claims, located in secs. 17, 18, 19, 20, and 21, T. 7 N., R. 95 W., 6th Principal Meridian in Colorado, are recorded in the books of the County Recorder at the Moffat County courthouse, Craig, Colorado, and are listed as follows:

Claim Name	Date of Record	Book	Page
T & L No. 1	November 15, 1956	235	323
" No. 2	" "	"	324
" No. 3	" "	"	325
" No. 4	" "	"	326
" No. 5	" "	"	327
" No. 6	" "	"	328
" No. 7	" "	"	329
" No. 8	" "	"	330
" No. 9	" "	"	331
" No. 10	" "	"	332
" No. 11	" "	"	333
" No. 12	" "	"	334
" No. 13	" "	"	335
" No. 14	" "	"	336
" No. 15	December 5, 1956	236	442
Orr No. 1	July 1, 1955	208	284-285
" No. 2	" "	"	286-287
" No. 3	" "	"	288-289
" No. 4	" "	"	290-291
" No. 5	" "	"	292-293
" No. 6	" "	"	294-295
" No. 7	" "	"	296-297
" No. 8	" "	"	298-299
" No. 9 *	" "	"	300-301
" No. 10 *	" "	"	302-303
" No. 11	" "	"	304-305
" No. 12	" "	"	306-307
" No. 13	" "	"	308-309
" No. 14	" "	"	310-311
" No. 15	" "	"	312-313
" No. 16	" "	"	314-315
" No. 17	" "	"	316-317
" No. 18	" "	"	318-319
" No. 19	" "	"	320-321
" No. 20	" "	"	322-323

* Note: Claims Orr Nos. 9 and 10 were dropped as they were on State ground.

Claim Name	Date of Record	Book	Page
Orr No. 21	July 1, 1955	208	324-325
" No. 22	" "	"	326-327
" No. 23	" "	"	328-329
" No. 24	" "	"	330-331
" No. 25	" "	"	332-333
" No. 26	" "	"	334-335
" No. 27	" "	"	336-337
" No. 28	" "	"	338-339
" No. 29	" "	"	340-341
" No. 30	" "	"	342-343
" No. 31	" "	"	344-345
" No. 26 Amended	July 12, 1955	209	314-315
" No. 27 Amended	" "	"	316-317
" No. 32	" "	"	318-319
" No. 33	" "	"	320-321
George Polk No. 1	July 7, 1955	190	424
Dean Gent No. 1	" "	"	425

PRESENT STATUS

Much of the property is presently accessible by dirt roads, which connect with U. S. Highway 40. Most parts of the claims can be reached with a limited amount of additional road construction.

Workings on the claims consist of several small location pits or shafts, 3 large opencuts, and 13 rotary drill holes. There are no buildings, structures, or pieces of mining equipment on the property.

Water is readily available from the Yampa River, which is less than a mile south of the claims.

Mine labor can be obtained and housed locally. Craig and Grand Junction, Colorado, are sources for mining supplies and equipment, as

are Denver and Salt Lake City. Several firms of drilling contractors are located in Grand Junction.

GEOLOGY

General: The subject claims are near the southern margin of the Sand Wash Basin of northwestern Colorado and are located on gentle to moderately steep slopes developed on the Browns Park formation of Miocene or Pliocene age. Recent faunal collections from the Browns Park formation may indicate a lower and middle Miocene age (Carey, 1955). The geology of part of Moffat County, Colorado, is shown and discussed by J. D. Sears (1924). The Browns Park formation is discussed in a recent review by B. D. Carey (1955).

Stratigraphy: The Browns Park formation is a yellowish, yellowish-green, grayish, and white, fine- to coarse-grained quartzose sandstone. It locally is well sorted but generally is fair- to poorly sorted. Where cemented by carbonate locally, it is somewhat resistent to weathering; much of the sandstone, particularly at and near the surface is friable. The Browns Park is separated into two units. The lower unit is a basal conglomerate of variable thickness which contains Precambrian cobbles. Where penetrated by the drill about 3-1/2 miles east of the property the basal unit ranges from about 60 to as much as 200 feet in thickness. Broadly, the upper unit is composed of beds of sandstone, tuffaceous

sandstone, thin beds of chert and a few beds of vitric tuff and fresh water limestone. In the general area of the claims, the Browns Park is dominantly a clean to locally argillaceous sandstone that in places contains a few thin beds of greenish mudstone, and probably is in part tuffaceous.

Bedding ranges from irregular and indistinct to crossbedded. Crossbeds a few feet in length are common, however, some crossbedding is on a large scale as shown in recently developed large open pit mines in the district. The most pronounced are large, parallel-bedded fore-set (?) crossbeds which extend hundreds of feet and dip as much as 22 to 24 degrees. Such beds, poorly exposed on the outcrop, can present an erroneous picture as to the true attitude of the formation.

The Browns Park formation, estimated to be about 1,800 feet thick in places (Powell, 1876), ranges from about 900 to 1,200 feet thick where penetrated by the drill about 3-1/2 miles east of the claims. Perhaps only one-half of this thickness is present in the drainage of Spring Creek about 1 mile east of the claims (fig. 3). The topography, however, rises westward into the claim area so that a part of the claims may be underlain by sections of the Browns Park formation possibly as much as 900 to 1,000 feet thick. This estimate, made without the benefit of information as to the configuration of the lower contact which is a marked unconformity, may be excessive by 400 to 500 feet.

Structure: The Browns Park formation was deposited unconformably on faulted and folded Paleozoic and Mesozoic strata. The formation in the Maybell area crops out in an east-west belt (fig. 2), which generally marks a former trough cut in the older strata. Beds of the Browns Park in general dip gently toward the center of the trough (fig. 3) giving rise to the "Lay syncline" that is mentioned in various unpublished reports on the area and is shown as an unnamed syncline (fig. 2) on a preliminary tectonic map of northern Colorado (Osterwald, F. W., and Dean, B. G., 1957).

In general the Browns Park formation on the claims is characterized by gentle dips, but because of crossbedding the true attitudes are difficult to determine. It seems likely that the approximate westerly trace of the axis of the Lay "syncline" may lie in the southern part of the claims (fig. 3).

No faults are known on the claims, however, because the beds are poorly exposed and because of the lack of stratigraphic markers, unrecognized faults may be present as they are in Browns Park beds about 4 miles to the east.

ORE DEPOSITS

General: Deposits of uranium in the Washakie Basin of southwestern Wyoming and northwestern Colorado, which includes Poison Basin and Sand Wash Basin, occur in the Ericson formation of Cretaceous age, the Wasatch

formation of Eocene age, and the Browns Park and North Park formations of Miocene and Pliocene age. Of these, the deposits in the Browns Park formation at Maybell, Colorado, and Baggs, Wyoming (Poison Basin) are the most important. At both places the deposits are in rocks which are in a basin-like syncline.

Character of the deposits: The individual deposits in the Maybell area range in size from less than 1,000 tons to more than 200,000 tons. The largest is about 1,500 feet in length and 500 feet in width. Each deposit consists of numerous multiple-horizon, lenticular ore bodies which are spaced sufficiently close to constitute minable ore. Thickness of the individual ore bodies ranges from about 3 to 25 feet.

Many deposits are elongate along lines of faulting and some are elongate roughly parallel to the Lay "syncline". However, latest studies of the distribution of ore relative to faults and to the Lay syncline, indicate that the trend or elongation of the major deposits, 3-1/2 to 4 miles east of the subject property, transect these structures (Robert Guilinger, personal communication). Here, a northwest-southeast elongate group of deposits transect and are cut by the faults, and, in transecting the Lay "syncline", straddle the axial part with barren ground along the axis.

The average depth to ore is about 100 feet, but some deposits are 270 feet deep. The economic deposits are surrounded by large amounts of low grade material assaying in the range of 0.04 to 0.09 percent U_3O_8.

Minor deposits occur beneath the main ore horizon of the upper part of the formation. In the basal conglomerate these deposits are widespread but mostly very low grade; in the lower part of the upper unit, the deposits are small, erratic and generally low grade.

Ore minerals: In rock which has been subjected to oxidation the ore minerals are uranophane and meta-autunite; however, megascopically visible ore minerals are fairly rare and the presence of uranium is detected by radiometric or ultra-violet methods. Rock within about 30 feet of the surface is highly out of equilibrium, and although locally there is high radioactivity and low uranium content, generally there is only minor radioactivity with ore grade concentrations of ore minerals. Beneath the upper 30 feet and above the water table, the radiometric data in relation to the chemical assay data may fluctuate widely. However, according to Robert Guilinger (personal communication), the average eU_3O_8 value from a cluster of holes in an ore body will be only slightly below the average chemical analysis from cuttings for the ore body. Although the uranium minerals are water soluble there apparently has been insufficient leaching to remove the metal content of the ore bodies into the present drainage system.

Beneath the water table, the ore is dark gray to blackish and consists of uraninite and coffinite; microscopically disseminated pyrite (or marcasite) is an accessory mineral. Radiometric assay data are

considered fairly reliable for this ore although somewhat lower than chemical assays.

Only minor vanadium has been reported from the ore; in addition, the A.E.C. classes the ore as "low lime", that is, less than about 6 percent $CaCO_3$.

On the subject claims the rock penetrated by the drill, to depths as great as 150 feet, is mostly oxidized and only minor beds of "gray rock" (unoxidized) were penetrated according to the applicant.

