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

RECEIVED
OCT 10 1955

October 7, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3636 (Uranium), Atomic Power Uranium Corporation, Ford and Fordo claim group, Mesa County, Colorado

Enclosed are two copies of a letter to the applicant in accordance with the suggestions in your letter of October 3, 1955.

The request to the applicant on May 16, 1955 mentioned in Mr. Shaw's transmittal letter of September 13, 1955 was a telephone request to the applicant. Our memorandum to you dated September 15, 1955 was in error in calling this telephone request a letter.

W. M. Traver

Enclosures

D. O. McGOON, JR.
CHIEF GEOLOGIST
ATOMIC POWER URANIUM CORP.

RESIDENCE:
1326 OURAY AVENUE
TELEPHONE 1752-J
GRAND JUNCTION, COLO.

OFFICE:
404 EMPIRE BLDG.
PHONE ALPINE 5-1677
DENVER, COLORADO

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

RECEIVED
OCT 10 1955

October 7, 1955

224 New Customhouse
Denver 2, Colorado

Mr. Lucien Hugh Cullen, President
Atomic Power Uranium Corporation
404 Empire Building
Denver, Colorado

Re: Docket DMEA 3636 (Uranium),
Atomic Power Uranium Corporation, Ford and Fordo claim group, Mesa County, Colorado

Dear Mr. Cullen:

We have received no reply to our letters requesting additional information on the Ford and Fordo claim group. Because we are unable to hold applications in abeyance for an indefinite period, the docket has been closed.

If, at some later date, you have the information requested in our letter of June 17, 1955 and submit it together with a new application, it will receive proper consideration.

Very truly yours,

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

HMC:ab
cc: Chair. Opr. Comm. (2)
Shaw (2)
Harshman
Hasler
Docket 3636
Chron.

10/10/55 gla

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

RECEIVED
OCT 10 1955

October 7, 1955

224 New Customhouse
Denver 2, Colorado

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Wm. Traver
W. M. Traver

Enclosures

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

RECEIVED
OCT 10 1955

October 7, 1955

224 New Customhouse
Denver 2, Colorado

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Atomic Power Uranium Corporation
404 Empire Building
Denver, Colorado

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Atomic Power Uranium Corporation, Ford and Fordo claim group, Mesa County, Colorado

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Very truly yours,

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

HMC:ab
cc: Chair. Opr. Comm. (2)
Shaw (2)
Harshman
Hasler
Docket 3636
Chron.

Surname 700

Murphy
Ellis
Selfridge
Johnson

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

OCT 3 - 1955

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

Re: Docket No. DMEA-3636 (Uranium)
Atomic Power Uranium Corporation
Ford and Fords claim group
Mesa County, Colorado

Dear Mr. Traver:

This is to acknowledge your memorandum, dated September 15, and the enclosed copies of the report pertaining to the subject application; also, J. F. Shaw's memorandum, dated September 13, 1955, addressed to you, in which he recommends the application be denied because the Applicant had failed to submit the additional data requested by your office.

We do not have a copy of your letter of May 16 to the Applicant, but evidently the Applicant did not answer this or any of the follow-up letters from your office.

It may be possible that the Applicant felt that your request of June 17, for further information was not in order, because, during the field examination on April 27, the field examiners and the Applicant's representative had agreed on a pattern of drill holes to explore the subject property. It seems the only point of disagreement at that time was whether the holes in the first stage should be core or air-rotary drilled. The latter method being preferred by the Applicant's representative because of the lesser cost.

We have complied with your request of August 19, 1955, to close the subject docket. It is suggested that in your letter advising the Applicant that the docket has been closed, mention should be made that it could be reopened if the Applicant so desired and submitted the information you requested.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (GCS)

APPROVED:

P. F. Yopes (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

P. S. We are enclosing two copies of a memorandum dated September 29 by W. O. Williams, USGS, relating to this project.

Mr. Murphy
Code 700

Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5222
J. O. Hosted, Rm. 3210, GSA

Admr. Reading File
Operating Committee
Docket

FMMurphy:am
9-30-55
cc to:

9/30/55 gla

IN REPLY REFER TO:

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

RECEIVED

September 29, 1955

Memorandum

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

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

Subject: Review of Field Examination report, DMEA 3636, Atomic Power Uranium Corporation, Ford and Fordo claim group, Mesa County, Colorado.

The examining team concluded that the subject property was a favorable place for exploration, but a map of the Salt Wash member of the Morrison formation was needed. The map would be used to locate proposed drill holes. The applicant was asked by the Field Team to submit the map, but the applicant has not done so to date. Under the circumstances it appears that the application should be denied without prejudice.

