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

224 New Customhouse
Denver 2, Colorado

February 24, 1955

Mr. Richard A. Teichman, Jr., Geologist
Cal Uranium Company
152 East Center Street
Moab, Utah

Re: DMEA Docket 3518
(Margaret K. Ruddock)

Dear Mr. Teichman:

This will acknowledge receipt of your letter dated February 18, 1955 in which you state that the necessary geological information must wait until spring because of the heavy snow.

As stated in our letter of January 19, 1955, Docket DMEA 3518 was denied without prejudice.

A future new application in which known geological conditions form the basis for a proposed exploration program would be given proper consideration. A signed copy of the compromise boundary agreement with the adjoining property owners should also accompany a new application.

Very truly yours,

W. M. TRAVER,

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

cc: Subject
Chron
Administrator, DMEA (2)
Shaw
Harshman
Williams

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

224 New Customhouse
Denver 2, Colorado

February 24, 1955

Mr. Richard A. Teichman, Jr., Geologist
Cal Uranium Company
152 East Center Street
Moab, Utah

Re: DMEA Docket 3518
(Margaret K. Ruddock)

Dear Mr. Teichman:

This will acknowledge receipt of your letter dated February 10, 1955 in which you state that the necessary geological information must wait until spring because of the heavy snow.

As stated in our letter of January 19, 1955, Docket DMEA 3518 was denied without prejudice.

A future new application in which known geological conditions form the basis for a proposed exploration program would be given proper consideration. A signed copy of the compromise boundary agreement with the adjoining property owners should also accompany a new application.

Very truly yours,

W. M. TRAVER,

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

cc: Subject
Chron
Administrator, DMEA (2)
Shaw
Harshman
Williams

CAL URANIUM COMPANY

MOAB, UTAH

February 17, 1955

DMEA

FEB 21 1955

BUREAU OF MINES

Mr. W. M. Traver
DMEA Field Team, Region III
224 New Custom House
Denver 2, Colorado

Dear Mr. Traver:

We have received your communication dated January 19, 1955, in which you state our application for DMEA loan (Docket No. DMEA 3518) is denied for lack of geologic information. During the course of the USGS survey of the Flat Top properties the absence of some of this data had been discussed and we indicated our complete willingness to cooperate and to supply the additional data. Apparently your field representatives did not pass along the above information.

The boundary agreement is now passing from hand to hand amongst the various owners of the properties and will be available soon.

Addition of the necessary geological information must necessarily wait until spring due to heavy snow cover. During the examination of the property by Mr. Eicher we assumed that he had probably made note of some of the pertinent geological criteria you mention in paragraph two of your letter.

We realize that there are a large number of applications for uranium assistance now on file in your office, but we would appreciate your making note of the above in Docket No. DMEA 3518.

Sincerely yours,

Richard A. Teichman, Jr.

Richard A. Teichman, Jr.
Geologist

RT/ml

2/2/55 gla

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

224 New Customhouse
Denver 2, Colorado

January 19, 1955

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: DOC

From: Field Team, Region XIX

Subject: Report of Examination, DMEA Docket 3515, (Uranium), Margaret K. Hubbock, Depression, Rainbow, Wasp, and Ken claims, Mesa County, Colorado

Enclosed are four copies of the report of examination on the subject docket, a copy of the letter of denial to the applicant, and two copies of Form 3b.

W. M. TRAVER

W. M. Traver

WMC:pw

cc:

Subject
Chron
Harshman
Williams
Administrator
ARC
Shaw

E. N. Harshman

E. N. Harshman

1-31-55

224 New Customhouse
Denver 2, Colorado

January 19, 1955

Mrs. Margaret K. Ruddock
c/o Cal Uranium Company
152 Center Street
Moab, Utah

Re: Docket No. DMEA 3518

Dear Mrs. Ruddock:

Reference is made to your application on the Depression, Rainbow, Wasp, and Rim claims, Mesa County, Colorado.

A careful study of your property and data available to this agency reveals that until such time as you complete a geologic map of the area showing the location and thickness of the sandstone units in the upper part of the Salt Wash member, thickness of the green sandstone in contact with these sandstones, and the presence and relative amount of carbonaceous material in these sandstones, a logical exploration program cannot be planned.

Under these circumstances, your application is denied without prejudice.

A future new application in which known geologic conditions form the basis for a proposed exploration program would be given proper consideration. A signed copy of the compromise boundary agreement with the property owners on the south should also accompany a new application.

Very truly yours,

W. M. TRAVER

W. M. Traver

WMT:yw

cc: Subject
Chron
Harshman
Williams
Administrator
ABC
Shaw

E. N. Harshman

E. N. Harshman

DMEA Field Team, Region III

1-31-55

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Transmitted

JAN 19 1955

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
November 24, 1954

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

Memorandum

To: Executive Officer, Field Team, Region IV

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

Subject: DMEA 3518 (Uranium) Margaret K. Ruddock, (Depression, Rainbow, Wasp and Rim claims) Flat Top mesa, Gateway mining district, Mesa County, Colorado

Enclosed are the original and 3 copies of a memorandum by M. H. Salsbury, corresponding with one forthcoming from the Geological Survey participant in the examination, recommending that the Region IV Field Team request the applicant on the subject docket to submit a revised proposal as outlined.

The recommendations have my approval.

W. M. Traver

WMT/dj
enclosures

cc: 3
DMEA 3518
Chron

DMEA CLEARANCE
1-31-55
(dcsc)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Transmitted

JAN 19 1955

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
November 23, 1954

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
27 1955

Memorandum

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

From: M. H. Salsbury

Subject: DMEA 3518 (Uranium) Margaret K. Ruddock, (Depression, Rainbow, Wasp and Rim claims) Flat Top mesa, Gateway mining district, Mesa County, Colorado--Recommendation for revised exploration plan

The subject property was visited on November 18, 1954 by a Region IV DMEA examining team accompanied by Jack I. McLelland, geologist for the Cal Uranium Company, who represents the applicant. Government assisted exploration consisting of 900 feet of core drilling and 30,000 feet of wagon drilling is requested at an estimated cost of $30,170.00, Government participation 75 percent, or $22,627.50.

The property consists of 17 unpatented mining claims which cover the entire north half of Flat Top mesa in unsurveyed T. 40 N., R. 18 W. New Mexico principal meridian. They are unexplored except for the Wasp claim, which lies on the north rim of the mesa and has been extensively explored by shallow drilling and worked at several different times since 1921, producing a substantial tonnage of uranium-vanadium ore. The ore has been mined through adit tunnels which extend as much as 450 feet from the rim. They are on the top ore horizon of the Salt Wash formation, which is found a maximum of 100 feet below surface. A record of production was not furnished by the applicant, but has been requested from the Atomic Energy Commission.

There appears to be a reasonable chance of finding significant uranium deposits on the property. The geologic report submitted with the application mentions favorable trends extending through the claims, but does not make use of this information in presenting the drilling program. There are excellent rim exposures on three sides of the property and it is believed that mapping of sandstone lensing at the rims and in the adjoining mine workings can be correlated to indicate the more favorable areas, and eliminate unfavorable areas without the necessity of blanketing the entire area with drill holes as proposed by the applicant. In addition, it appears that more of the holes in the proposed Stage I should be core drill holes, instead of wagon drill holes.

DMEA
1-31-55

There is evidence of a lower ore horizon in shallow rim openings below the main mine workings on the north rim, and a few holes to explore this possibility away from the rim are probably advisable, but the maximum depth would be 200 feet rather than the 300 feet proposed.

McLelland is aware of these requirements. He has completed most of the geologic mapping of the mine workings, but mapping of rim exposures remains to be done. It was not possible to outline a revised drilling pattern during the field examination without first having this information.

It is recommended that the Region IV DMEA Field Team request the applicant to submit a revised program based on geological considerations, limiting hole depth to a maximum of 200 feet, and confining drilling to the more favorable areas.

A copy of a compromise boundary agreement which McLelland states has been made with the property owners on the south should also be furnished.

M. H. Salsbury,
Mining Engineer

MHS/dj

cc: 3
DMEA 3518
Chron

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

Transmittal
JAN 19 1955

January 4, 1955

Memorandum

To: DMEA Field Team, Region IV

From: E. M. Harshman

Subject: DMEA Docket 3518 (uranium), Margaret Ruddock, Depression, Rainbow, Wasp, and Rim claims, Mesa County, Colorado

Enclosed are 10 copies of a geologic report by Lee J. Eicher of the U. S. Geological Survey covering the above docket.

The subject property is on Flat Top Mesa in an area characterized by ore bodies with maximum dimensions of 1/2 to 3 feet thick, 3 to 15 feet wide, and 25 to 70 feet long. Generally the deposits occur in groups but the size of the mineralized area rarely exceeds 80 feet in width and 110 feet in length.

Eicher concludes that the exploration program proposed by the applicant is not well adapted to the character of the deposits and that its execution would not result in a significant discovery. He suggests that detailed geologic mapping by the applicant might furnish data upon which to base a more logical exploration program. The geologic report supports the conclusions.

I concur in Eicher's recommendation that the application for exploration assistance be denied, such denial to be made without prejudice to a possible future application in which known geologic conditions form the basis for the proposed exploration program.

E. M. Harshman
E. M. Harshman
Member, Field Team

Enclosures (10)

Reviewed by
DMEA OPERATING COMMITTEE
1-31-55
(date)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 360
GRAND JUNCTION, COLORADO

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

Transmitted
JAN 19 1955

December 31, 1954

Memorandum

To: E. N. Harshman, DMEA Field Team, Region IV

From: Arnold L. Brokaw

Subject: DMEA 3518, Margaret Ruddock, Depression, Rainbow, Wasp, and Rim claims, Mesa County, Colorado

Transmitted herewith are 10 copies of a geologic report and accompanying maps by Lee J. Eicher, covering a field examination of the above-referenced property.

Field examination of the property shows that geologic conditions may be favorable for the occurrence of uranium deposits. However, the deposits are likely to be small, and the drilling program proposed by the applicant would be unlikely to discover the small deposits. Eicher recommends that DMEA assistance be denied until the applicant prepares a detailed geologic map showing expected trends of favorable ground and a logical drilling program based on geologic mapping. I concur with Eicher's recommendations.

The application was brought to the attention of the Exploration Division, Grand Junction Operations Office, U. S. Atomic Energy Commission, and the Commission was asked for its help and advice in evaluating the property.

T. E. Mullens
For Arnold L. Brokaw

Enclosures

TEM/mlr

Reviewed by
DMEA OPERATING COMMITTEE
1-31-55
(date)

UNITED STATES DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3518, Margaret Ruddock, Depression, Rainbow, Wasp, and Rim claims
Mesa County, Colorado

Uranium

Geologic Report

by

Lee J. Eicher
U. S. Geological Survey

December 31, 1954

Reviewed by
DMEA OPERATING COMMITTEE
1-31-55
(date)

DMEA 3518

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

INTRODUCTION AND SUMMARY

Margaret K. Ruddock, represented by Cal Uranium Company, has applied (DMEA Docket No. 3518) to the Defense Minerals Exploration Administration for aid to conduct exploration for uranium ore on the Depression 1 through 6, Rainbow 1 and 2, Wasp 1 and 2, and Rim 1 through 8 claims. The subject claims are located in an unsurveyed portion of T. 50 N., R. 18 W., N.M.P.M., Mesa County, Colo. (fig. 1). The applicant proposes to do 900 feet of diamond core drilling and 30,000 feet of non-core drilling at a total estimated cost of $30,170.