Reserves, potential, and grade of mineralized rock: Minable indicated and inferred ore reserves estimated by the A.E.C. for the Maybell area are 480,000 short tons averaging 0.16 percent U_3O_8. Short range potential (5 years) is 1,800,000 tons to which is added an additional 2.0 to 2.5 million tons for long range potential.

Trace Elements Corporation, a division of Union Carbide Nuclear Corporation, is the major producing company in the area. Company reserve estimates are in excess of 1 million tons containing 0.13 percent U_3O_8. The somewhat lower grade estimate is the result of including large blocks of weakly mineralized rock containing between 0.09 and 0.03 percent U_3O_8 with mineralized rock containing 0.10 percent or more U_3O_8. Mining in large open pits is in progress and the grade of ore which is being produced is about 0.18 percent U_3O_8. In addition, weakly mineralized rock is also being mined and is processed through a simple water leach upgrading plant with more than 90 percent recovery.

It is well established that although the deposits are large, they are low grade. Locally, within ore bodies, the uranium content is as much as 0.30 to 0.70 percent U_3O_8 but such high grade occurrences are erratic and of local extent. Minable reserves which may exist on the subject property likely will be in the 0.13 to 0.18 percent U_3O_8 range. The chance that reserves are present on the Orr claims that would average 0.22 percent or more U_3O_8, and thus be acceptable to the Trace Elements Corporation mill, are poor.

Ore deposits on the subject claims: There are no commercial uranium deposits known on the subject claim group. Significant anomalous radioactivity is present at the outcrop in at least two places, but the occurrences are small, the distribution is erratic in stratigraphic position, and the rock in detail is highly variable in radioactivity. One sample, collected by the examining team from near the central part of the claim group contained 0.13 percent U_3O_8 by chemical assay but this sample was selected.

The exploratory cuts are generally unremitting. Cut 1 is in alluvium that is about 25 feet thick; cut 2 also is in alluvium about 25 feet thick but did intersect bedrock. Cut 3, about 15 feet deep, is in bedrock. No anomalous radioactivity was noted with a scintillation instrument in these cuts.

The thick, strongly to weakly mineralized intervals reported by the applicant as present in the exploratory holes drilled to date may

not actually exist. In part they are generally thicker and locally of higher grade than that commonly encountered in the main area of reserves. It is possible that radon accumulated in the holes prior to the in-hole logging done by the applicant.

Ore controls: According to an unpublished report (Uranium Resources, Western United States, Grand Junction Operations Office, U.S.A.E.C., January 1, 1958) ore appears to be localized in the troughs or flanks of synclines and in areas of faulting. The intersections of sedimentary trends and lines of faulting are loci of deposition. Leakage of hydrocarbons and natural gases from underlying structures up along faults into the Browns Park formation may have been a factor in the localization of the deposits. Some of the clays may have aided precipitation of the ore minerals.

Grutt (1957) postulates that the uranium deposits were formed by the intermingling of ground waters carrying uranium leached from the (tuffaceous) Browns Park formation with gases or ground waters containing hydrogen sulphide in the areas where natural gas permeated the Browns Park formation.

Robert Guilinger (personal communication) is of the opinion that intergranular clays may have been the most important localization control of ore minerals. The elongation of the deposits which transects faults and the Lay "syncline" and a positive correlation of increased resistivity of sandstones (from in-hole logs of hundreds of holes) in

and near parts of ore deposits suggests that ground waters, although locally influenced by structure, precipitated ore minerals at places of reduced transmissivity of the host rock.

Guides to ore: On the basis of the known geology of the major deposits the following features probably should be utilized if an exploration program is conducted on the subject property: 1) The Browns Park formation should be at least 700 feet thick in the area of expected major deposits. The basal conglomerate and the lower part of the upper unit are known to contain only minor deposits. 2) Places of increased intergranular silt and clay in the sandstone should be distinguished and examined for relations to mineralized rock; positive correlations probably would warrant additional testing of ground. The determination of decreased permeability can be generally determined by in-hole resistivity measurements made at the time of radiometric probing of the hole. 3) An elongation of major deposits is to be expected; if ground water conditions were similar to that in the major deposits to the east, then perhaps the trend may be northwest-southeast. 4) Faulting may be of importance in localization.

APPLICANT'S PROPOSED PROGRAM

The applicant proposes a program of exploration drilling in three stages at a total estimated cost of $80,676.30. Stage I is to

consist of 153 holes drilled on 400-foot centers in fences 600 feet apart. Drilling depth is estimated to be from 100 to 200 feet; one out of each 12 holes would be drilled to a depth of 500 feet.

Stage II consists of 76 additional holes to be used "to search for ore deposits in the favorable ground found during Stage I".

Stage III consists of an additional 76 holes to offset ore and mineralized holes.

CONCLUSIONS AND RECOMMENDATIONS

There is widespread anomalous radioactivity in the Browns Park formation in the Maybell-Lay area. Much of this radioactivity at the outcrop is in the lower to middle parts of the formation and is erratic and spotty in distribution, and generally of very low grade. Commercial low-grade deposits occur in the upper part of the formation and the nearest of these is about 3-1/2 miles east of the subject claims.

Exposures are poor and there are no stratigraphic markers which would indicate that the upper part of the Browns Park formation is present on the claims. Holes drilled on the property are shallow and do not indicate the thickness of the Browns Park formation.

Because of a lack of basic stratigraphic control, and because the applicant's radiometric probe results are suspect, the examining geologist recommends that the application be denied without prejudice.

The examining engineer is of the opinion that the property warrants exploration, based on the presence of sufficient favorable showings.

LITERATURE CITED

Carey, B. D., Jr., 1955, A review of the Browns Park formation: Guidebook to the Geology of Northwest Colorado, Intermountain Association of Petroleum Geologists and Rocky Mountain Association of Geologists.

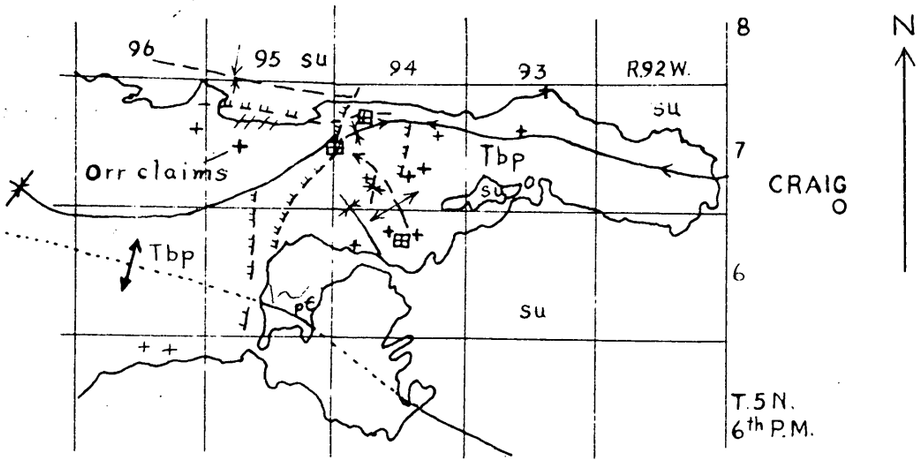
Grutt, E. W., Jr., 1957, Environment of some Wyoming uranium deposits: 2nd Nuclear Engineering and Science Conference, American Society of Mechanical Engineers.

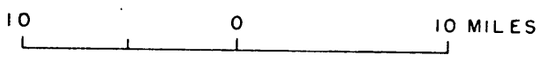
Osterwald, F. W., and Dean, B. G., 1957, Preliminary tectonic map of northern Colorado and northeastern Utah, showing the distribution of uranium deposits: U. S. Geol. Sur. Mineral Investigations Field Studies Map, MF 130.

Powell, J. W., 1876, Report on the geology of the eastern portion of the Uinta Mountains and a region of country adjacent thereto: U. S. Geol. and Geog. Survey Terr.

Sears, J. D., 1924, Geology and oil and gas prospects of part of Moffat County, Colorado, and southern Sweetwater County, Wyoming: U. S. Geol. Survey Bull. 751.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY





Note: MAP ADAPTED FROM OSTERWALD, F.W., AND DEAN, B.G., 1957, PRELIMINARY TECTONIC MAP OF NORTHERN COLORADO AND NORTHEASTERN UTAH; U.S. GEOLOGICAL SURVEY MAP MF-130