In regard to this application I wish to point out that after the field examination the most important point to the applicant was whether or not he would be able to perform the work by air-rotary drilling methods at a quarter of the cost of core drilling. He expressed willingness to agree on hole locations suggested by the examining team. In my memorandum of transmittal from Grand Junction dated June 3, 1955, I recommended that the applicant be allowed to do the drilling with air-return methods. Although the Field Team has corresponded with the applicant two or three times we do not have copies of the correspondence. Consequently we have no way of knowing if the question of drilling methods has been settled with the applicant. I have the impression, from personal interview in Grand Junction with D. O. McGoon, representative of the applicant, that the applicant will not go to the expense of making the geologic map unless the drilling problem is solved.

The docket, to this date, does not seem to have been closed in the usual manner.

WPWilliams

W. P. Williams

IN REPLY REFER TO:

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

September 29, 1955

Memorandum

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

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

Subject: Review of Field Examination report, DMEA 336, Atomic Power Uranium Corporation, Ford and Ferde claim group, Mesa County, Colorado.

The examining team concluded that the subject property was a favorable place for exploration, but a map of the Salt Wash member of the Morrison formation was needed. The map would be used to locate proposed drill holes. The applicant was asked by the Field Team to submit the map, but the applicant has not done so to date. Under the circumstances it appears that the application should be denied without prejudice.

In regard to this application I wish to point out that after the field examination the most important point to the applicant was whether or not he would be able to perform the work by air-rotary drilling methods at a quarter of the cost of core drilling. He expressed willingness to agree on hole locations suggested by the examining team. In my memorandum of transmittal from Grand Junction dated June 3, 1955, I recommended that the applicant be allowed to do the drilling with air-rotary methods. Although the Field Team has correspondent with the applicant two or three times we do not have copies of the correspondence. Consequently we have no way of knowing if the question of drilling methods has been settled with the applicant. I have the impression, from personal interview in Grand Junction with D. O. McKeen, representative of the applicant, that the applicant will not go to the expense of making the geologic map unless the drilling problem is solved.

The docket, to this date, does not seem to have been closed in the usual manner.

WPWilliams:iml
G-9/29/55
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

W. P. Williams

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

September 27, 1955

RECEIVED
SEP 27 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: James Paone, Bureau of Mines Alternate Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket 3636, Atomic Power Uranium Corporation, Ford and Fordo claim group, Mesa County, Colorado

I have reviewed the Field Team report of examination, Atomic Power Uranium Corporation, DMEA Docket 3636; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

Inasmuch as the applicant failed to furnish the Field Team with certain necessary information which the Field Team requested on May 16, June 17, and July 18, 1955, we concur with the recommendation of the Field Team that the application be denied.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

James Paone

James Paone

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

September 15, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, Docket DMEA 3636, (Uranium), Atomic Power Uranium Corporation, Ford and Fordo claim group, Mesa County, Colorado

Enclosed are the original and three copies of the report pertaining to the above application.

The applicant failed to answer our letters of May 16, June 17, and July 18, 1955 in which we requested additional information. On August 19, 1955 we requested you to close this docket.

W. M. Traver

E. N. Hansmann

Enclosures

DMEA
Date R...
SEP 14 1955
BUREAU OF MINES
Denver, Colorado

Region III

Building 20
Denver Federal Center
Denver 2, Colorado
September 13, 1955

Memorandum

TRANSMITTED
SEP 15 1955

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw

Subject: DMEA 3636 (Uranium) Atomic Power Uranium Corporation, Ford-Fordo claim group, Tenderfoot Mesa Mining District, Mesa County, Colorado

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations" by W. D. McMillan, mining engineer, and N. W. Stevens, geologist, and the original and ten copies of an engineering report by W. D. McMillan, covering docket DMEA 3636.

The Atomic Power Uranium Corporation applied for exploration assistance in the amount of $28,760.00 to explore the Ford-Fordo group of claims by 22,400 feet of percussion drilling. The property was examined on April 27, 1955. The examining team concluded that the property merited exploration and discussed a modified program with the representative of the applicant. The applicant was requested to furnish a map showing the favorable areas in the Salt Wash member of the Morrison formation. This map was requested on May 16, 1955 for the purpose of devising a suitable drilling program. It had not been received by September 1, 1955, and it is assumed that the applicant is no longer interested in exploration assistance.

It is recommended that the application be denied.