The property was examined November 18, 1954, by M. H. Salsbury, U. S. Bureau of Mines; L. J. Eicher, U. S. Geological Survey; and J.I. McLelland, representative for the applicant.

The applicant's claims are located on the northern part of Flat Top Mesa in the central part of the Gateway mining district (fig. 1). The claims are accessible by two roads. One access road (18 mi.) connects with Colorado State Highway 141 about 4 miles northeast of Gateway, Colo. This road is very steep and becomes impassable during the winter and spring months. The other road extends east to Outlaw Mesa, then northeast to the Forest Service road on the Uncompahgre Plateau and connects with Colorado State Highway 141 about 15 miles southwest of Whitewater, Colo.

The applicant states that J. I. McLelland, geologist associated with Cal Uranium, would supervise operations. He appears capable to perform the necessary geologic and supervisory duties.

Reviewed by
DMEA OPERATING COMMITTEE
1-31-55
(date)

GEOLOGY AND ORE DEPOSITS

The rocks exposed in the vicinity of the applicant's property consist of Mesozoic sediments of the Upper Jurassic Morrison formation (fig. 2). The Morrison formation is subdivided into the Salt Wash member, which consists of sandstone and interbedded mudstone lenses, and the overlying Brushy Basin member, which consists primarily of variegated red and gray shales and several interbedded conglomeratic sandstone lenses.

All of the significant uranium-bearing deposits mined in the vicinity of the applicant's claims occur within the sandstone lenses in the upper one-third of the Salt Wash member of the Morrison formation. On fresh exposures the sandstones range in color from white to gray, or light red. Near deposits the sandstone is commonly speckled with limonite stains. The sandstone is composed dominantly of medium-fine to medium-sized quartz grains with minor amounts of interstitial clay and grains of white and pink chert and feldspar.

The sandstones are commonly lenticular and irregularly bedded. Scour and fill type of sedimentation formed thick elongated, narrow lenses that are composed of sandstone containing thin, discontinuous lenses of mudstone, thin zones of mudstone-pebble conglomerate, and abundant fragments and masses of carbonaceous material. Uranium-bearing deposits are commonly located in or near these "trash pockets". In the vicinity of the deposits the mudstone in contact with the sandstone is gray-green in color.

Individual ore bodies vary in size. Minimum and maximum dimensions are: 1/2 to 3 feet thick, 3 to 15 feet wide, and 25 to 70 feet long. The ore bodies are commonly connected by a thin, continuous seam of mineralized material. The average mineralized area (group of deposits) is 50 - 80 feet wide and 80 - 110 feet long.

The applicant's claims on Flat Top Mesa have produced 1,300 tons of ore averaging 0.56 percent U_3O_8 and 2.80 percent V_2O_5 during the period 1948 through September 1954.

PROPOSED EXPLORATION

The applicant proposes to explore the subject claims by means of 3 deep (300 feet) diamond-drill core holes and 300 wagon-drill holes. The wagon-drill holes are proposed in a 3-stage drilling plan with stage 2 dependent on stage 1 and stage 3 dependent on stage 2. The spacing of the stage 1 wagon-drill holes is 300 feet to search for favorable areas. The spacing of holes in stages 2 and 3 is 100 feet and these holes would be drilled in any favorable areas found in the stage 1 drilling.

As all available information shows that the uranium-bearing deposits are less than 100 feet in diameter and the favorable areas are probably not much larger, this plan of drilling does not seem feasible. Also, geologic guides to areas favorable for the occurrence of deposits normally cannot be obtained from wagon-drill information.

A suggested alternative would be to map the detailed geology of the upper part of the Salt Wash member. Mapping would give information as to the favorableness of the outcrop of the Salt Wash sandstone units. A minimum of diamond-drill holes would then be drilled in specified areas to further delimit the favorable areas. This would logically be followed by a number of closely-spaced (50 to 100 feet) holes in the favorable areas to search for the uranium-bearing deposits. The closely-spaced holes would probably be drilled by wagon-drill methods. Although no accurate assays could be obtained by this method, the approximate depth, thickness, and grade of the mineralized material could be obtained by using a gamma-ray unit to probe the holes.

Therefore, it is suggested that the applicant complete a geologic map of the area showing the location and thickness of the sandstone units in the upper part of the Salt Wash member, thickness of green mudstone in contact with these sandstones, and the presence and relative amount of carbonaceous material in these sandstones. With the above geologic information, the applicant can probably submit a more logical proposed drilling program.

CONCLUSIONS AND RECOMMENDATIONS

Field examinations of the subject property shows that geologic conditions may be favorable for the occurrence of uranium-bearing deposits. The deposits are likely to be small targets that would not be discovered by the applicant's proposed drilling program. It is recommended that the application be denied until the applicant submits the suggested geologic map, accompanied by a more logical proposed drilling program.

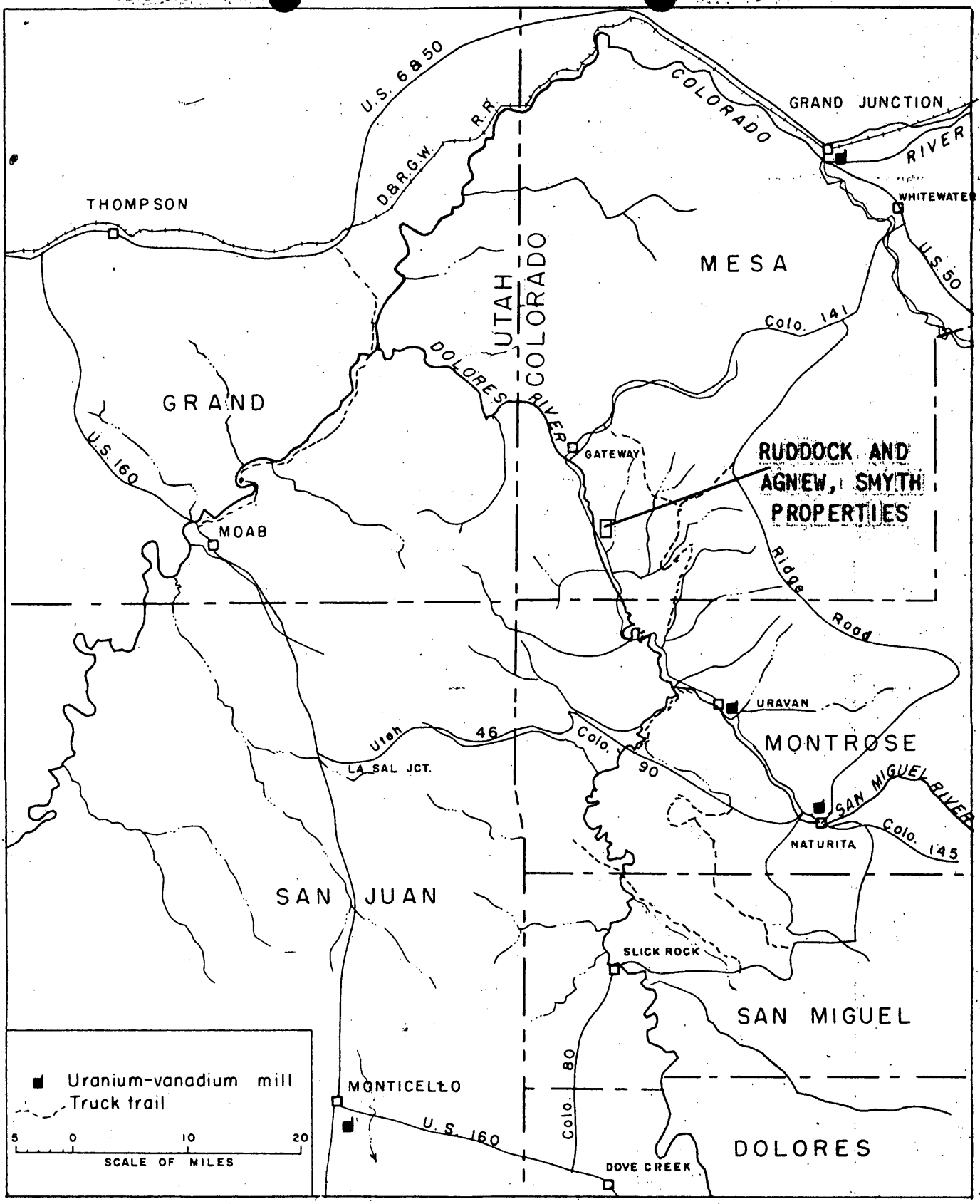

Figure 1. INDEX MAP OF PART OF COLORADO PLATEAU SHOWING LOCATION OF THE RUDDOCK AND AGNEW, SMYTH PROPERTIES, FLAT TOP MESA, MESA COUNTY, COLORADO

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

224 New Customhouse
Denver 2, Colorado

January 19, 1955

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 200

From: Field Team, Region III

Subject: Report of Examination, DMEA Docket 3518, (Uranium), Margaret K. Ruddock, Depression, Rainbow, Wasp, and Rim claims, Mesa County, Colorado

Enclosed are four copies of the report of examination on the subject docket, a copy of the letter of denial to the applicant, and two copies of Form 3b.

W. M. Traver

W. M. Traver

HMC:pw

denial letter
to H B. 1/27

E. N. Harshman

E. N. Harshman

Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Transmitted

JAN 19 1955

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
November 24, 1954

DEPARTMENT OF THE INTERIOR
Lands Minerals Administration
DENVER
JAN 25 1955

Memorandum

To: Executive Officer, Field Team, Region IV

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

Subject: DMEA 3518 (Uranium) Margaret K. Ruddock, (Depression, Rainbow, Wasp and Rim claims) Flat Top mesa, Gateway mining district, Mesa County, Colorado

Enclosed are the original and 3 copies of a memorandum by M. H. Salsbury, corresponding with one forthcoming from the Geological Survey participant in the examination, recommending that the Region IV Field Team request the applicant on the subject docket to submit a revised proposal as outlined.

The recommendations have my approval.

W. M. TRAVER

W. M. Traver

WMT/dj
enclosures

cc: 3
DMEA 3518
Chron

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Transmitted

JAN 19 1955

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
November 23, 1954

RECEIVED 28 1955

Memorandum

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

From: M. H. Salsbury

Subject: DMEA 3518 (Uranium) Margaret K. Ruddock, (Depression, Rainbow, Wasp and Rim claims) Flat Top mesa, Gateway mining district, Mesa County, Colorado--Recommendation for revised exploration plan

The subject property was visited on November 18, 1954 by a Region IV DMEA examining team accompanied by Jack I. McLelland, geologist for the Cal Uranium Company, who represents the applicant. Government assisted exploration consisting of 900 feet of core drilling and 30,000 feet of wagon drilling is requested at an estimated cost of $30,170.00, Government participation 75 percent, or $22,627.50.

The property consists of 17 unpatented mining claims which cover the entire north half of Flat Top mesa in unsurveyed T. 40 N. R. 18 W. New Mexico principal meridian. They are unexplored except for the Wasp claim, which lies on the north rim of the mesa and has been extensively explored by shallow drilling and worked at several different times since 1921, producing a substantial tonnage of uranium-vanadium ore. The ore has been mined through adit tunnels which extend as much as 450 feet from the rim. They are on the top ore horizon of the Salt Wash formation, which is found a maximum of 100 feet below surface. A record of production was not furnished by the applicant, but has been requested from the Atomic Energy Commission.