DEFENSE MINERALS EXPLORATION ADMINISTRATION
MAY 1958 DOCKET 4929

EXPLANATION

SEDIMENTARY ROCKS

Tbp — BROWNS PARK FORMATION OF MIOCENE AND PLIOCENE AGE

Su — SEDIMENTARY ROCKS, UNDIFFERENTIATED, UPPER CAMBRIAN TO EOCENE AGE

IGNEOUS ROCKS

pЄ — PRECAMBRIAN ROCKS, UNDIFFERENTIATED

CONTACT, APPROXIMATELY LOCATED

FAULT, DASHED WHERE INFERRED; HACHURES ON RELATIVELY DOWNTHROWN SIDE

ANTICLINE

SYNCLINE SHOWING POSITION OF TROUGH OR TRACE OF AXIAL PLANE AND DIRECTION OF PLUNGE

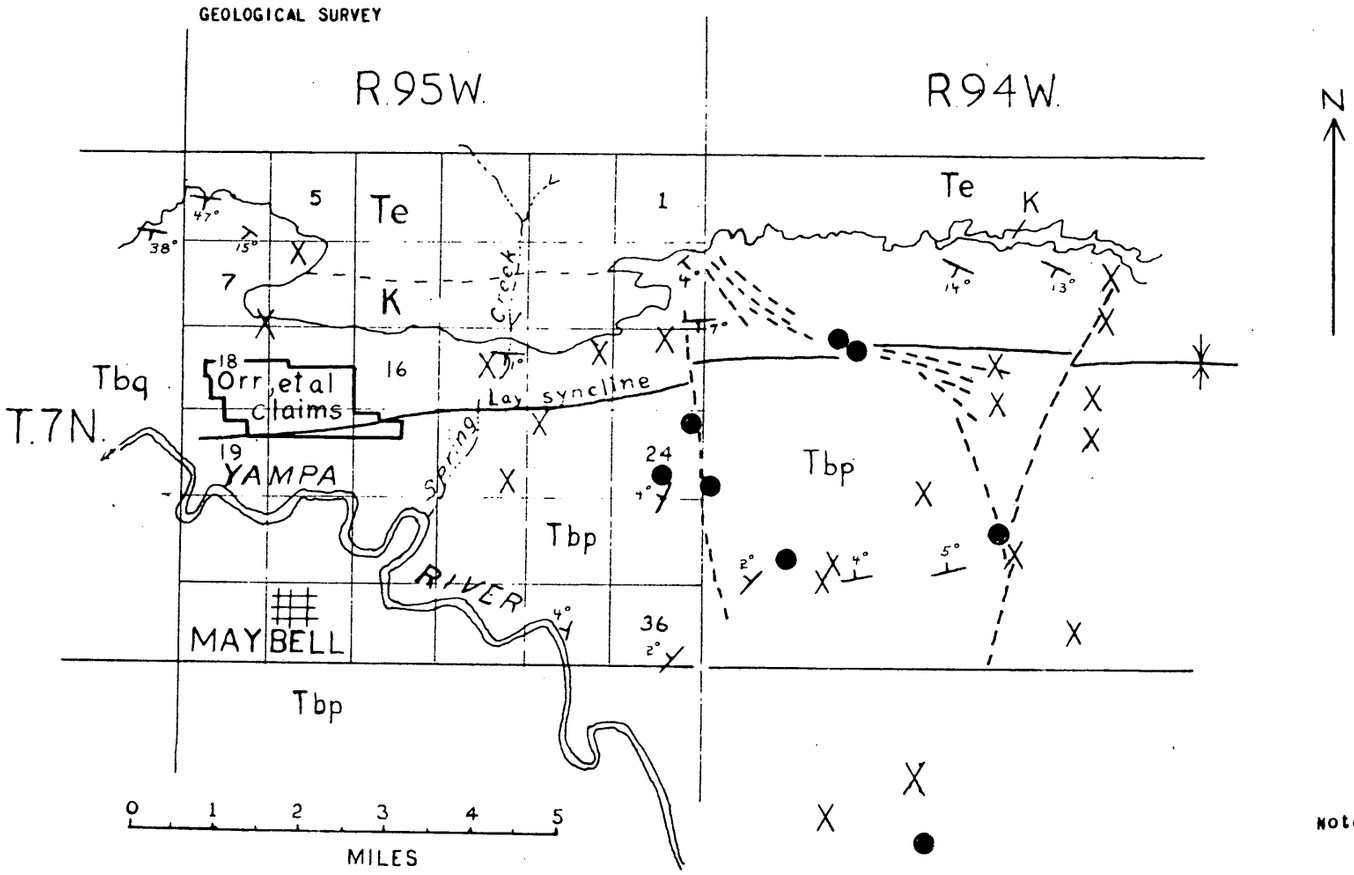
JOINTS AND SMALL FAULTS

URANIUM DEPOSIT, OR A LOCALITY FROM WHICH A SAMPLE CONTAINING 0.01 PERCENT OR MORE URANIUM HAS BEEN OBTAINED OR WHICH VISIBLE URANIUM MINERALS HAVE BEEN OBTAINED. BOX AROUND SYMBOL INDICATES DEPOSIT YIELDED URANIUM ORE.

FIGURE 2.--STRUCTURE AND GENERALIZED OUTCROP MAP OF BROWNS PARK FORMATION SHOWING LOCATION OF URANIUM DEPOSITS WEST OF CRAIG, COLORADO.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
MAY 1958 DOCKET 4929



EXPLANATION

Tbp	BROWNS PARK FORMATION OF MIOCENE AND PLIOCENE AGE
Te	EOCENE(?) AND EOCENE ROCKS, UNDIFFERENTIATED
K	CRETACEOUS ROCKS, UNDIFFERENTIATED
	CONTACT, APPROXIMATELY LOCATED WHERE DASHED
	FAULT, HIGH ANGLE, NORMAL OR REVERSE
	LAY SYNCLINE
40°	STRIKE AND DIP, BROWNS PARK FORMATION
●	URANIUM DEPOSIT
X	URANIUM PROSPECT OR ANOMALY

Note: BASE AND GEOLOGY FROM J.D. SEARS, 1924; FAULTS, LAY SYNCLINE, AND URANIUM DEPOSITS AND PROSPECTS FROM UNPUBLISHED U.S.A.E.C. MAP COMPILED BY D.V. MESCHTER, JANUARY 1958.

FIGURE 3.--GEOLOGIC MAP IN VICINITY OF MAYBELL, COLORADO SHOWING ORR, ET.AL., CLAIMS, STRUCTURE, AND LOCATION OF URANIUM DEPOSITS AND PROSPECTS OR ANOMALIES

APPENDIX A

PROPOSED EXPLORATION PROGRAM AND COST ESTIMATE

Because of a large potential for moderate to low grade ore reserves in the Browns Park formation and the possibility that the upper (ore bearing) part of that formation may be present on the Orr et al. claim group, an exploration program is submitted for consideration. The program is in two stages. Stage I is designed primarily to test for favorable stratigraphic thicknesses of Browns Park rocks at wide spaced intervals on the property. Stage II, subject to prior written approval by the Government if Stage I drilling indicates a thick Browns Park stratigraphic section, is designed to extend favorable ground and to explore for and roughly delineate ore that may be present in the claim area.

Factors Affecting Exploration

The host rock is generally friable and attempts to obtain core by conventional means have not been successful. Exploration drilling in the area thus has been almost completely non-core, and radiometric logs and, to some extent, resistivity logs have been used for detection of uranium and for stratigraphic correlations from drill hole to drill hole. Because of the "softness" of the rock, daily drill hole footage per drill rig is high, averaging about 700 feet per rig per day for about one-half million feet of drill hole (Russell C. Cutter, geologist, in charge of this exploration, Grand Junction, Colorado; personal communication.) The highest footage drilled by a rig in one day is 1800 feet. Because the information from a hole is dependent upon in-hole logging, it has been common practice to base payment for drill hole footage upon footage logged; this insures that the driller uses proper drilling techniques, in particular that the hole is "blown clear" of cuttings. Drill holes properly completed will remain open for long periods.

Radiometric logging should be done soon after the completion of the hole. Background radioactivity (from radon?) increases about two-fold in a period of two to three weeks. A single radiometric probing unit can log between 2000 to 3000 feet per day. Optimum daily logging rates for radiometric and resistivity logging, as estimated by Russell C. Cutter, is between 1500 to 2000 feet per day; thus, one probing unit should service a two to three drill-rig operation. The accuracy of one radiometric logging service for the area has been checked by extensive sampling and found to be within two percent. Price per foot estimates for the combined radiometric and resistivity logging range from $0.07 - $0.12.

Proposed Exploration and Cost Estimates

The cost estimates used in the following section are based on verbal estimates by Russell C. Cutter, Grand Junction, Colorado, a geologist who has had extensive drilling experience in the Maybell area. Drilling from 0 to 150 feet (or perhaps as much as 200 feet dependent upon the depth to the water table) is done by rotary air methods at a cost of $0.45 per foot. Drilling from 150 to 400 feet, the generally accepted bottoming depth as based upon the

tenor of the ore, is done by rotary water methods at a cost of $0.75 per foot. Drilling through the Browns Park formation for stratigraphic information and control to depths that commonly are in excess of 800 feet is done by rotary water methods at a cost of about $2.00 per foot.

The following are footage estimates for an exploration drilling program for the subject claims:

Stage	No. of Holes	Depth 0-150'	Depth 150-400'	Depth 400-700'	Depth 700-1200'	Total Footage	Time Months
I	8	1,200	2,000	2,400	4,000	9,600	½
II	100	15,000	25,000	-	-	40,000	3
Totals	108	16,200	27,000	2,400	4,000	49,600	3½

Note: Drilling time is estimated by using two rigs, each averaging 700 feet per day. A single drill rig commonly can set up and complete an 800-foot hole in an 8-hour shift.

Fifty-four hours of standby time are allowed on a basis of 1/2 hour average per hole.

Estimated drilling costs per foot are as follows:

0 - 150 feet	-	$0.45 per foot
150 - 400 feet	-	$0.75 per foot
400 - 700 feet	-	$1.25 per foot
700 -1200 feet	-	$2.00 per foot

Bulldozing for access roads and drill sites is estimated to require 1/2 hour per hole.

Holes are to be logged geologically on the basis of cuttings saved for 5-foot intervals; samples for chemical analysis will be derived from these cuttings.