John F. Shaw
Supervising Mining Engineer

Enclosures

cc 10 ✓
EN Harshman
DMEA 3636
Chron

JFS/em

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION XIX

DMEA 3626

Atomic Power Uranium Commission

Fort-Forty Claim Group

Dunderfunk Mesa Mining District

Mesa County, Colorado

Remains

By

W. R. McMillan
Mining Engineer
Bureau of Mines

H. H. Brown
Geologist
Geological Survey

September 8, 1953

DMRA 3636

ATOMIC POWER URANIUM CORPORATION
FORD-FORDO CLAIM GROUP
THEDFROOF MESA MINING DISTRICT
MESA COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By

W. D. McMillan
Mining Engineer
Bureau of Mines

N. W. Stevens
Geologist
Geological Survey

DMEA 3636

ATOMIC POWER URANIUM CORPORATION
FORD-FORDO CLAIM GROUP
TEMBERFOOT MESA MINING DISTRICT
MESA COUNTY, COLORADO

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By W. D. McMillan and N. V. Sivons

An application has been made to the Defense Minerals Exploration Administration for Government assistance in exploration of uranium claims in Mesa County, Colorado. The applicants proposed a percussion drilling program in two stages consisting of 160 holes with a total depth of 22,400 feet at an estimated total cost of $28,760.00.

An examination was made on April 27, 1955 by a Region III examining team.

The claims are in the northwestern part of Temberfoot Mesa, Mesa County, Colorado, about 8 miles east of the Dolores River. They consist of 11 claims, and ownership, based on locations, appears to be valid.

The Salt Wash member of the Jurassic Morrison formation crops out on all the claims except two which are partly overlain by the Brushy Basin member of the Morrison formation.

Significant uranium ore deposits are being mined from the Ford No. 1 claim and about 2,000 tons of mineable ore has been indicated by wagon drilling. The examining team concludes that the property merits Government assistance for further exploration. Through the Region III

Field Team a map showing the favorable areas of the Salt Wash member was requested on May 16, 1955 for the purpose of devising a drilling program suitable for locating small targets.

This map had not been received at the end of August 1955, and the examining team recommends that the application be denied without prejudice.

DMA 3696

ATOMIC POWER VENTURE CORPORATION
FORD-FORDE CLAIM GROUP
TENDERFOOT AREA MINING DISTRICT
MESA COUNTY, COLORADO

Engineering Report

By: M. D. McMillan
Mining Engineer
Bureau of Mines

DMEA 3636

ATOMIC POWER URANIUM CORPORATION
FORD-FORDO CLAIM GROUP
TENDERFOOT MESA MINING DISTRICT
MESA COUNTY, COLORADO

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Labor and living conditions	3
History, production and ownership	3
Description of the deposits	4
Minable reserves	5
Present status	6
Mining equipment and other facilities	6
Conclusions and recommendations	7

ILLUSTRATIONS

Figure	Follows Page
1. Location map, Atomic Power Uranium Corporation, Ford-Fordo claim group, Tenderfoot Mesa Mining District, Mesa County, Colorado	2

DMEA 3636

ATOMIC POWER URANIUM CORPORATION
FORD-FORDO CLAIM GROUP
TENDERFOOT MESA MINING DISTRICT
MESA COUNTY, COLORADO

ENGINEERING REPORT

By. W. D. McMillan

INTRODUCTION

Atomic Power Uranium Corporation applied for Defense Minerals Exploration Administration assistance for exploration of their Ford-Fordo group of 11 claims located on Tenderfoot Mesa, Mesa County, Colorado.

Their proposal was for a first stage of 80 wagon drill holes located in 16 areas on lines 700 feet apart and 500 feet spacings on the lines, these to be followed by 80 offset holes. The estimated average depth of the holes was 175 feet, with a total of 22,400 feet. The estimated total cost was $28,760.00, Government participation would be 75 percent, or $21,570.00.

A DMEA Region III examining team consisting of W. D. McMillan of the Bureau of Mines, N. W. Bivens, R. T. Chew, and H. F. Albee of the U. S. Geological Survey, accompanied by B. O. McCoon, representative of the applicant, examined the property on April 27,1955.

A modified program consisting of 3 fences with close spacing of holes was proposed by the examining team, which was acceptable to the applicant's representative.

ACKNOWLEDGEMENTS

Data pertaining to the Ford-Ferde group were obtained from personal observation from experience of E. F. Albee in the adjoining claims, and from D. O. McCoon, Jr. who has been in charge of mining and exploration for the corporation.

LOCATION, TOPOGRAPHY AND MINERAL FEATURES

The Ford-Ferde claim group consists of 11 claims, namely the Ford Nos. 1, 2, 3, 4 and 5 and the Ferde Nos. 6, 7, 8, 9, 10 and 11. These located in secs. 24, T. 32 N., R. 19 W., with the southeast corner of Ford No. 3 lying in section 19, T. XIX., R. 18 W., New Mexico principal meridian, see figure 1. This location is in the south central part of the U. S. Geological Survey Gateway, Colorado quadrangle in the north western part of Tombstone Mesa.

The mine may be reached by travelling south on Colorado Highway 141 to Taylors ranch, 13 miles from U. S. Highway 50, thence on a Forest Service road for 16 miles, where there is a trunk road to the right, which should be followed for 26 miles to the Ferde mine on the Ford No. 1 claim.