There appears to be a reasonable chance of finding significant uranium deposits on the property. The geologic report submitted with the application mentions favorable trends extending through the claims, but does not make use of this information in presenting the drilling program. There are excellent rim exposures on three sides of the property and it is believed that mapping of sandstone lensing at the rims and in the adjoining mine workings can be correlated to indicate the more favorable areas, and eliminate unfavorable areas without the necessity of blanketing the entire area with drill holes as proposed by the applicant. In addition, it appears that more of the holes in the proposed Stage I should be core drill holes, instead of wagon drill holes.

There is evidence of a lower ore horizon in shallow rim openings below the main mine workings on the north rim, and a few holes to explore this possibility away from the rim are probably advisable, but the maximum depth would be 200 feet rather than the 300 feet proposed.

McLelland is aware of these requirements. He has completed most of the geologic mapping of the mine workings, but mapping of rim exposures remains to be done. It was not possible to outline a revised drilling pattern during the field examination without first having this information.

It is recommended that the Region IV DMEA Field Team request the applicant to submit a revised program based on geological considerations, limiting hole depth to a maximum of 200 feet, and confining drilling to the more favorable areas.

A copy of a compromise boundary agreement which McLelland states has been made with the property owners on the north should also be furnished.

M. H. Salsbury,
Mining Engineer

MHS/dj

cc: 3
DMEA 3518
Chron

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

Transmitted

January 4, 1955

Memorandum JAN 19 1955

To: DMEA Field Team, Region IV

From: E. N. Harshman

Subject: DMEA Docket 3518 (uranium), Margaret Ruddock, Depression, Rainbow, Wasp, and Rim claims, Mesa County, Colorado

Enclosed are 10 copies of a geologic report by Lee J. Eicher of the U. S. Geological Survey covering the above docket.

The subject property is on Flat Top Mesa in an area characterized by ore bodies with maximum dimensions of: 1/2 to 3 feet thick, 3 to 15 feet wide, and 25 to 70 feet long. Generally the deposits occur in groups but the size of the mineralized area rarely exceeds 80 feet in width and 110 feet in length.

Eicher concludes that the exploration program proposed by the applicant is not well adapted to the character of the deposits and that its execution would not result in a significant discovery. He suggests that detailed geologic mapping by the applicant might furnish data upon which to base a more logical exploration program. The geologic report supports the conclusions.

I concur in Eicher's recommendation that the application for exploration assistance be denied, such denial to be made without prejudice to a possible future application in which known geologic conditions form the basis for the proposed exploration program.

E. N. Harshman
E. N. Harshman
Member, Field Team

Enclosures (10)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 27 1955

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 360
GRAND JUNCTION, COLORADO

Transmitted
JAN 19 1955

December 31, 1954

Memorandum

To: E. N. Harshman, DMEA Field Team, Region IV

From: Arnold L. Brokaw

Subject: DMEA 3518, Margaret Ruddock, Depression, Rainbow, Wasp, and Rim claims, Mesa County, Colorado

Transmitted herewith are 10 copies of a geologic report and accompanying maps by Lee J. Eicher, covering a field examination of the above-referenced property.

Field examination of the property shows that geologic conditions may be favorable for the occurrence of uranium deposits. However, the deposits are likely to be small, and the drilling program proposed by the applicant would be unlikely to discover the small deposits. Eicher recommends that DMEA assistance be denied until the applicant prepares a detailed geologic map showing expected trends of favorable ground and a logical drilling program based on geologic mapping. I concur with Eicher's recommendations.

The application was brought to the attention of the Exploration Division, Grand Junction Operations Office, U. S. Atomic Energy Commission, and the Commission was asked for its help and advice in evaluating the property.

T. E. Mullens
For Arnold L. Brokaw

Enclosures

TEM/mlr

UNITED STATES DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3518, Margaret Ruddock, Depression, Rainbow, Wasp, and Rim claims
Mesa County, Colorado

Uranium

Geologic Report

by

Lee J. Eicher
U. S. Geological Survey

December 31, 1954

INTRODUCTION AND SUMMARY

Margaret K. Ruddock, represented by Cal Uranium Company, has applied (DMEA Docket No. 3518) to the Defense Minerals Exploration Administration for aid to conduct exploration for uranium ore on the Depression 1 through 6, Rainbow 1 and 2, Wasp 1 and 2, and Rim 1 through 8 claims. The subject claims are located in an unsurveyed portion of T. 50 N., R. 18 W., N.M.P.M., Mesa County, Colo. (fig. 1). The applicant proposes to do 900 feet of diamond core drilling and 30,000 feet of non-core drilling at a total estimated cost of $30,170.

The property was examined November 18, 1954, by M. H. Salsbury, U. S. Bureau of Mines; L. J. Eicher, U. S. Geological Survey; and J.I. McLelland, representative for the applicant.

The applicant's claims are located on the northern part of Flat Top Mesa in the central part of the Gateway mining district (fig. 1). The claims are accessible by two roads. One access road (18 mi.) connects with Colorado State Highway 141 about 4 miles northeast of Gateway, Colo. This road is very steep and becomes impassable during the winter and spring months. The other road extends east to Outlaw Mesa, then northeast to the Forest Service road on the Uncompahgre Plateau and connects with Colorado State Highway 141 about 15 miles southwest of Whitewater, Colo.

The applicant states that J. I. McLelland, geologist associated with Cal Uranium, would supervise operations. He appears capable to perform the necessary geologic and supervisory duties.

GEOLOGY AND ORE DEPOSITS

The rocks exposed in the vicinity of the applicant's property consist of Mesozoic sediments of the Upper Jurassic Morrison formation (fig. 2). The Morrison formation is subdivided into the Salt Wash member, which consists of sandstone and interbedded mudstone lenses, and the overlying Brushy Basin member, which consists primarily of variegated red and gray shales and several interbedded conglomeratic sandstone lenses.

All of the significant uranium-bearing deposits mined in the vicinity of the applicant's claims occur within the sandstone lenses in the upper one-third of the Salt Wash member of the Morrison formation. On fresh exposures the sandstones range in color from white to gray, or light red. Near deposits the sandstone is commonly speckled with limonite stains. The sandstone is composed dominantly of medium-fine to medium-sized quartz grains with minor amounts of interstitial clay and grains of white and pink chert and feldspart.

The sandstones are commonly lenticular and irregularly bedded. Scour and fill type of sedimentation formed thick elongated, narrow lenses that are composed of sandstone containing thin, discontinuous lenses of mudstone, thin zones of mudstone-pebble conglomerate, and abundant fragments and masses of carbonaceous material. Uranium-bearing deposits are commonly located in or near these "trash pockets". In the vicinity of the deposits the mudstone in contact with the sandstone is gray-green in color.

Individual ore bodies vary in size. Minimum and maximum dimensions are: 1/2 to 3 feet thick, 3 to 15 feet wide, and 25 to 70 feet long. The ore bodies are commonly connected by a thin, continuous seam of mineralized material. The average mineralized area (group of deposits) is 50 - 80 feet wide and 80 - 110 feet long.

The applicant's claims on Flat Top Mesa have produced 1,300 tons of ore averaging 0.56 percent U_3O_8 and 2.80 percent V_2O_5 during the period 1948 through September 1954.

PROPOSED EXPLORATION

The applicant proposes to explore the subject claims by means of 3 deep (300 feet) diamond-drill core holes and 300 wagon-drill holes. The wagon-drill holes are proposed in a 3-stage drilling plan with stage 2 dependent on stage 1 and stage 3 dependent on stage 2. The spacing of the stage 1 wagon-drill holes is 300 feet to search for favorable areas. The spacing of holes in stages 2 and 3 is 100 feet and these holes would be drilled in any favorable areas found in the stage 1 drilling.

As all available information shows that the uranium-bearing deposits are less than 100 feet in diameter and the favorable areas are probably not much larger, this plan of drilling does not seem feasible. Also, geologic guides to areas favorable for the occurrence of deposits normally cannot be obtained from wagon-drill information.

A suggested alternative would be to map the detailed geology of the upper part of the Salt Wash member. Mapping would give information as to the favorableness of the outcrop of the Salt Wash sandstone units. A minimum of diamond-drill holes would then be drilled in specified areas to further delimit the favorable areas. This would logically be followed by a number of closely-spaced (50 to 100 feet) holes in the favorable areas to search for the uranium-bearing deposits. The closely-spaced holes would probably be drilled by wagon-drill methods. Although no accurate assays could be obtained by this method, the approximate depth, thickness, and grade of the mineralized material could be obtained by using a gamma-ray unit to probe the holes.

Therefore, it is suggested that the applicant complete a geologic map of the area showing the location and thickness of the sandstone units in the upper part of the Salt Wash member, thickness of green mudstone in contact with these sandstones, and the presence and relative amount of carbonaceous material in these sandstones. With the above geologic information, the applicant can probably submit a more logical proposed drilling program.

CONCLUSIONS AND RECOMMENDATIONS

Field examinations of the subject property shows that geologic conditions may be favorable for the occurrence of uranium-bearing deposits. The deposits are likely to be small targets that would not be discovered by the applicant's proposed drilling program. It is recommended that the application be denied until the applicant submits the suggested geologic map, accompanied by a more logical proposed drilling program.

Adams
Selfridge
Fehlman
Mitchell

OCT 14 1954

re: Docket No. DMEA-3518 (uranium)
Margaret K. Ruddock
Mesa County, Colorado

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

Dear Mr. King:

This will acknowledge your memorandum dated October 7, 1954, regarding the correct Docket Number for the application submitted by Margaret K. Ruddock (uranium), Mesa County, Colorado.

Please be advised that the correct number is Docket No. DMEA-3518.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB)

APPROVED:

J. H. Hedges

Member, Bureau of Mines (JHB)

Thor H. Kiilsgaard

Member, Geological Survey (JHB)

REAdams/la/10-11-54

Copy to: Operating Committee
Adm. Reading File
~~Mails~~ and Files

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

224 New Customhouse
Denver 2, Colorado

October 7, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region 1V

Subject: Application of Margaret K. Ruddock (Uranium)
Mesa County, Colorado

On October 6, 1954, the subject application was returned to this office bearing Docket No. 3418. On October 7, 1954, a memorandum from Robert Adams, Chief, Operation's Control and Statistics Division, was received assigning Docket No. DMEA 3518 to the application.

We believe the Docket No. 3518 to be the correct one. Please advise.

W. H. King

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

OCT - 4 1954

224 New Customhouse
Denver 2, Colorado

October 1, 1954

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: Code 200

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docketing for Exploration Assistance

Enclosed herewith in duplicate is DMEA Form 3a and MF-103 with supporting data pertaining to the following application for Government assistance in exploration work.

Margaret K. Ruddock (Uranium)
Mesa County, Colorado

W. H. King

Enclosures

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

224 New Customhouse
Denver 2, Colorado

OCT - 4 1954

October 1, 1954

Memorandum

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Enclosed herewith in duplicate is DMEA Form 3a and MF-103 with supporting data pertaining to the following application for Government assistance in exploration work.

Margaret K. Ruddock (Uranium)
Mesa County, Colorado

W H King
W. H. King

Enclosures

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

Defense Minerals Administration
RECEIVED
OCT - 4 1954

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

Not to be filled in by applicant

Docket No. 3518
Metal or Mineral Uranium
Date Received
Estimated Cost $30,130
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Mrs. Margaret K. Ruddock
1000 Gatsby Bldg., Southwestern Development Co.
Los Angeles, California.