STAGE I

The locations of the 8 holes in this stage are shown on Figure 4. They are located in areas where the Browns Park formation is believed to be the thickest, and to avoid areas where erosion has probably removed much of the upper (ore bearing) part of the formation. All holes should be drilled through the Browns Park formation, but not over 10 feet into the underlying Paleozoic on Mesozoic rocks, or to a depth of 1200 feet, whichever is the lesser. It is probable actual drilled depths will range from 500 to 900 feet.

(1) Independent Contracts		
Drilling, 8 holes (time, 1/2 month)		
1200 feet at $0.45 per foot	$ 540.00	
2000 feet at $0.75 per foot	1,500.00	
2400 feet at $1.25 per foot	3,000.00	
4000 feet at $2.00 per foot	8,000.00	
Radiometric and resistivity in-hole probing		
9600 feet at $0.12 per foot (approximate rate for southern Wyoming logging)	1,152.00	
Bulldozing		
4 hours at $12.00 per hour	48.00	
Standby Time of Drill Rig		
4 hours at $12.00 per hour	48.00	
Total Independent Contracts		$14,288.00
(2) Labor, Supervision and Technical Services		
Geologist, (full time, $650/mo. salary, $150/mo. expense) 1/2 month	$ 400.00	
Total Labor, etc.		$ 400.00
(3) Operating Materials and Supplies		
Fuel for 1/2-ton truck 1/2 month at $75/mo.	$ 37.50	
Miscellaneous drafting and office supplies, 1/2 month at $50/mo.	25.00	
Total Operating Materials and Supplies		$ 62.50
(4) Operating Equipment		
1/2-ton truck, 1/2 month at $150/mo. rental	$ 75.00	
Total Operating Equipment		$ 75.00
(5) - (6)		
None	-	-
(7) Miscellaneous		
Chemical analysis, 8 holes, 5 samples per hole at $3.50 per sample	$ 140.00	
Heavy paper sample sacks, $11/1000 1,000 sacks	11.00	
Accounting, 1/2 month at $50/mo.	25.00	
Unemployment tax at 3 percent, Social Security at 2.25 percent, and Industrial Compensation at 1.13 percent. $400.00 at 6.38 percent	25.52	
Total Miscellaneous		$ 201.52
Total Stage I		$15,027.02

STAGE II

If Stage I drilling indicates a favorable thickness of the Browns Park formation in the area drilled, Stage II drilling, with prior Government approval, would be used to extend favorable ground by drilling holes on centers not closer than 600 feet and to roughly delineate mineralized or ore-bearing material on centers not closer than 150 feet to penetrate the upper or favorable part of the Browns Park formation. Hole depths are expected to average 300 feet or less. However, a maximum depth of 400 feet is used as a basis for cost computations.

(1) Independent Contracts		
Drilling 100 holes (time, 2 months)		
15,000 feet at $0.45/ft.	$ 6,750.00	
25,000 feet at $0.75/ft.	18,750.00	
Radiometric and resistivity in-hole probing		
40,000 feet at $0.12/ft.	4,800.00	
Bulldozing		
50 hours at $12.00 per hour	600.00	
Standby Time of Drill Rig		
50 hours at $12.00 per hour	600.00	
Total Independent Contracts		$31,500.00
(2) Labor, Supervision and Technical Services		
Geologist (full time, $650/mo. salary, $150/mo. expense) 3 months	$ 2,400.00	
Total Labor, Supervision and Technical Services		$ 2,400.00
(3) Operating Materials and Supplies		
Fuel for 1/2-ton truck, 3 months at $75/mo.	$ 225.00	
Miscellaneous drafting and office supplies, 3 months at $50/mo.	150.00	
Total Operating Materials and Supplies		$ 375.00
(4) Operating Equipment		
1/2-ton truck, 3 months at $150/mo.	$ 450.00	
Total Operating Equipment		$ 450.00
(5) - (6)		
None	-	-
(7) Miscellaneous		
Chemical analyses, 100 holes, 5 samples per hole at $3.50 per sample	$ 1,750.00	
Accounting, 3 months at $50/mo.	150.00	
Unemployment tax, Social Security and Industrial Compensation, $2,400.00 at 6.38 percent	153.12	
Total Miscellaneous		$ 2,053.12
Total Stage II		$36,778.12

SUMMARY OF COSTS

Stage I	$15,027.02	
Stage II	36,778.12	
Total cost of project		$51,805.14
Government participation at 50%		$25,902.57

In lieu of the foregoing, it is recommended that the estimate of costs in the contract be as follows:

Estimated Costs of the Project

Stage I

Actual Costs

Category (1) Independent Contracts

Non-core drilling	
Interval 0 - 150 feet, 1200 ft. @ $0.45/ft	$ 540.00
" 150 - 400 feet, 2000 ft. @ $0.75/ft	1,500.00
" 400 - 700 feet, 2400 ft. @ $1.25/ft	3,000.00
" 700 -1200 feet, 4000 ft. @ $2.00/ft.	8,000.00
Radiometric and resistivity in-hole probing 9600 feet @ $0.12 per foot	1,152.00
Standby time at drill rig 4 hours @ $12.00 per hour	48.00
Bulldozer operation in preparing roads and drillsites 4 hours at $12.00 per hour	48.00
Categories (2) - (6), incl. None	-

Category (7) Miscellaneous

Chemical analyses of samples for U_3O_8 content, 40 samples @ $3.50 per sample	140.00

Fixed Unit Costs

Incidental allowance, 9600 feet of drilling @ $0.08 1/ per foot	768.00
Total Estimated Cost of Stage I	$15,196.00

Stage II

Actual Costs

Category (1) Independent Contracts

Non-core drilling	
Interval 0-150 feet - 15,000 ft. @ $0.45/ft.	$ 6,750.00
" 150-400 feet - 25,000 ft. @ $0.75/ft.	18,750.00
Radiometric and resistivity in-hole probing	
40,000 feet @ $0.12 per foot	4,800.00
Bulldozer operation in preparing roads and drillsites	
50 hours @ $12.00 per hour	600.00
Standby time of drill rig	
50 hours @ $12.00 per hour	600.00
Categories (2) - (6), incl. None	-
Category (7) Miscellaneous	
Chemical analyses of samples for U_3O_8 content, 500 samples @ $3.50 per sample	1,750.00

Fixed Unit Costs

Incidental allowance	
40,000 feet of drilling @ $0.08 1/ per foot	3,200.00
Total Estimated Cost of Stage II	$36,450.00

1/ Includes all costs of performing the work not otherwise scheduled under Categories (1) and (7).

SUMMARY

Total estimated cost of Stage I	$15,196.00	
Total estimated cost of Stage II	36,450.00	
Total estimated cost of the project		$51,646.00
Government participation at 50 percent		$25,823.00

224 New Customhouse
Denver 2, Colorado

March 20, 1958

Memorandum

To: J. W. Hasler w/enclosures items 1-6
M. H. Howes w/enclosures items 1-6

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4929 (Uranium) Lewis H. Larsen and Jerry Phillips (Orr et. al. claims) Moffat County, Colorado

Enclosed is the following material relating to the subject docket.

1. Copy of application for Government assistance in exploration work under the DMEA program.

2. Memorandum of Review by James Pecne, USBM.

3. Memorandum of Review by W. P. Williams, USGS.

4. Letter of transmittal to the foregoing to this office dated March 14, 1958.

5. A copy of a letter from the Applicant dated March 8, 1958 to the Washington Office DMEA regarding power of attorney and amendments to the mining lease.

6. Routing Control sheet.

A field examination of the property and a joint report of findings and recommendations pertaining to the Applicant's work proposal are requested.

If the field examiners recommend Government participation in the proposed exploration program, please submit 11 extra copies of each map used in the joint report which show the land to be subordinated and the location and extent of recommended work, relative to property boundaries.

The routing control sheet is to be completed, detached from the application, and forwarded to the Executive Officer with the joint examination report.

Original signed by
W. H. KING

W. H. King

HMC:dp

Enclosures

cc: Sec. Oper. Comm. (2)
Harshman w/enclosures items 2-4
Salsbury
Docket
Chron.

LARSEN · INDUSTRIES

URANIUM · OIL AND GAS
MINERAL REFINING
URANIUM REFINING

OFFICE: 259 - 7TH AVENUE
SALT LAKE CITY 3, UTAH
PHONE EM 4-7761

March 13, 1958

GENERAL FILE COPY
DMEA
RECEIVED MAR 17 1958
DATE | | CODE
3/14 | C | 220
3/18 | FLK | 700

Mr. Wm. Ellis, Director
Division of Rare &
Miscellaneous Metals
Department of the Interior
Washington 25, D. C.

Dear Mr. Ellis:

Re: Docket No. DMEA-4929

In reply to your letter of March 7 the papers to which you refer were mailed March 8.

I am very sorry for this long delay, but due to weather conditions and the way the people to be contacted were scattered across the country it took considerably longer than had been expected.

I am sure you will have the papers by this time and hope that everything is in order and satisfactory to you.

Sincerely yours,

Lewis H. Larsen

Lewis H. Larsen

LHL:rd

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/14/58	Kuppor	700
"	Ellis	700
3/14	[illegible]	130
"	Johnson	110
"	Littleton	100
3/14	[illegible]	220
		700

MAR 14 1958

Mr. W. H. King
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4929 (Uranium)
Lewis H. Larsen and Jerry Phillips
Orr, et al., Claims
Moffat County, Colorado

Dear Mr. King:

The subject application is referred to Region III Field Team for investigation, a field examination if believed necessary, and recommendations.