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

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

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

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

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

See attached sheet

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

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

Purchaser under contract

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

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

None

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

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

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

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

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

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

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Uranium and Vanadium

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

(*c*) The work will start within 60 days and be completed within 4 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated August 10, 1954, 195

Margaret K. Ruddock
(Applicant)

By Merritt K. Ruddock

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

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

MARGARET K. RUDDOCK
% Southwestern Development Co.
1000 Quinby Bldg.
Los Angeles, California

Form
MF-103

UNITED STATES DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

1. NAME OF APPLICANT

(a.) Margaret K. Ruddock
% Southwestern Development Company
1000 Quinby Bldg.
Los Angeles, California

(b.) Not applicable

(c.) Not applicable

(d.) Not applicable

3. APPLICANTS PROPERTY RIGHTS

(a.) 18 unpatented lode claims, i.e. Depression 1 through 6 inclusive, Rainbow 1 and 2, and Wasp 1 and 2, and Rim 1 and through 8, inclusive. These claims are located in an unsurveyed area, but Township and Range lines have been taken from the USGS Quadrangle Sheet. These indicate that T. 50 N., R. 18 W. be the proper designation. The claims are located in the Gateway district, Mesa County, Colorado.

MARGARET K. RUDLOCK
% Southwestern Development Company
1000 Quinby Bldg.
Los Angeles, California

3. APPLICANTS PROPERTY RIGHTS (cont.)
(b.)
(b.) Depression 1 - 6, Rainbow 1 and 2, Wasp 1 and 2, Rim 1 - 8, inclusive.

(c.) Some of the claims--the Depression 1-6, Rainbow 1 & 2, and the Wasp #1 were purchased under contract (attached) from Mr. Jess Tramel of Grand Junction, Colorado. The Rim claims were staked recently on open ground.

(d.) See above.

(e.) Mr. Tramel has received one half the total purchase price for his claims listed in (c.) above. Fianl payment is due at his request on January 1, 1955. There are no liens or encumbrances on the Rim claims for which DMEA assistance is also being applied.

MARGARET A. RUDDOCK
% Southwestern Development Company
1000 Quimby Bldg.
Los Angeles, California

Form
MF-103

3. Applicants Property Rights, (cont.)

(f.)

CLAIM NAME	BOOK NO.	PAGE NO.	COUNTY
Depression 1	291	463	Mesa, Colo.
Depression 2	291	463	"
Depression 3	291	464	"
Depression 4	291	464	"
Depression 5	291	465	"
Depression 6	291	465	"
Rainbow 1	591	166	"
Rainbow 2	591	165	"
Wasp	509	407	"
Wasp 1	509	406	"
Rim 1			"
Rim 2			"
Rim 3			"
Rim 4	NOT YET AVAILABLE		"
Rim 5			"
Rim 6			"
Rim 7			"
Rim 8			"

4. PHYSICAL DESCRIPTION

(a.) For the past several years, Mr. Jess Trammel, of Grand Junction, Colorado, has been operating the Flat Top Mesa properties, i.e. the Rainbow, Wasp, and Depression groups of claims and mining uranium ore. Two men have been engaged in the production of ore from these properties.

Though shall mines exist on the Depression 1 through 6 claims and the Wasp 1 and 2 claims, no operations have as yet taken place on the Rainbow claims 1 and 2, nor on the Rim claims No. 1 through 8, which have been newly staked. All of these old mine workings have been mapped and the mine maps showing relationships of the mine workings to the claim boundaries have been included in the geologists report.

During the year 1921, the Radium Corporation of Colorado did some wagon drilling and some core drilling to back up the existing mine workings. In no place did the drilling extend further back than 200 feet from the Rim. Some

(a.) (cont.)

record of this drilling is available and certified copies of the Radium Corporation of Colorado's records are attached. Also attached is a claim map and drill hole map showing location of drill holes drilled by the Radium Corporation of Colorado. It is to be noted that the number of drill holes does not coincide with the number of holes reported on the assay data sheet. The explanation is that the records are not available. Production facilities are quite limited at the present time and have been during the life of the property.

The property was purchased in the latter part of June, by Mrs. Margaret K. Ruddock of Los Angeles, California. Since that time three miners have been working the property, cleaning outdrifts and robbing pillars. As yet no provision has been made for improving access roads or shipping roads. There is no ore bin available on the property. All mine workings are accessable for purpose of examination.

(b.) Production, during the past 2 years was about 800 tons of uranium ore with an average grade of .60% uranium and 2.00% of vanadium. Exact quantities and grades of ore shipped from Flat Top Mesa properties are available at the Grand Junction Atomic Energy Commission ore reserve section, Grand Junction, Colorado.

(c.) See attached geologic report.

(d.) The areas accessable from either Grand Junction, Colorado, or Gateway, Colorado. Immediate access to the area is over the Calamity Hill; thence 9 miles in a westerly direction to Flat Top Mesa Proper. Access to the area can also be had by way of the Tayler ranch which is about 22 miles from Grand Junction, via the White Water--Gateway road. The shipping distance to Gateway, Colo., is about 15 miles while shipping distance to Grand Junction, Colo., would average 55 miles. Supply and residence points are available in Grand Junction, Colo.

(e.) Manpower, materials, supplies, and equipment are available from well stocked warehouses in Grand Junction, Colo. Water is available from West Creek and from springs near the property. Power is not available on the property and must be supplied by diesel generators.

5. THE EXPLORATION PROJECT.

(a.) The minerals for which we wish to explore: Uranium.

(b.) The proposed work will consist of one exploratory wagon drilling program to discover new uranium ore deposits on the parts of the Depression claims that have not been drilled, and on the Wasp, Rainbow, and Rim claims.

The plan is to space the initial holes on 300 foot centers to locate favorable areas, and then to close the spacings to 100 feet in favorable areas. The initial drill holes are plotted on an attached map.

Drilling depths to the favorable horizon will range between 60 and 100 feet. Three core type diamond drill holes will be drilled to acertain

(b.) cont.

exact depths to the mineralized horizons and to superficially explore horizons up to depths of 300 feet which are mineralized on the outcrops.

(c.) The work will start within 60 days and be completed within 4 months from the date of a project contract.

(d.) Mrs. Ruddock has assigned the operation of the Flat Top Mesa properties to Richard A. Teichman, Jr., Chief Geologist of Cal Uranium Company, Moab, Utah. Mr. Teichman has had two years experience with the USAEC supervising drilling programs and reconnaissance parties in the search for uranium ores. The Cal Uranium Company of Moab, Utah, is currently operating the San Juan Shaft, immediately north of the Mi Vida properties, in the Big Indian Wash area, San Juan County, Utah

6.

(a.)

1. DRILLING STAGE NO. 1

3 core-type diamond drill holes to a depth of 300 feet @ $3.00 per foot:	$2,700
100 wagon drill holes to an average depth of 100 feet @ $.65 per foot:	6,500

2. DRILLING STAGE NO. 2

100 wagon drill holes to an average depth of 100 feet @ .65 per foot.	6,500

3. DRILLING STAGE NO. 3

100 wagon drill holes to an average depth of 100 feet @ .65 per foot.	6,500
TOTAL ALL DRILLING STAGES:	$22,200

ROAD AND DRILL SITE CONSTRUCTION:

Drill sites, 15 days @ $100. per day	1,500
Road construction, 10 days @ $100. per day	1,000
Repairing 3 miles of access road, 9 days @ $100. per day	900
TOTAL ROAD AND DRILL SITE CONSTRUCTION:	$3,400

TOTAL:	DRILLING COST	$22,200
TOTAL:	ROAD AND DRILL SITE CONST.	3,400
TOTAL:	GEOLOGICAL WORK & SURVEYING	1,000
TOTAL:	BUILDING REPAIRS	870
TOTAL:	ANALYTICAL WORK	1,000
TOTAL:	MISCELLANEOUS	200
TOTAL:	CONTINGENCIES	1,500
GRAND TOTAL:		$30,170

(b.)	Geologists and Surveyor--pro-rated by stages		$1,000
(c.)	none		
(d.)	none		
(e.)	Repairs to existing buildings to be used for office space and living quarters:		
	Lumber	$300	
	Roofing	30	
	Labor	500	
	Misc	40	
			$ 870
(f.)	none		
(g.)	Analytical work: assay for uranium and vanadium, 200 samples @ $5.00		$1,000
	Accounting		$ 200
(h.)	Contingencies		$1,500
	TOTAL:		$4570.00

GEOLOGIC REPORT

GEOLOGIC REPORT on FLAT TOP MESA

GATEWAY MINING DISTRICT, MESA COUNTY, COLORADO

T. 50 N., R. 18 W.

by

RICHARD A. TEICHMAN

AND

JACK I. McLELLAND

June, 1954

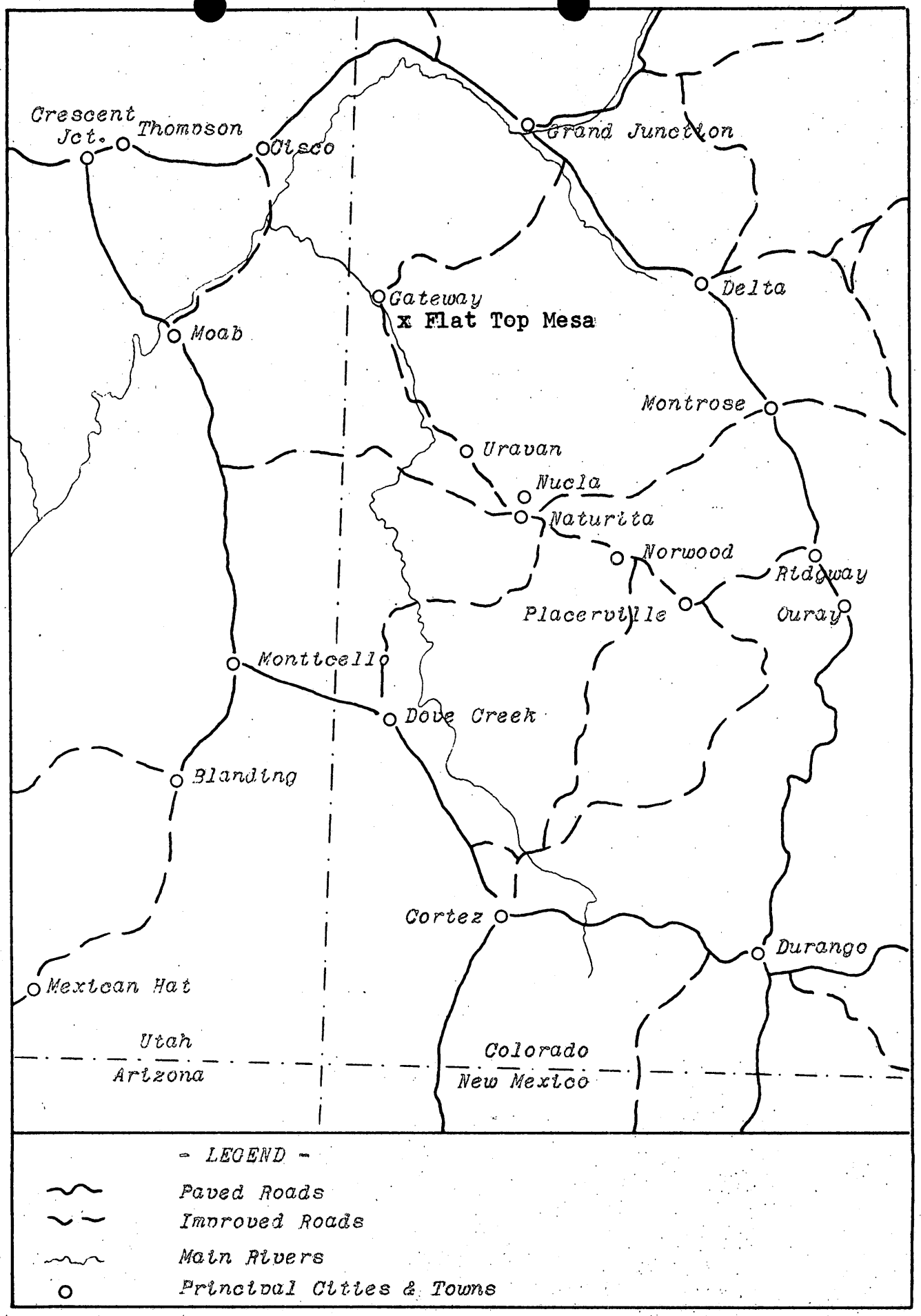

FIGURE - - INDEX MAP, COLORADO PLATEAU AREA

ooO CONTENTS Ooo

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1. Introduction	1
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5. Geology	4
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7. Edonomic Geology	6
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ILLUSTRATIONS