Enclosed are copies of memoranda, dated January 31 and February 3, 1958, from James Paone, USBM, and W. P. Williams, respectively, relating to the proposed project. Also enclosed for the use of the Field Team are:

1. Two copies of the application;

2. One copy of Applicant's letter, dated March 8, 1958;

3. One copy each of two Mining Lease Amendments, both dated March 7, 1958, between Jerry Phillips and Elmer Trevenen, Attorney-in-Fact for the same landowners; and

4. One copy of a Mining Lease Amendment, dated February 17, 1958, between Elmer Trevenen, Kennis O. Littleton, and Jerry Phillips.

The Powers of Attorney listed in the Applicant's letter of March 8 have been retained here.

If a contract is approved, we will require the usual number of Consent to Lien and Subordination Agreement forms signed by Elmer Trevenen individually, and by Elmer Trevenen as Attorney-in-Fact for the landowners listed in

8623

the amendments (item 3 above), or by each landowner, covering the claims listed in both of the amendments. Also, we will require the usual number of Consent to Lien and Subordination Agreement forms signed by Elmer Trevenen and Kennis D. Littleton covering the claims listed in the amendment (item 4 above). Therefore, if the Field Team recommends a project, it should inform the Applicant of these requirements. You should advise the Applicant that, while early submission of these forms would expedite processing the application, their presentation does not imply a contract will be approved.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures

FLKnouse/gla
3-14-58

cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
FLKnouse

APPROVED:

Frank D. Lamb (FDL)
Member, Bureau of Mines

N. E. Nelson (NEN)
Member, Geological Survey

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/14/58	Knapp	700
"	Ellis	700
3/14	Selfridge	130
"	Orwin	110
"	Whitesides	100
		220
		700
3/14	Lamb	130
3/14	Nelson	130

MAR 14 1958

Mr. Lewis H. Larsen, Co-Associate
Lewis H. Larsen and Jerry Phillips
259 - 7th Avenue
Salt Lake City, Utah

Re: Docket No. DMEA-4929 (Uranium)
Orr, et al., Claims
Moffat County, Colorado

Dear Mr. Larsen:

Thank you for your letter, dated March 8, 1958, and attachments requested in our letter of February 3. Your application has been referred to:

Mr. W. H. King
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

The Regional Office will contact you regarding your project if additional information is needed.

Sincerely yours,

G. O. Pollock (for)

Administrator

FLKnouse/gla
3-14-58
cc to: Admr.'s Reading File
FLKnouse
DMEA Field Team, Region III (2)

8623

LARSEN · INDUSTRIES

URANIUM · OIL AND GAS
MINERAL REFINING
URANIUM REFINING

~~BOX 2254~~ SALT LAKE CITY, UTAH
~~CORRIDOR HOTEL NEWHOUSE~~ 259-7th Avenue
PHONE - ~~EL 5-8596~~ Emp. 3-7724

EM-47761

OFFICIAL FILE COPY
RECEIVED MAR 13 1958
DATE INITIALS CODE
3/13 C 220
F-CK 700

March 8, 1958

Re: Docket No. DMEA (Uranium) DMEA-4929
Trevenen-Littleton Group
Orr, et al., Claims
Moffat County, Colorado.

Mr. F. L. Knouse, Acting Director
Division of Rare and Miscellaneous Metals
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D.C.

Dear Mr. Knouse:

Yours of February 3rd received in due time. The delay in answering is due to the fact that Mr. Elmer Trevenen had misplaced 5 of his Powers of Attorney and it was necessary for him to obtain new Powers of Attorney so that we could forward copies to your office.

Enclosed are 2 copies of each of the three amendments to the original leases. Amendment, dated February 17, 1958, modifies Lease of November 15, 1956; Amendments dated March 7, 1958, modify Lease of July 5, 1956 and Lease of January 21st, 1958, respectively. These amendments provide for five (5) years time to carry on the necessary development work.

Enclosed are true photostatic copies of ten Powers of Attorney, all of which have been recorded at the Moffat County, Colorado, Courthouse in Book No. 255, Pages 433 to 442, inclusive, as of March 3, 1958. One Power of Attorney contains three of the landowner's signatures, two Powers of Attorney, each contain two landowners signatures, and seven Powers of Attorney contain one, each, landower's signatures; totaling 14 signatures in all.

The Powers of Attorney are of various dates and are listed below with dates of execution, and are in order as the names appear in the several leases and amendments.

Names	Date of Execution
K. O. Littleton	Aug. 4, 1954
Rosie Littleton	Aug. 4, 1954
Virginia Trevenen	March 3, 1958

Mr. F. L. Knouse, Acting Director 3/8/58

James Duncan	Feb. 27, 1958
James Solace	July 8, 1954
Alva Solace	July 10, 1954
Sam J. Steele	July 28, 1954
George Kitchens	Feb. 24, 1958
Fred Leatherby	Feb. 28, 1958
Bobby Robinson	July 19, 1954
George Polk	July 6, 1955
L. E. Gent	July 6, 1955
Dean Gent	July 6, 1955
A. D. Meinke	Feb. 24, 1958

A slight difference in the initials of eight of the landowner's names as shown in the 2 leases and 2 amendments, as to those shown on the Powers of Attorney exists. These differences are as follows:

Name on Leases	Signature on Power of Attorney
James Duncan	Jim S. Duncan
James Solace	Jim Solace
Alva Solace	M. A. Solace
Sam J. Steele	Sam Steele
Bobby Robinson	R. N. Robinson
George Polk	Geo. B. Polk
L. E. Gent	L. Elton Gent
A. D. Meineke	A. C. Meinke

However, even with the variation in the initials the respective persons are one and the same individuals.

Some of the Powers of Attorney give names of claims, which are now and were covered by the various Orr Claims located during the summer of 1955. Reference is made to pages 2 and 3 of Neal M. Muir's Report. The control of the Orr Group of Claims rests with Elmer Trevenen and Kennis O. Littleton. They have subdivision of interest agreements with the small owners and Elmer Trevenen is acting in their behalf.

I believe that the above, and the enclosed amendments and copies of Powers of Attorney give the information that you requested.

Thanking you for your consideration,

Sincerely yours,

Lewis H. Larsen

Lewis H. Larsen, Co-Associate
Lewis H. Larsen and Jerry Phillips

cc: F.L. Knouse
Jerry Phillips
Neal M. Muir

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/7/58	Knouse	700
"	Ellis	700
"	Larsen	~~100~~ 410
3/10	C	220
		700

MAR 7 1958

Mr. Lewis H. Larsen, Co-Associate
Lewis H. Larsen and Jerry Phillips
259 - 7th Avenue
Salt Lake City, Utah

Re: Docket No. DMEA-4929 (Uranium)
Orr, et al., Claims
Moffat County, Colorado

Dear Mr. Larsen:

Reference is made to our letter, dated February 3, 1958, relating to the captioned docket.

Action on your application is pending receipt of the information requested in the above-mentioned letter. If you are no longer interested in the processing of this application, please advise us.

Sincerely yours,

Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals

FLKnouse/gla
3-7-58
cc to: Admr.'s Reading File
THKiilsgaard, 5224
FLKnouse
DMEA Field Team, Region III (2)

8623

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 4 1958

DATE	INITIALS	CODE
2/4	C	220
2/4	Kmuse	700
Complete		

IN REPLY REFER TO:

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

February 3, 1958

~~Memorandum~~

To: E. W. Ellis, Defense Minerals Exploration Administration

From: W. P. Williams, U. S. Geological Survey

Subject: Review of application, DMEA 4929 (uranium-vanadium), Larsen and Phillips, Trevenen-Littleton claims, Moffat County, Colorado

The applicant proposes to explore for uranium-vanadium ore deposits on 48 unpatented mining claims located near Craig, Colorado. In the vicinity uranium ore is found in the Brown's Park formation of Miocene age.

The proposed project would consist of a total of 56,160 feet of drilling, to be drilled in three stages, at a total estimated cost of $80,676.

The applicant reports that past work on the property consists of some prospect trenches and 13 rotary drill holes. The applicant classes 10 of the holes as ore holes and three as mineralized.

Three of the holes have a weighted average grade of 0.20 percent eU_3O_8 or better. Depths to ore are comparatively shallow, ranging from about 20 feet to 120 feet.

In view of the favorable results of past drilling, the property may be a good site to do more exploratory work. I recommend that the application be referred to the Field Team for further processing.

W. P. Williams

W. P. Williams

To File - DMEA - 4929

Mr. L. H. Larsen, on Feb. 18, by telephone, told F.M. Murphy, that his lawyers were sending the papers requested in Knouse's letter of Feb. 3. Mr. Larsen was in Washington. He said [redacted] the claim area was accessable for examination. No snow and temperatures to date have not been often 0°.

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 31 1958

DATE	INITIALS	CODE
1/31	C	220
1/31	Ellis	700
1-31	FLK	
not assigned		

January 31, 1958

4929

Uranium-Vanadium
Lewis H. Larsen & Jerry Phillips
Trevenen-Littleton
Moffat, Colorado
$80,676.30

Ernest William Ellis, DMEA Member
Uranium Commodity Committee
James Paone, Bureau of Mines Member
Uranium Commodity Committee

Application

1/25/58 1/29/58

x

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
1/31/58	Knouse	700
2/3	Butterworth	100
2/3	C	220
		700

FEB 3 1958

Mr. Lewis H. Larsen, Co-Associate
Lewis H. Larsen and Jerry Phillips
259 - 7th Avenue
Salt Lake City, Utah

Re: Docket No. DMEA-4929 (Uranium)
Orr, et al., Claims
Moffat County, Colorado

Dear Mr. Larsen:

With your application for aid to explore the subject property there were enclosed three mining leases. Neither of these leases provide the Applicant with control of the land for a sufficient period of time to complete the proposed exploration project.

It is the policy of this Agency that applicants must have control of the land for at least a two-year period, with the right to extend the period for an additional three years. Therefore, you should obtain and forward two copies of an amendment to each of the three leases which confers such rights on the lessee.

We note that Elmer Trevenen executed two of the leases as Attorney-in-Fact for the landowners. We will require a true copy of each of the Powers of Attorney.

Sincerely yours,

F. L. Knouse

F. L. Knouse, Acting Director
Division of Rare and
Miscellaneous Metals

FLKnouse/gla
1-31-58
cc to: Admr.'s Reading File
FLKnouse
THKiilsgaard, 5224
DMEA Field Team, Region III (2)

8623

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

January 29, 1958

Messrs. Lewis H. Larsen and
Jerry Phillips
259 - 7th Avenue
Salt Lake City, Utah

Gentlemen:

Subject: DMEA-4929

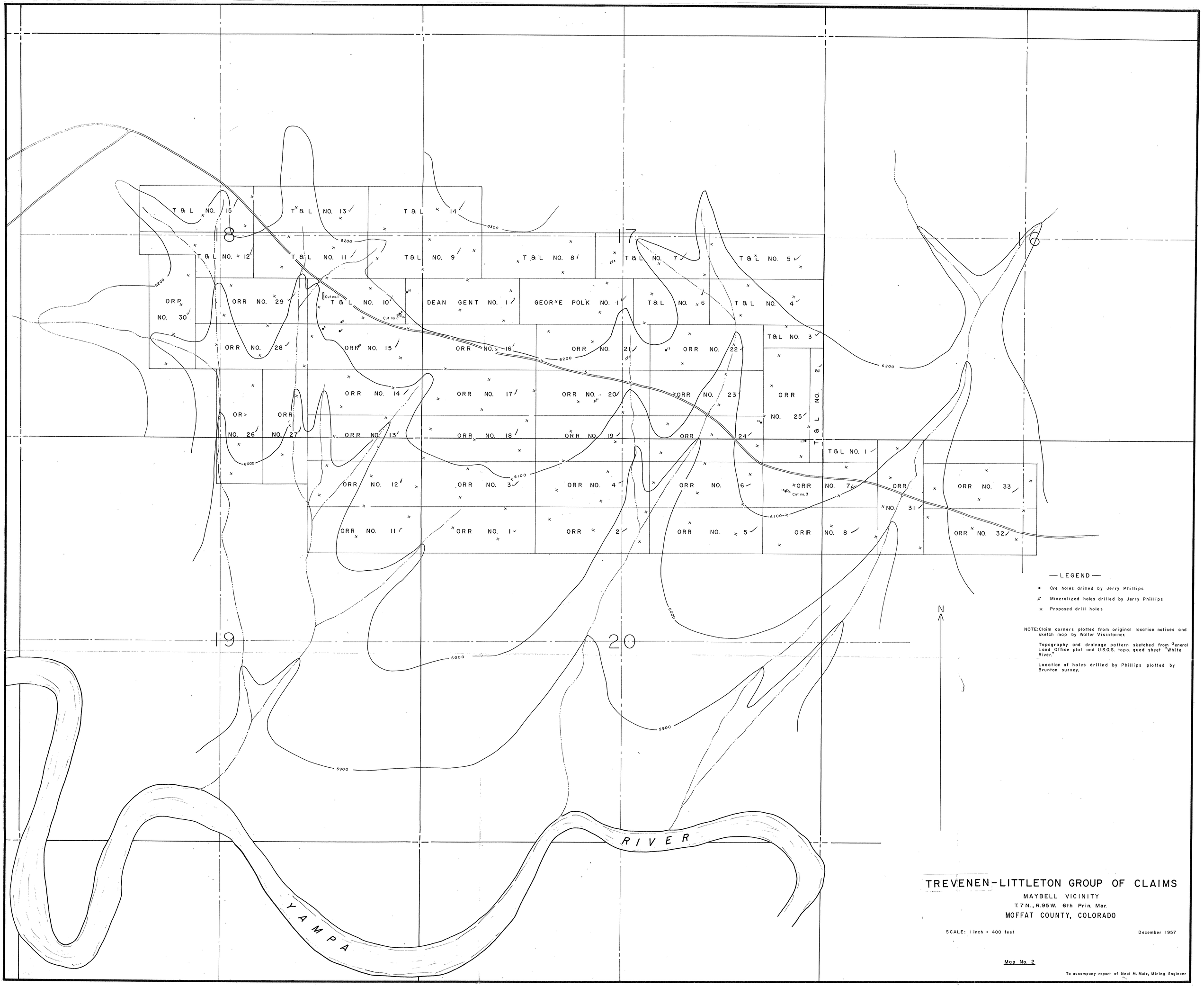
Your application for exploration assistance, dated January 25, 1958 submitted to our office at Washington, D. C. has been assigned Docket Number DMEA-4929 and referred to the Rare and Miscellaneous Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to:

Region III


T & L NO. 15
T & L NO. 13
T & L 14
T & L NO. 12
T & L NO. 11
T & L NO. 9
T & L NO. 8
T & L NO. 7
T & L NO. 5
ORR NO. 30
ORR NO. 29
T & L NO. 10
DEAN GENT NO. 1
GEORGE POLK NO. 1
T & L NO. 6
T & L NO. 4
ORR NO. 28
ORR NO. 15
ORR NO. 16
ORR NO. 21
ORR NO. 22
T & L NO. 3
ORR NO. 14
ORR NO. 17
ORR NO. 20
ORR NO. 23
ORR NO. 25
T & L NO. 2
ORR NO. 26
ORR NO. 27
ORR NO. 13
ORR NO. 18
ORR NO. 19
ORR 24
T & L NO. 1
ORR NO. 12
ORR NO. 3
ORR NO. 4
ORR NO. 6
ORR NO. 7
ORR NO. 31
ORR NO. 33
ORR NO. 11
ORR NO. 1
ORR 2
ORR NO. 5
ORR NO. 8
ORR NO. 32
Cut no. 1
Cut no. 2
Cut no. 3
6300
6200
6100
6000
5900
18
19
20
N
RIVER
YAMPA
— LEGEND —
Ore holes drilled by Jerry Phillips
Mineralized holes drilled by Jerry Phillips
Proposed drill holes
NOTE: Claim corners plotted from original location notices and sketch map by Walter Visintainer.
Topography and drainage pattern sketched from General Land Office plat and U.S.G.S. topo. quad sheet "White River."
Location of holes drilled by Phillips plotted by Brunton survey.
TREVENEN-LITTLETON GROUP OF CLAIMS
MAYBELL VICINITY
T 7 N., R. 95 W. 6th Prin. Mer.
MOFFAT COUNTY, COLORADO
SCALE: 1 inch = 400 feet
December 1957
Map No. 2
To accompany report of Neal M. Muir, Mining Engineer

Trevenen-Littleton Group shown in red

COLORADO
WHITE RIVER QUADRANGLE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Topography by Hoyt S. Gale, in charge, John Allen Davis, and Charles W. Stoops.
Surveyed in 1907.

Outside contoured areas, the drainage is from Land Office Plats.

Scale $\frac{1}{125000}$

1 ½ 0 1 2 3 4 5 Miles

1 ½ 0 1 2 3 4 5 Kilometers

Contour interval 100 feet.
Datum is mean sea level.