1. Index Map, Colorado Plateau Area

2. Drill Hole Map, Radium Co, of Colorado, (Back Cover)

3. Drilling Records, Radium Co, of Colorado, (Back Cover)

4. Proposed Drilling Area and Claim Map, Magaret K. Ruddock Property, Flat Top Mesa, Mesa County, Colorado.

INTRODUCTION

During the months of May, June, and July, 1954, a reconnaissance of Flat Top Mesa, Mesa County, Colorado was undertaken at the request of Mrs. Margaret K. Ruddock of 1000 Quinby Building, Los Angeles, California, to determine whether or not sufficient justification existed to recommend the Depression, Rainbow, Wasp, and Rim groups of claims for a DMEA loan under the provisions of DMEA Order #1, dated March 7, 1952. (Subsequently ammended to provide assistance for uranium exploration in the amount of 75% of the total.)

Specifically, the objectives of the reconnaissance were:

1. To assess the potential of the Depression, Wasp, Rainbow, and Rim groups of claims, located on Flat Top Mesa, Mesa County, Gateway, Colorado.

2. To determine whether or not ore trends could be projected through the Mesa.

3. To evaluate information available from properties owned by Mrs. Ruddock and from surrounding properties, to assess the probability of discovering ore bodies of commercial size within the confines of the property.

Approximately one square mile of property was examined during the course of the reconnaissance. One of the reporting geologist, formerly employed as a geologist by the US AEC, is familiar with the geologic setting of the Uravan mineral belt, having been assigned to the Polar Mesa district as assistant

project geologist, and to the Blue Hill district as Project Geologist for the USAEC.

The Depression, Rainbow, Wasp, and Rim groups of claims are located in an unsurveyed area in T. 50 N., R. 18 W. (See index map.)

LOCATION AND ACCESSIBILITY

Flat Top Mesa is located in the 'Uravan Mineral Belt', three miles south of Tenderfoot Mesa, and one mile east of Calamity Mesa, and about 3/4 of a mile east of the Dolores River.

Access to the area is by way of Grand Junction, Colorado, in a southwesterly direction for a distance of 46 miles over Colorado Highway 141; thence in a southeasterly direction over dirt roads (Calamity Hill) for a distance of 7 miles; thence a southwesterly direction over a distance of 9 miles over fair to poor roads to the property. The stretch of 3 miles just before the property is reached is in very poor condition where the road cuts up and over the Entrada formation and some road work needs to be done.

Ore from the area is being shipped either 50 miles to the USV mill at Uravan, or 100 miles to the USV mill at Rifle, Colorado.

PAST AND PRESENT MINING ACTIVITY

Production of uranium and vanadium ores from the area has been confined to the upper sandstone lenses

of the Salt Wash member of the Morrison formation.

In the early 1920's the properties were operated by the Radium Company, of Colorado. Some small amount of drilling was done and the locations of the holes and the assay data are attached to this report. ~~Figs. and .~~ SEE BACK COVER

The available "Abstract of Title" indicates that the Depression claims 1 - 6 were located on August 11, 1933 by Mr. R. E. Adams and sold to Mr. Tramel in 1950. The Rainbow 1 & 2 were located on May 6, 1948, and filed on August 4, 1948 by Jess Tramel. The Wasp and the Wasp #1 were located in August 27, 1949, by Jess Tramel.

The Depression 1-6, inclusive, the Rainbow #2, and Wasp & Wasp #1 were purchased by Mrs. Ruddock in May of 1954. During the course of the survey of the properties, a large acreage was noted to be unclaimed. This acreage was claimed and the Rim claims 1-8 staked in June of 1954.

Mr. Tramels' operations on the Depression, Rainbow and Wasp groups have been on a very small scale, although good showings are apparent in several places in the mines.

All mines on the properties have been mapped and mineralization noted. ~~(Fig.)~~ In no place does the working extend further than 150 feet beyond the rim. ~~Past production as obtained from the USAEC are outlined in Table 1.~~

The property is now being operated on a small scale by miners employed by Mrs. Rudlock. Drifts are being claened out, and a small amount of ore is being stock-piled.

Thirteen additional claims are located on the Mesa. These are owned by Harvey Thomas of Price, Utah. No record of production is available, nor any operating history.

GEOMORPHOLOGY AND CLIMATE

The elevation of the district ranges from 5,000 feet near the Dolores River, west of Flat Top Mesa, to approximately 7,000 feet on the mesa.

The topography is of the mesa--canyon--type, typical of the arid parts of the Colorado Plateau, in the partial stripping of an arid plateau whose rocks are of unequal strength and not far from horizontal. The retreating escarpment is ~~as~~ common as the canyon wall, and mesas result.

The climate is semi-arid with precipitation amounting to approximately 20 inches per year.

Vegetation consists of small Juniper and Pinon trees.

Working conditions are good throughout the year, although seasonal rains and snows make roads impassable.

GEOLOGY

No detailed reconnaissance or geologic report has been written on the Flat Top Mesa area, but good

coverage has been given the 'Uravan Mineral Belt' and certain parts of Calamity & Outlaw Mesa by the USGS. Two of the reports frequently cited are:

1. Geology of the Uravan Mineral Belt, Fischer, R.P. and Hilpert, L.S., USGS Bull. 988A 1952.

2. Vanadium Deposits of Colorado and Utah, Fischer, R.P., USGS Bull. 936-P 1942

The rocks exposed in the area range in age from the Triassic Chinle formation to the Cretaceous Dakota Sandstone. The principal uranium and vanadium bearing horizons are the upper sandstone lenses of the Salt Wash member of the Jurassic Morrison formation.

The Salt Wash member of the Jurassic Morrison formation contains all the known uranium and vanadium deposits in the area.

The Salt Wash is 280 feet thick on Flat Top Mesa. The Brushy Basin member of the Morrison formation has been eroded off.

The Salt Wash is composed of lenticular beds of gray, medium-grained, current bedded sandstone, alternating with and replacing red and gray, sandy clay and mudstone.

A zone of widespread bench-forming sandstone beds at the top of the Salt Wash contains most of the important uranium and vanadium deposits, but sandstone beds 50 feet below this zone also contain commercial deposits in places.

TECTONIC STRUCTURES

Structurally, Flat Top Mesa is located on the flank of a broad northwest trending syncline, into which the rocks dip at low angles from the uncomphagre uplift on the northeast and from the Sinbad Valley anticline and the La Sal mountains on the southwest.

ECONOMIC GEOLOGY

The uranium deposits on Flat Top Mesa are similiar in mineralogy and occurence to those in neighboring parts of Colorado and Utah. The ore is principally a fine-grained, gray, micaceous mineral that coats the sand grains and partly or entirely fills the pore spaces of the sandstone, and generally some bright yellow carnotite is mixed with this mineral.

Fossil logs, plant remains and other carbonaceous debris is common in the host rock. Some of the plant material is highly mineralized, and the sandstone surrounding the plant remains is usually mineralized. The clay beds and shales within and underlying the mineralized sandstones are also mineralized.

The ore bodies on Flat Top Mesa range from small deposits only a few feet across to large deposits 50 - 100 feet across and 8 feet thick. Average size rolls and deposits contain hundreds of tons each and the deposits appear to be numerous.

Throughout the area a tabular body of ore 3 inches to 6 inches thick is almost universally found. This tabular deposit bisects rolls and small masses of ore and is essentially horizontal. This layer is sometimes too thin to mine, but it does connect deposits of mineable thickness, and can be followed as a lead.

The cylindrical masses of ore, several of which have been mined out on Flat Top Mesa are commonly called rolls. These rolls are elongated parallel to the sandstone bedding.

On the Depression and Rainbow properties, it has been noticed that these rolls are parallel in orentation and their direction also coincides with the orientation of ripple marks and lineation.

Carnotite and Tyuyamunite are the chief uranium minerals identified from the area, and corvusite was the chief vanadium mineral.

CONCLUSIONS & RECOMMENDATIONS

During the course of the examination of the properties on Flat Top Mesa, several things became immediately apparent. They are:

1. The present mine workings occupy an area of only 240,00 square feet out of an available 18,000,000 square feet of property.

2. Ore trends as measured in the field vary between due north and N 15° W. allowing projection of favorable trends through the Depression, Rainbow, and Rim groups of claims.

3. Only a small amount of drilling has been done on the properties, and that by the Radium Company of Colorado, in the early 20's. (The only available record is enclosed.)

4. In no place does prior drilling extend further than 150 feet behind the rim, and no drilling has been done on the Wasp, Rainbow, or Rim claims.

On the basis of the above conclusions, the following recommendations are made:

1. A program of exploratory drilling is recommended for the Depression, Rainbow, Wasp, and Rim groups of claims.

2. A modest road building program is recommended to repair existing roads into the area, particularly the last 3 miles of access roads to the property.

3. The construction of an ore haulage road and ore bins is recommended on the west side of the mesa near the existing portals.

4. The existing building be repaired.

DIAMOND CORE DRILLING on FLAT TOP MESA

in T 50 N, R 18 E, NMPM N.E. Adams

prweent claimant, old surveys by
J.S. James, Deputy US Min. Surveyor

	Vanadium		Uranium High		Uranium Poor	
	No.	Inches thick	No.	Inches thick	No.	Inches thick
1	16	6	17	22	4	14
2	28	6	35	12	15	2
3	41	1	63	18	28	6
4	44	14	64	5	29	6
5	45	14	65	6	57	10
6	46	14	66	13	79	6
7	78	3	68	4	81	17
8	82	6	80	18	85	8
9	84	1	101	13	87	7
10	86	6	162	67	157	19
11	88	1	163	6	176	4
12	90	2	164	7	232	6
13	93	2	165	48	235	30
14	80	6	169	10	262	1
15	152	1	172	34		
16	154	17	175	65		
17	177	3	199	4		
18	179	3	220	18		
19	201	1	221	18		
20	223	3	229	3		
21	229	3	233	10		
22	230	3				
23	259	2				

Drilling by C.T. Wood for
Radium Co. of Colorado Inc.
(Probable Date 1921-23)

I certify that the above is a true and correct copy of the original drill log. Certified this 28th day of May 1954.

Robert J. Fellmeth, Notary Public
Robert J. Fellmeth
Moab, Utah
My Commission expires February 13, 1955

ADAMS & HECKMAN, Attorneys

201 Electric Building
GRAND JUNCTION, COLORADO

No. _____

Date June 17th - 1954

Credit
RECEIVED OF Richard Teichman

Fourteen Thousand no/100 Dollars

Cash _____
Ck _____
Memo _____

For: Court Costs _____ Expense _____ Insurance _____ Services _____

OTHER Check of Margaret Ruddock to be paid June 15th - 1954,
Payable to Jess Tramel
Payment on contract of Sale & Purchase of Claims
of Jess Tramel.

Credit
CHARGE:

ADAMS & HECKMAN

By Scott W. Heckman
Atty for Tramel

$ _____

4-48 2M SENTINEL PRINTERS

Claim Name	Book	Page	Rec. Date	County
Rim No. 1	608	43	6/18/54	Mesa
Rim No. 2	608	44	"	"
Rim No. 3	608	45	"	"
Rim No. 4	608	46	"	"
Rim No. 5	608	47	"	"
Rim No. 6	608	48	"	"
Rim No. 7	608	49	"	"
Rim No. 8	608	50	"	"

OCT - 4 1954

Recorded at 10:45 o'clock A.M. Jun. 17, 1954 Book 607 Page 509
Reception No. 604548 Annie M. Dunston, Recorder

DEPARTMENT OF THE INTERIOR
Bureau of Mines Minerals Administration
RECEIVED
OCT - 4 1954

OPTION TO PURCHASE MINING CLAIMS

THIS AGREEMENT made and entered into in duplicate as of May 17, 1954, between JESS TRAMEL and ELIZABETH TRAMEL, his wife, of Grand Junction, Colorado, hereinafter called OPTIONORS, and MARGARET KIRK RUDDOCK, of 151 Buena Vista Road, Montecito, California, or, in care of Cal Uranium, Moab, Utah, hereinafter called OPTIONEE, WITNESSETH:

That for and in consideration of the sum of $1,000.00, receipt of which is hereby acknowledged by Optionors from Optionee, Optionors do hereby give and grant to Optionee the exclusive right and option to purchase the following described mining claims in Gateway Mining District, County of Mesa, State of Colorado, the location certificates being duly recorded in the office of the County Recorder of said County and State, to-wit:

Name of Claim	Book	Page
Depression No. 1	291	463
Depression No. 2	291	463
Depression No. 3	291	464
Depression No. 4	291	464
Depression No. 5	291	465
Depression No. 6	291	465
Rainbow No. 1	491	166
~~Rainbow No. 2~~	~~291~~	~~165~~
Wasp	509	407
Wasp No. 1	509	406 -as amended in Book 590 at Page 86
Wasp No. 2		
Riverview, as to which		

location certificates to be recorded by Optionors; together with all buildings and improvements located upon said mining claims or any of them.

The total purchase price of the above described mining claims shall be Thirty Thousand Dollars ($30,000.00). Fourteen Thousand ($14,000.00) to be paid Optionors by Optionee on or before the 18th day of June, 1954 and the balance of Fifteen Thousand Dollars ($15,000.00) to be paid Optionors by Optionee on January 1, 1955, each of said payments to be made at the office of Adams, Hechman & Traylor, Electric Building, Grand Junction, Colorado.

Optionee shall have the right to go upon said mining claims for the purpose of examining, surveying and mapping of same, until June 18, 1954.

Upon the payment of the final installment of $15,000.00, Optionors shall execute and deliver, at their cost and expense, to Optionee or to her assignee, a good and sufficient Mining Deed to the above described mining claims, warranting to such purchaser that they have a good possessory title thereto, free and clear of all liens and encumberances, except, as against the United States, not including, however, any warranty of title to the said Wasp No. 2 and the Riverview claims.

In the event of the failure of Optionee to make either of

said payments of $14,000.00 or $15,000.00 at the times aforesaid, time being the essence hereof, Optionors shall have the right to keep and retain any such payment theretofore made, as and for liquidated damages and not as a penalty, and this agreement shall be null and void, as though it had never been written.

It is mutually agreed that Optionee after she has made such survey, may prepare Amended Certificates of Location of said mining claims or new location certificates covering any fractions that may be found to exist, which shall be executed and recorded by Optionors, in their names, at the expense of Optionee, all to be taken and considered as being within this Option to Purchase.

It is further mutually agreed that upon the payment of said sum of $14,000.00 at the time aforesaid, Optionee or her assignee shall have the right to mine and sell ores from any of said mining claims, oreshipments to be made in the name of Jess Tramel, and settlements to be paid to him out of which Optionors shall retain 25% of the proceeds of such sales, less haulage and development allowances, the remainder thereof to be promptly paid to Optionee or her assignee, such royalty payments to be applied upon the balance of the purchase price.

In the event of the assignment of this option by Optionee, she shall promptly notify Optionors, care of Adams, Heckman & Traylor, Box 266, Grand Junction, Colorado, accompanying such notice with a true copy of such assignment. It is finally agreed that this agreement shall innure to and be binding upon the heirs, personal representatives and assigns of the parties hereto.

~~WITNESS their Names:~~

Jess Tramel

Elizabeth Tramel

Optionors

Margaret M. A. Riddick

Optionee

STATE OF COLORADO } ss
County of MESA
I hereby certify that this instrument was filed for record
at 10 o'clock A M. JUN 11 1954
in Book 607 page 510
AM. M. DUNKSON, County Clerk & Recorder
By
Deputy

Recorded

E1042148

6-6-54

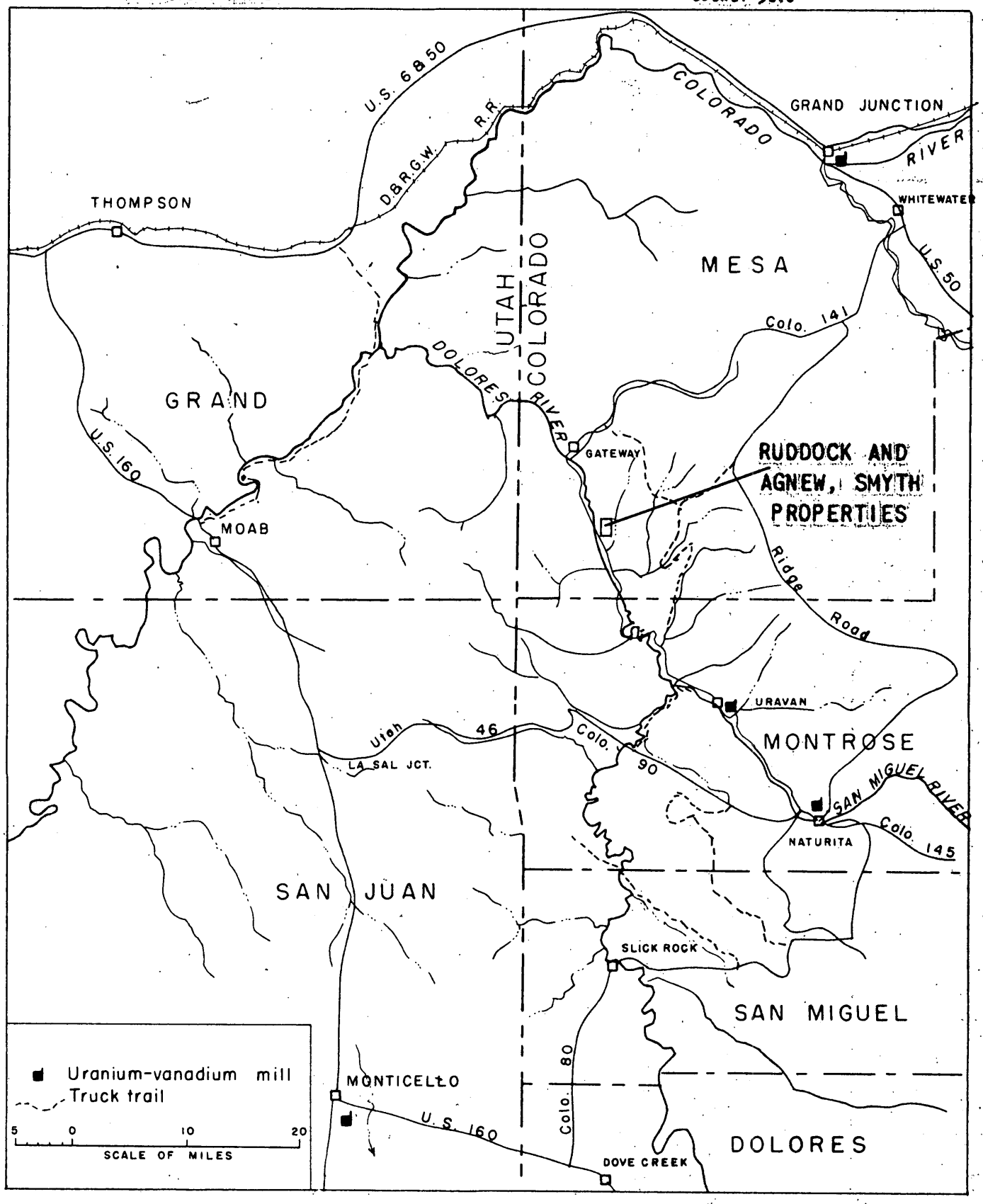


Figure 1. INDEX MAP OF PART OF COLORADO PLATEAU SHOWING LOCATION OF THE RUDDOCK AND AGNEW, SMYTH PROPERTIES, FLAT TOP MESA, MESA COUNTY, COLORADO

EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

U. S. GEOLOGICAL SURVEY
SOUTH 157 HOWARD ST.
SPOKANE 4, WASHINGTON

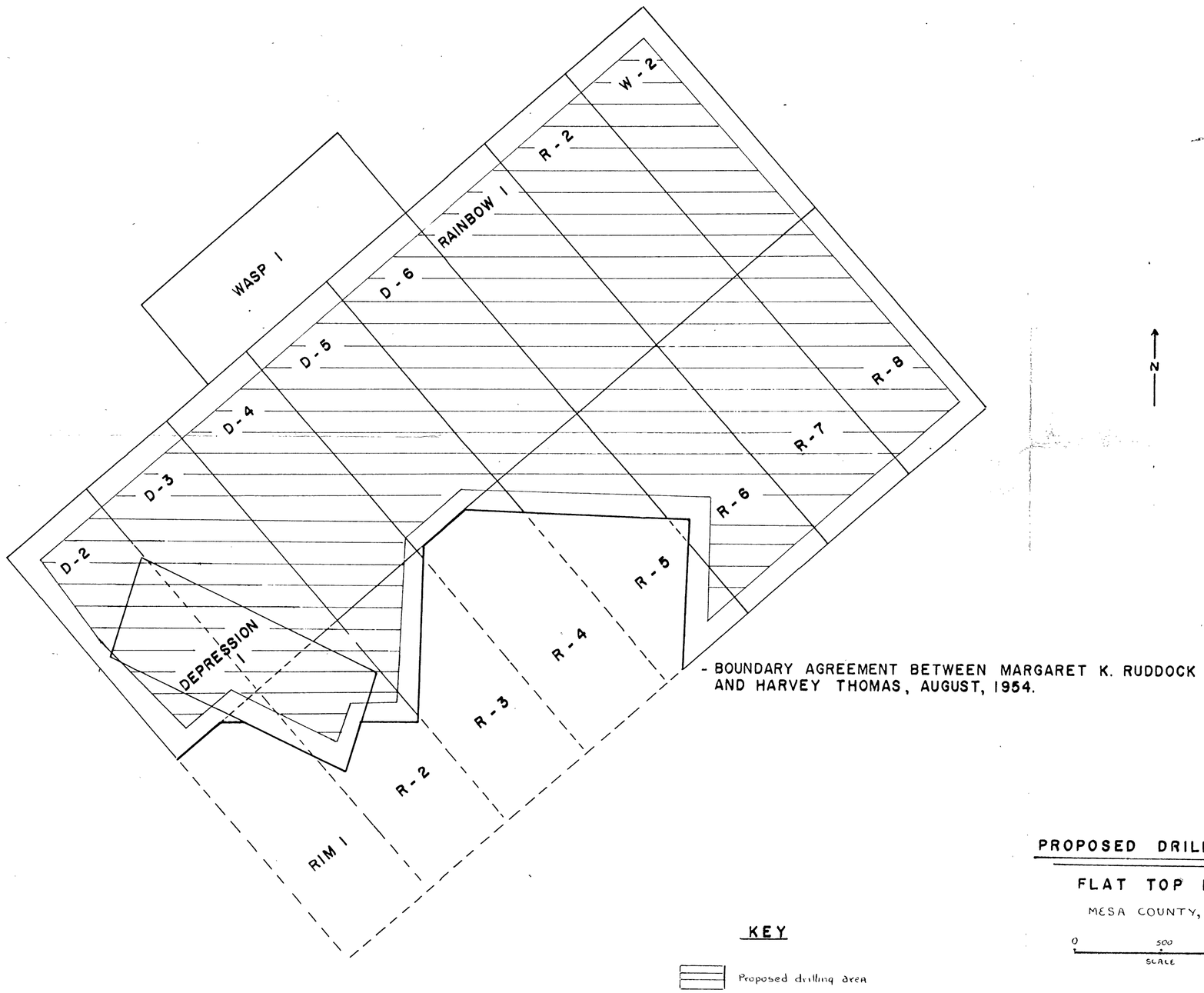
30 CENTS 30

DEC 5

VIA AIR MAIL

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

VIA AIR MAIL

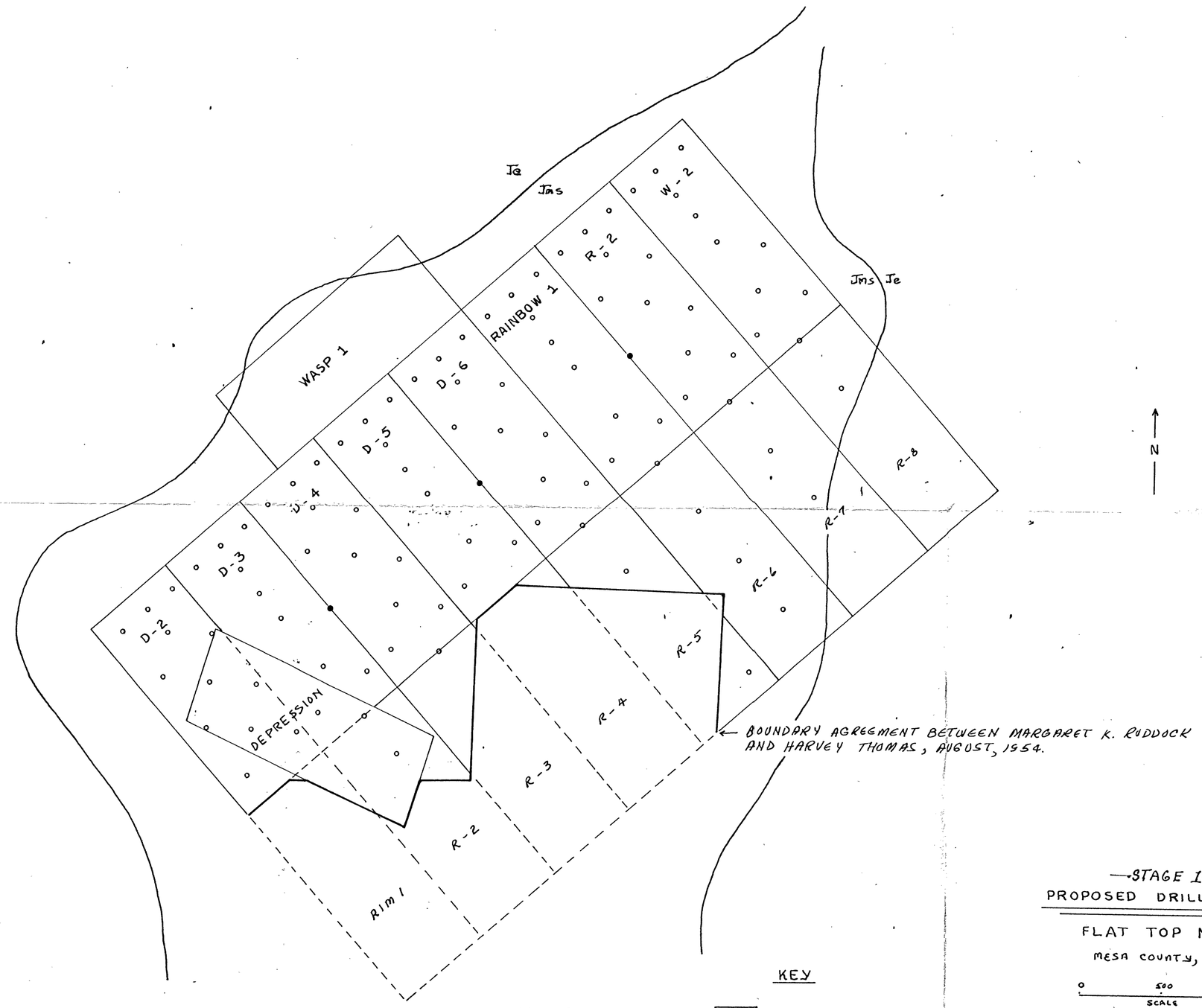


PROPOSED DRILLING AREA

FLAT TOP MESA

MESA COUNTY, COLO.

0 500 1000
SCALE



—STAGE I—

PROPOSED DRILLING PLAN

FLAT TOP MESA

MESA COUNTY, COLO.