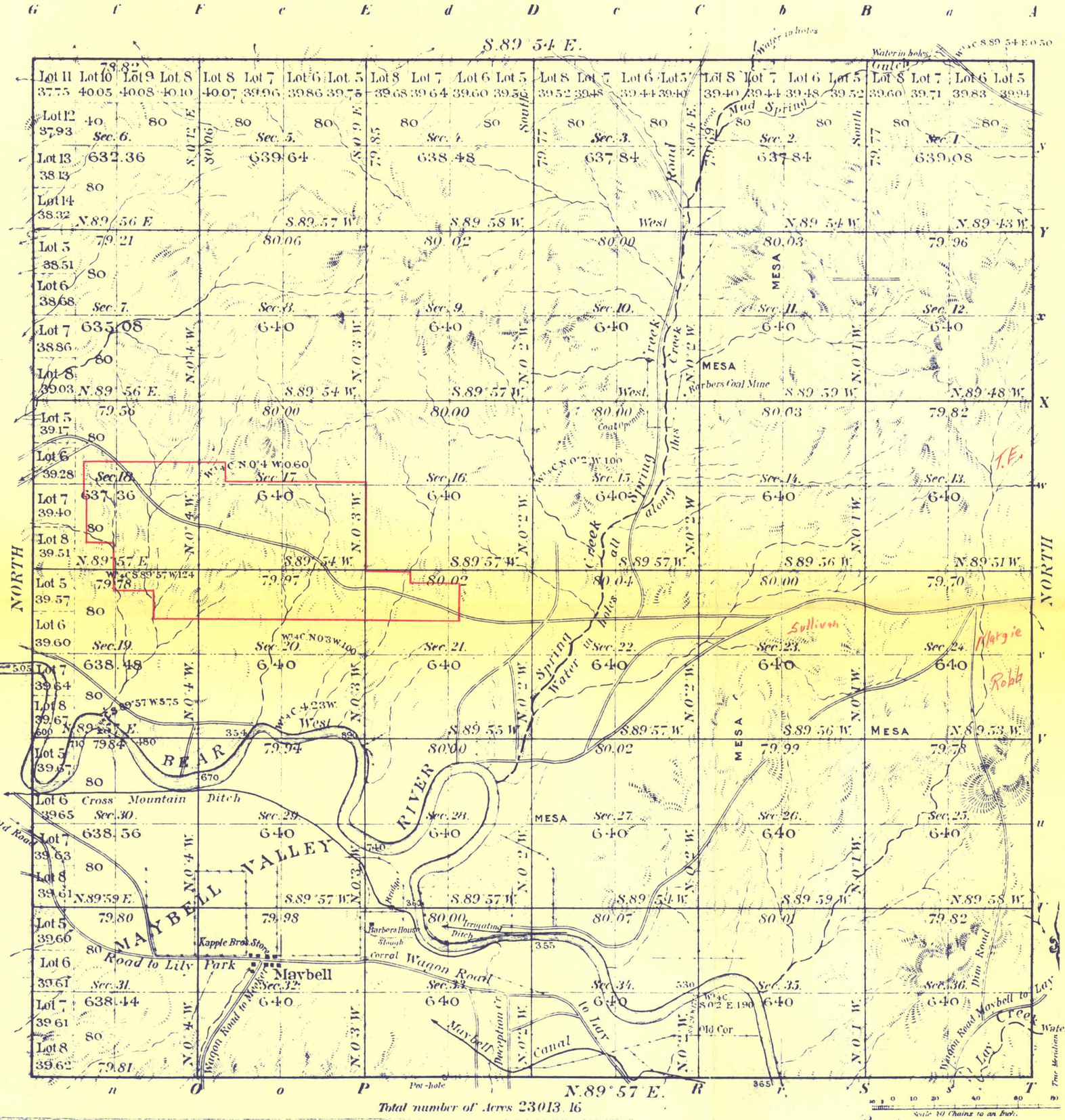
This area surveyed by reconnaissance methods. Maps of adjacent areas surveyed by modern methods may not join this sheet exactly

NIELSEN BLUE PRINT CO., INC.
108 North 3rd St. Phone 2124
Grand Junction, Colorado

Edition of 1910, reprinted 1942
Polyconic projection
Note:—This map is a reprint of the base of a geologic map in Bulletin 415

COLO.
WHITE RIVER

Resurvey Township No. 7 North Range No. 95 West of the 6th Principal Meridian in Colorado.



Total number of Acres 23013.16

Surveys Designated	By Whom Surveyed	Date of Contract No	Date of Contract	Amount of Surveys M. Ch's Lk's	When Surveyed	
Township lines	Benj. F. Clark	829	June 23 1904		Oct 8th to 21 1905	Resurvey
Subdivisions	" " "	"	" "	59 - 76 - 59	Sep. 22nd to Oct 9th 1906	"
Connections	" " "	"	" "	0 - 17 - 55	Sep. 27. 1906	"

Meanders of

Posts	Courses	Ch's Lk's	Posts	Courses	Ch's Lk's	Posts	Courses	Ch's Lk's

Coal indications are in the north two tiers of Sections. Barbers Coal Mine in Sec. 10 and Coal opening in Sec. 15.

See Supplemental Diagram of Sec's. 2, 3, 10 and 15 (Sheet 1) and 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33, 34 and 35 (Sheet 2)

Latitude 40° 30' N.
Longitude 108° 00' W.
Mean mag. decl. 15° 24' E.

The above Map of Resurvey Township No. 7 North of Range No. 95 West of the 6th Principal Meridian in Colorado is strictly conformable to the field notes of the Survey thereof on file in this Office, which have been examined and approved.

Surveyor General's Office, Denver, Colo. August 14. 1907.

Surv. Gen.

Accepted by G.L.O. letter E No 8715 dated April 27 1908

Map No. 4

Trevenen – Littleton Group shown in red

Rub

Map No. 5

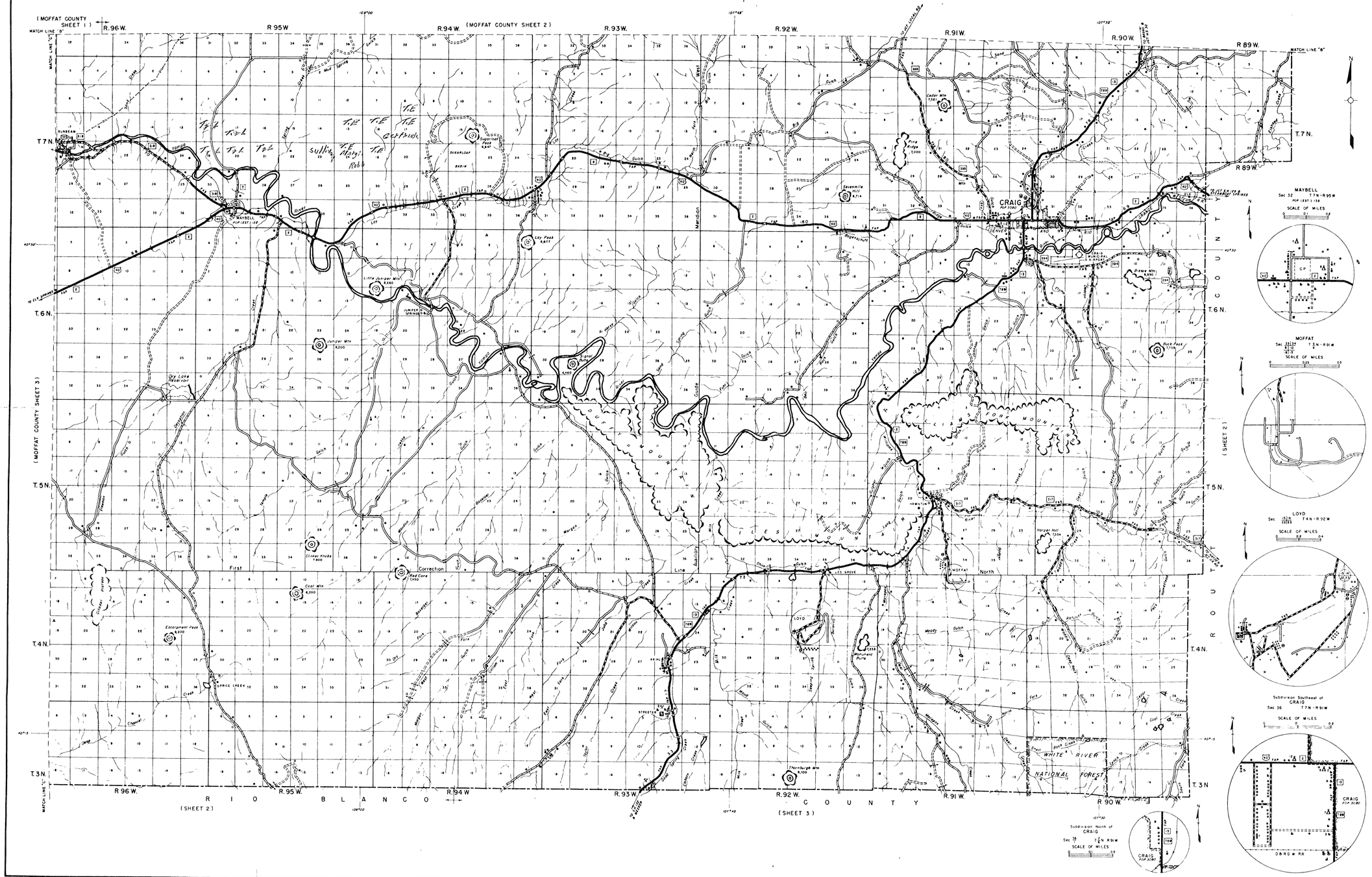
GENERAL HIGHWAY MAP
MOFFAT COUNTY
COLORADO

PREPARED BY THE
COLORADO DEPARTMENT OF HIGHWAYS
PLANNING AND RESEARCH DIVISION
IN COOPERATION WITH THE
U. S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