0 500 1000

SCALE

KEY

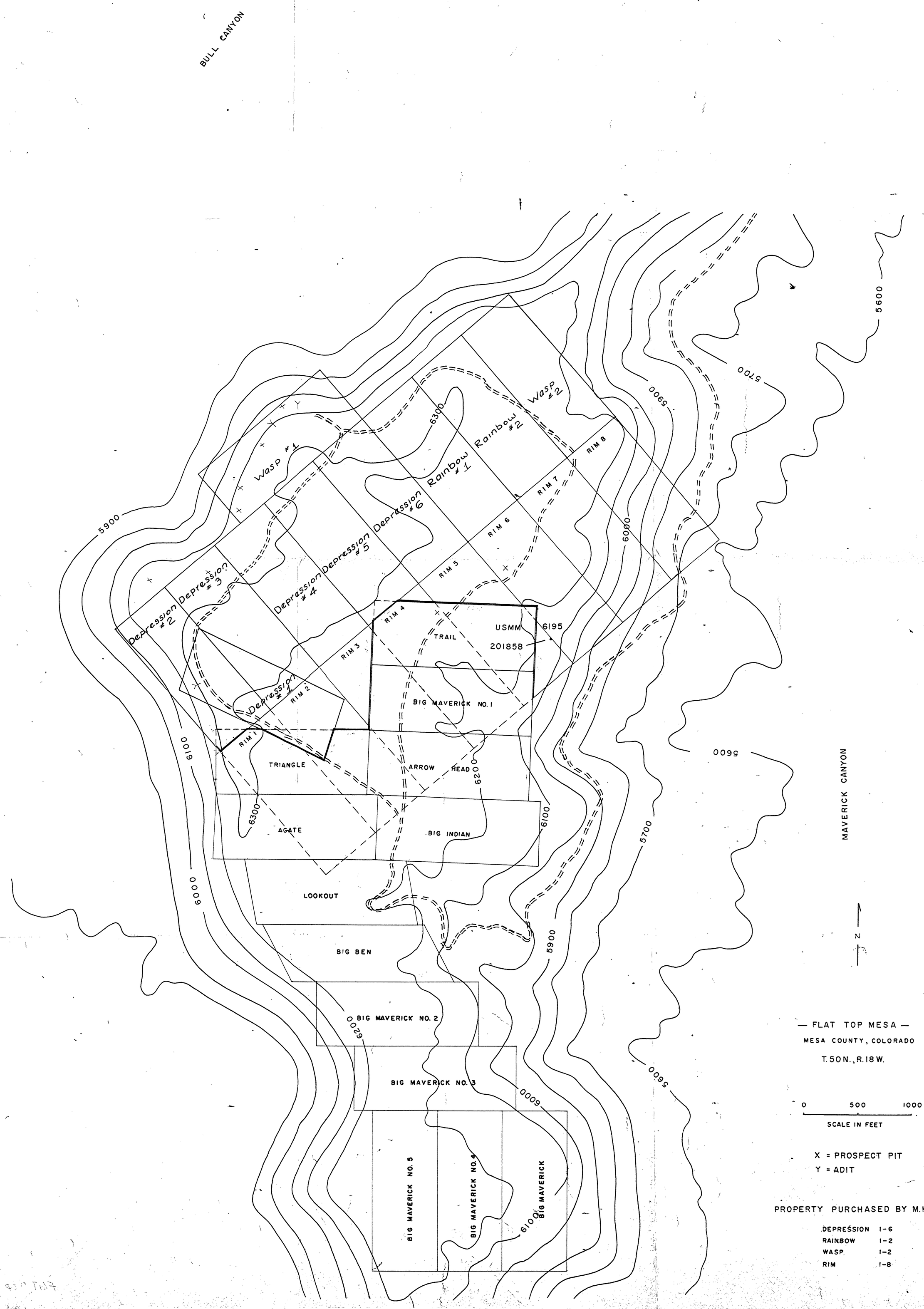
Jms = SALT WASH

Je = ENTRADA - Summerville

Proposed drilling Area

● - DIAMOND DRILL HOLES

O - WAGON DRILL HOLES



— FLAT TOP MESA —

MESA COUNTY, COLORADO

T. 50 N., R. 18 W.

0 500 1000

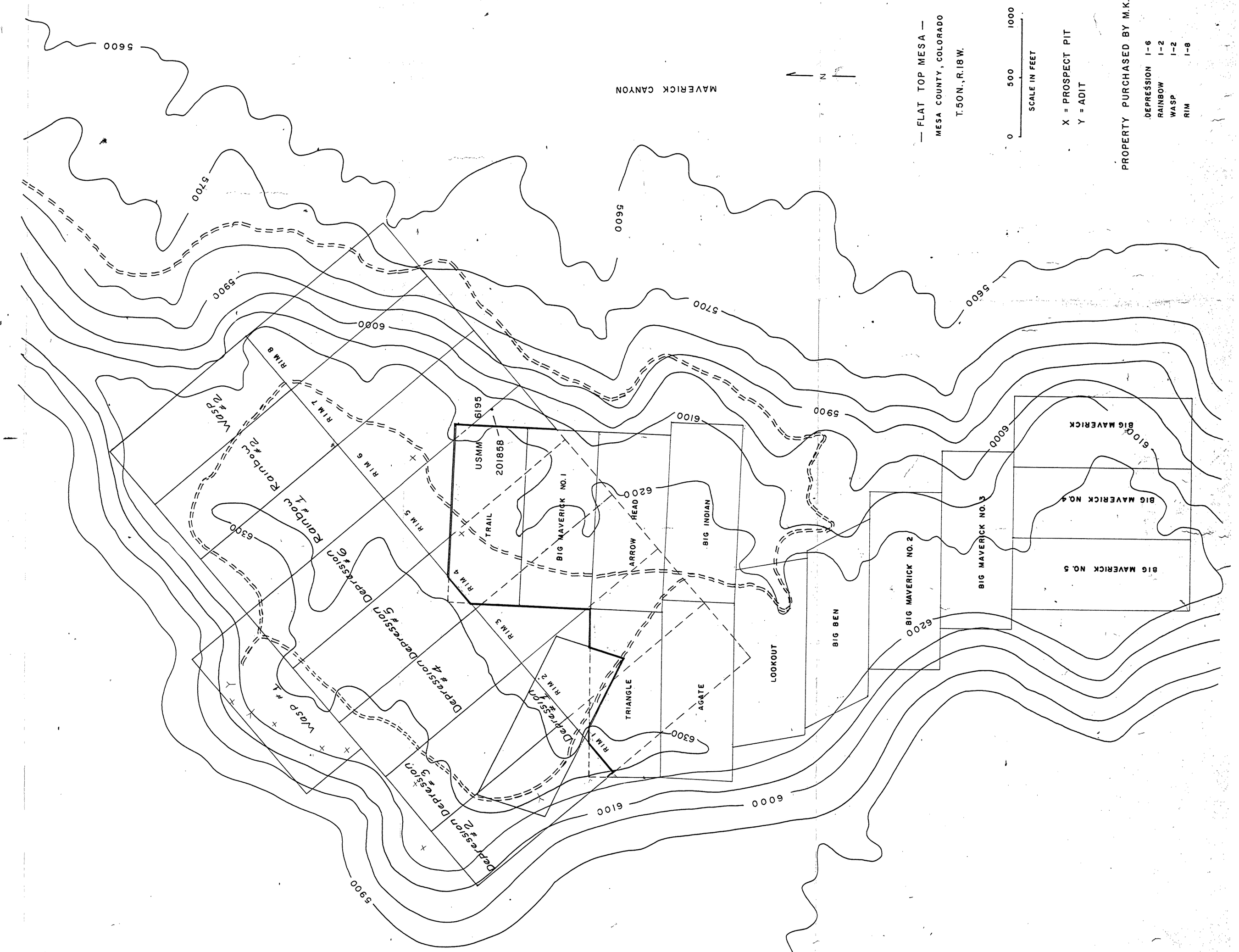
SCALE IN FEET

X = PROSPECT PIT

Y = ADIT

PROPERTY PURCHASED BY M.K.R.

DEPRESSION	1-6
RAINBOW	1-2
WASP	1-2
RIM	1-8


— FLAT TOP MESA —
MESA COUNTY, COLORADO
T.50N., R.18W.
0 500 1000
SCALE IN FEET
X = PROSPECT PIT
Y = ADIT
PROPERTY PURCHASED BY M.K.R.
DEPRESSION 1-6
RAINBOW 1-2
WASP 1-2
RIM 1-8
N
MAVERICK CANYON
BULL CANYON
5600
5700
5900
6000
6100
6200
6300
6195
USMM 201858
RIM 1
RIM 2
RIM 3
RIM 4
RIM 5
RIM 6
RIM 7
RIM 8
TRAIL
BIG MAVERICK NO. 1
ARROW HEAD
BIG INDIAN
TRIANGLE
AGATE
LOOKOUT
BIG BEN
BIG MAVERICK NO. 2
BIG MAVERICK NO. 3
BIG MAVERICK NO. 4
BIG MAVERICK NO. 5
BIG MAVERICK
Depression #1
Depression #2
Depression #3
Depression #4
Depression #5
Depression #6
Rainbow #1
Rainbow #2
Wasp #1
Wasp #2

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET 3518

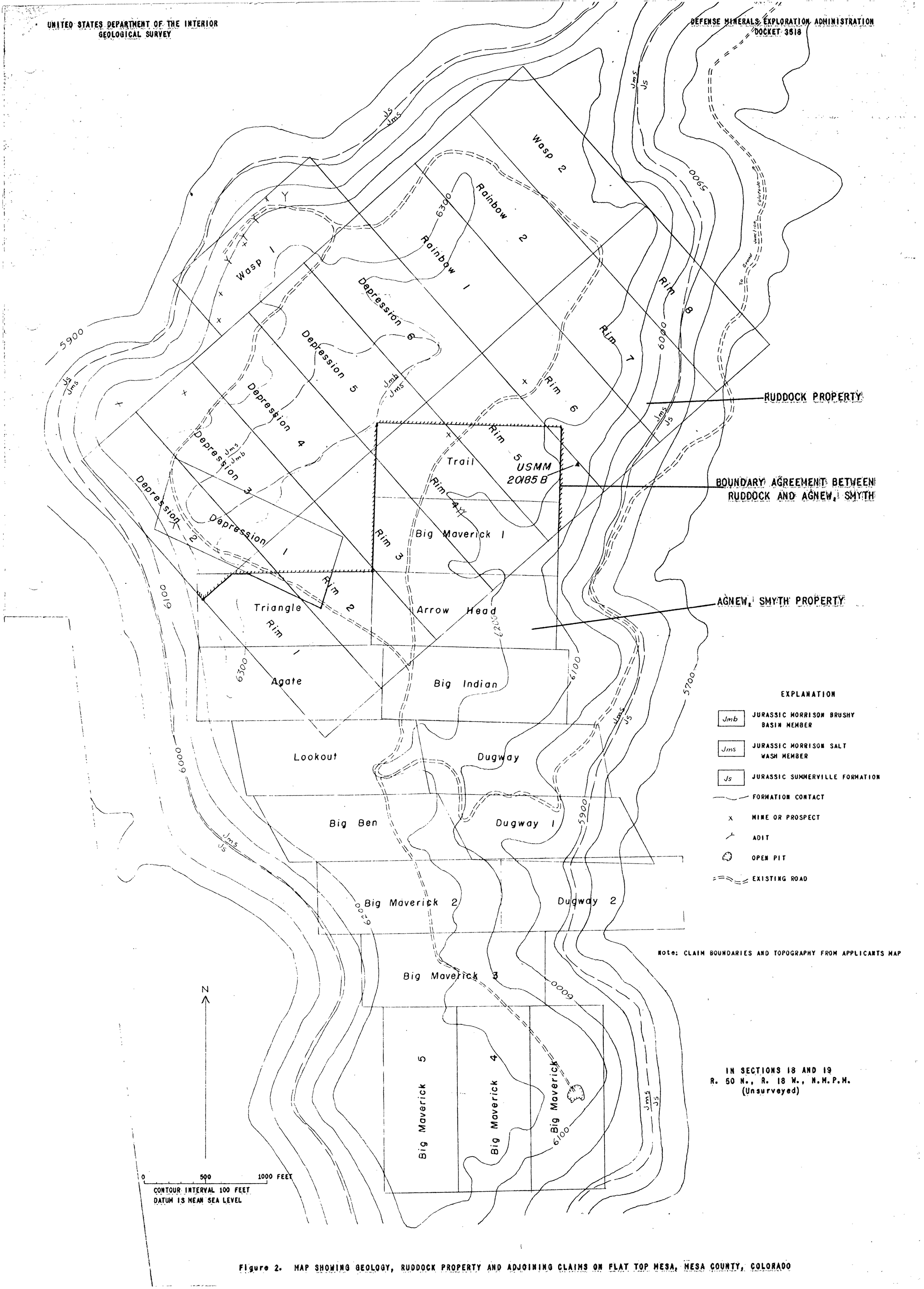
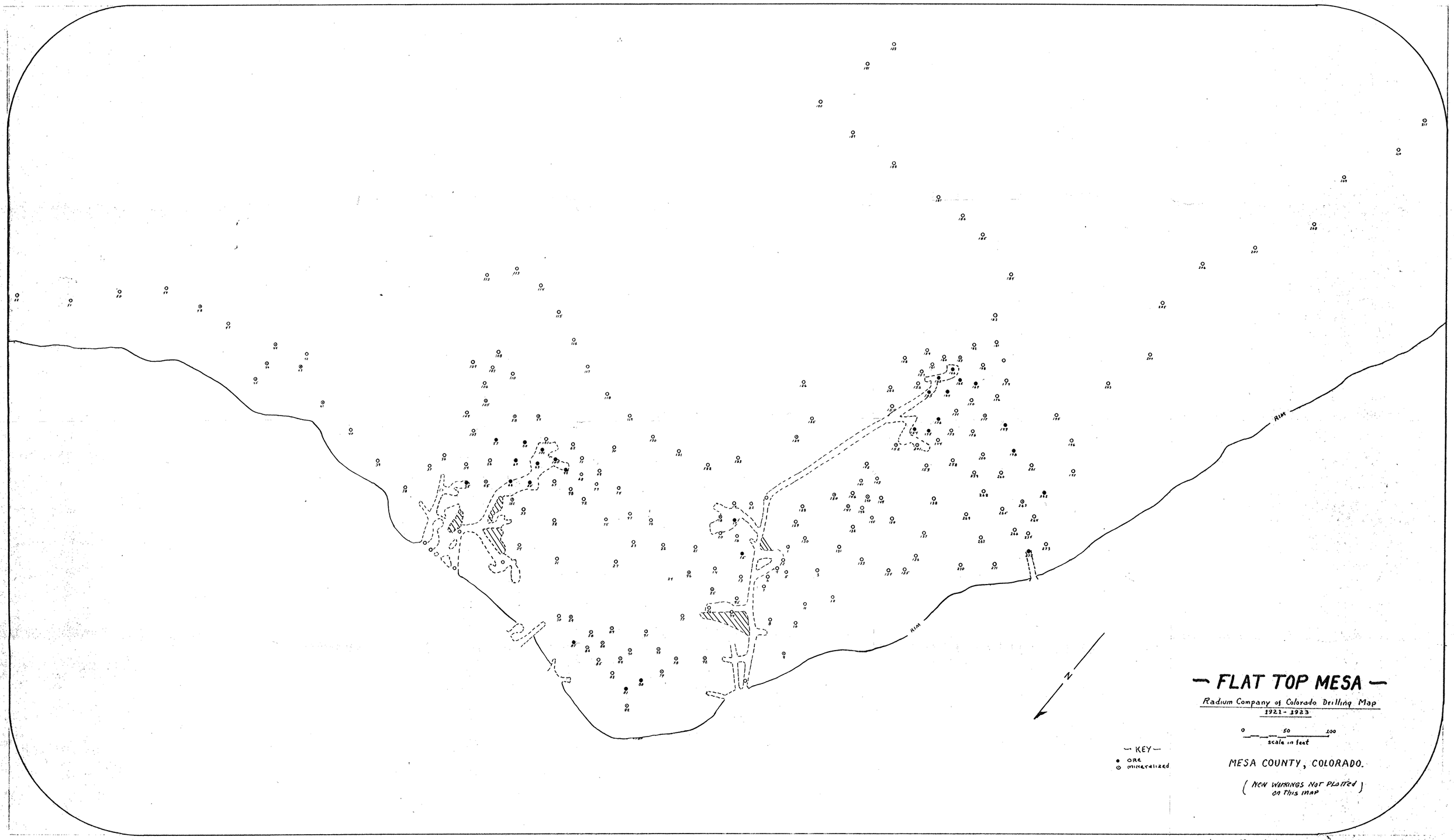


Figure 2. MAP SHOWING GEOLOGY, RUDDOCK PROPERTY AND ADJOINING CLAIMS ON FLAT TOP MESA, MESA COUNTY, COLORADO



— FLAT TOP MESA —

Radium Company of Colorado Drilling Map
1921 - 1923

MESA COUNTY, COLORADO.

(NEW WORKINGS NOT PLOTTED ON THIS MAP)