SCALE OF MILES
0 ½ 1 2 3 4

1948

FED AID AND STATE SYSTEMS REVISED AS OF JULY 1, 1954



GENERAL LEGEND

DIVIDED HIGHWAY
HIGH TYPE PAVED ROAD
BITUMINOUS SURFACED ROAD - LOW TYPE
GRAVEL SURFACED ROAD
SOIL SURFACED ROAD
GRADED AND DRAINED ROAD
UNIMPROVED ROAD (BLAZED)
PRIMITIVE ROAD
PROJECTED ROAD
SIDE ROADS AND STREETS (SURFACE TYPE NOT SYMBOLIZED)
TRAFFIC CIRCLE
CLOVER LEAF
HIGHWAY GRADE SEPARATION
POINT TO POINT MILEAGE
TRAIL
STATE BOUNDARY LINE
COUNTY BOUNDARY LINE
NAT FOR BOUNDARY LINE
NAT PARK BOUNDARY LINE
TOWNSHIP RANGE LINE
SECTION LINE
CORPORATE LIMITS
DELIMITED URBAN BOUNDARY LINE
NATIONAL MONUMENTS INDIAN RESERVATIONS MILITARY RESERVATIONS OTHER PARKS, PLACES (WITH NAME)
CONTINENTAL DIVIDE
LAND GRANT LINE
COUNTY MATCH LINE
RAILROAD
RAILROAD IN JUXTAPOSITION
RAILROAD (NARROW GAUGE)
RAILROAD (COMBINATION STANDARD AND NARROW GAUGE)
RAILROAD (PRIMARILY OWNED) STANDARD GAUGE / NARROW GAUGE
RAILROAD (ABANDONED)
RAILWAY (ELECTRIC)
RAILROAD STATION
GRADE CROSSING
RAILROAD ABOVE
RAILROAD BELOW
RAILROAD BRIDGE
RAILROAD TUNNEL
OVERHEAD STRUCTURE
FEDERAL AID PRIMARY HIGHWAY SYSTEM FAP
FEDERAL AID SECONDARY HIGHWAY SYSTEM FAS
FEDERAL AID URBAN HIGHWAY SYSTEM FAU
IND FEDERAL AID PRIMARY OR FEDERAL AID SECONDARY ROUTE FAP FAS
U S HIGHWAY SYSTEM US
STATE HIGHWAY SYSTEM SH
PROJECTED STATE HIGHWAY SYSTEM PS
SUSPENSION BRIDGE
TRUSS BRIDGE (W WOOD, STEEL OR GRAVEL SURFACE)
ARCH BRIDGE (SHOWING ARCHES)
HIGHWAY BRIDGE
SMALL BRIDGES CLOSELY SPACED
HIGHWAY TUNNEL
MINOR STRUCTURE
CONCRETE FORD OR DIP
NATURAL FORD
BARRIER (ANY TYPE)
CATTLE GUARD (ANY TYPE)
GATE (ANY TYPE)
CANYONS
MOUNTAIN PASS AND ELEVATION
PIPE LINE (GAS OIL, ETC)
PROMINENT TRANSMISSION LINE
MOUNTAIN PEAK AND ELEVATION 4,265
MESA, MOUNTAIN BUTTE
SLIDERS
CULTURAL FEATURES SHOWN OUT OF POSITION
FARM UNIT
DWELLING (OTHER THAN FARM)
DWELLINGS (CLOSELY GROUPED) 12
COMBINED DWELLING AND STORE
HOTEL, INN
COMMERCIAL BUILDING
COMMERCIAL BUILDINGS (GROUPED) 10
FACTORY OR INDUSTRIAL PLANT
POST OFFICE
SCHOOL
COMMUNITY OR TOWN HALL, GRANGE
HOSPITAL
CHURCH
CEMETERY
CORRECTIONAL INSTITUTION
COUNTY FARM
WATER SUPPLY STAND PIPE
SEWAGE DISPOSAL PLANT
POWER PLANT
POWER SUBSTATION
RADIO STATION (WITH CALL LETTERS) KGA
RADIO RANGE STATION KO
HIGHWAY GARAGE
SAWMILL (STATIONARY)
MINE
OIL WELLS, GAS WELLS
STORAGE TANKS
PUMPING STATION (GENERAL)
SEASONAL INDUSTRY
GRAIN ELEVATOR
BEET DUMP
STOCK YARD - LOADING PEN
MILITARY RESERVATION OR FORT
HISTORIC RUIN
CAMP GROUND (NO BUILDINGS)
TOURIST COURT OR MOTEL
CAMP OR LODGE
RANGER STATION
RANGER (OR ANY PERSON) PERMANENTLY OCCUPIED
GAME PRESERVE
LOOKOUT STATION
TRIANGULATION STATION
GATE HOUSE OR TOLL HOUSE
DRIVE-IN THEATRE
GOLF GROUND COUNTRY CLUB
ATHLETIC FIELD
SMALL PARKS (STATE, OF COUNTY MP MUNICIPAL, MP INDIVIDE PARKS) SP
FAIR GROUNDS, SPECTATOR AND RACE COURSES
STATE CAPITAL
COUNTY SEAT
OTHER CITIES AND VILLAGES
AIR ROUTES AIRWAY
MILITARY AIRFIELD
AIRPORT COMPLETE FACILITIES
AIRFIELD LIMITED FACILITIES
LANDING AREA OR STRIP (INCLUDING WINDS AIRFIELDS)
AIRWAY LIGHT BEACON
AIRPORT WITH SURFACED RUNWAYS
STREAM (PRIMARY)
STREAM (SECONDARY)
STREAM (INTERMITTENT)
IRRIGATION DITCH
AQUEDUCT TUNNEL
RESERVOIR, LAKE OR POND
RESERVOIR, LAKE OR POND WITH DAM
RESERVOIR HIGH WATER LINE
LAKE OR POND (INTERMITTENT)
OVERFLOW LAND
MARSH OR SWAMP LAND
FISH HATCHERY (BUILDINGS) (POND OR LAKE)
LEVEE OR DIKE
SAND DUNES, SHIFTING SAND
GRAVEL PITS
DETAIL MAPS SHOWN THUS
SUBURBAN AREAS SHOWN ON SUPPLEMENTAL MAP SHEETS S2
NOTE ALL VACANT BUILDINGS OPEN THUS

KEY TO COUNTY SHEETS

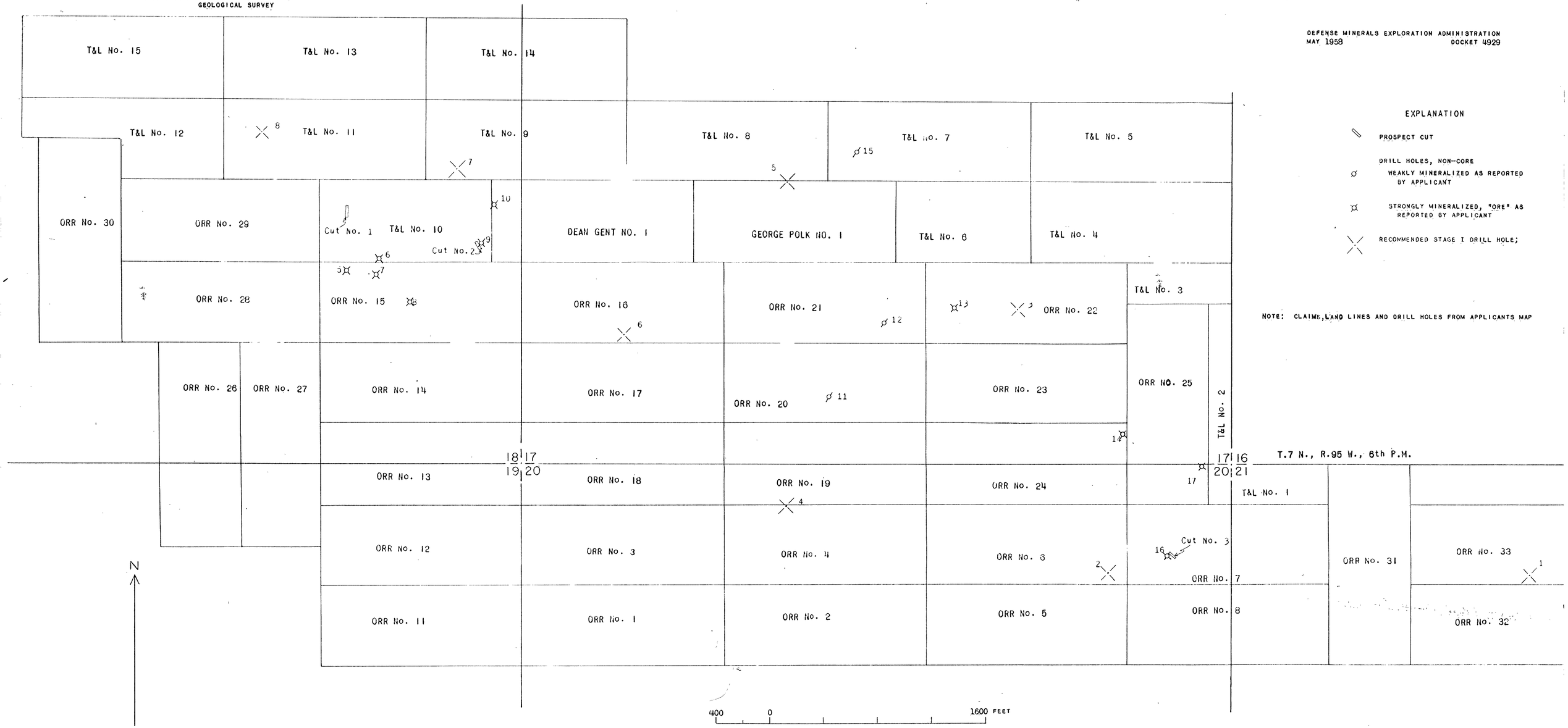
SHEET 1	SHEET 2
SHEET 3	SHEET 4

MODIFIED POLYCONIC PROJECTION

SHEET 4 OF 4 SHEETS

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
MAY 1958 DOCKET 4929



EXPLANATION

PROSPECT CUT

DRILL HOLES, NON-CORE

WEAKLY MINERALIZED AS REPORTED BY APPLICANT

STRONGLY MINERALIZED, "ORE" AS REPORTED BY APPLICANT

RECOMMENDED STAGE I DRILL HOLE;

NOTE: CLAIMS, LAND LINES AND DRILL HOLES FROM APPLICANTS MAP

Figure 4.--MAP OF THE ORR, et.al., CLAIMS, MAYBELL MINING DISTRICT, MOFFATT COUNTY, COLORADO.