Grand Junction, 65 miles northwest is the nearest source of supplies.

The topography of the area is typical tableland of the Colorado Plateau, with a steep walled canyon on the west side. The mean altitude of the claims is 6,700 feet, with a relief of 600 feet from the southwest to the northeast.

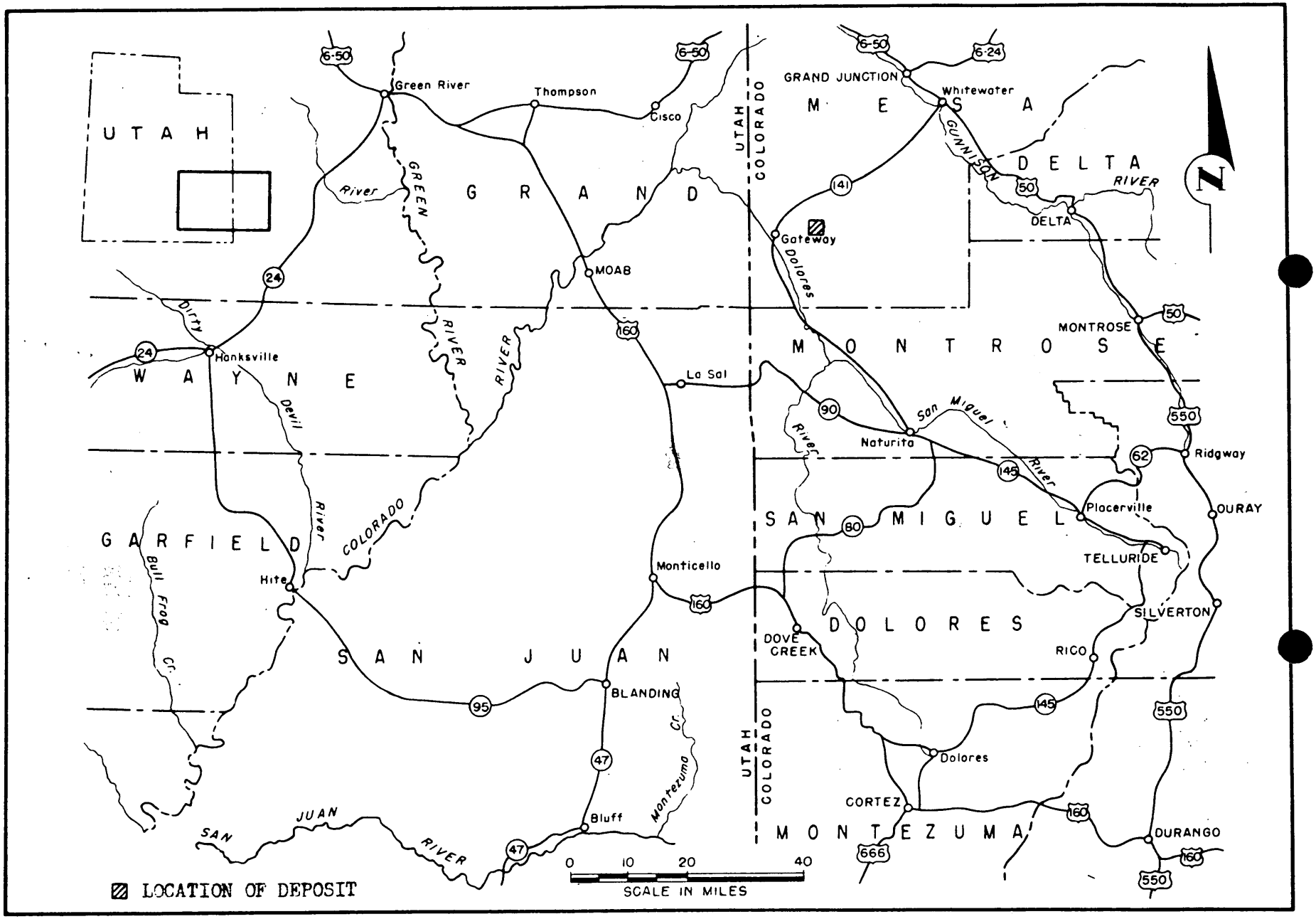


FIGURE 1 - LOCATION MAP, ATOMIC POWER URANIUM CORPORATION, FORD-FORDO CLAIM GROUP, TENDERFOOT MESA MINING DISTRICT, MESA COUNTY, COLO. DMEA 3636

The area is well covered by pinon trees and sage brush. Access to the property is fairly easy except at times during the winter months. Road construction and preparation of drill sites would be more costly than average in the Colorado plateau.

The area is in a semi-arid region, with light rainfall and snow up to 24 inches making travel difficult. Temperatures ranges from 100 degrees to minus 20 degrees, but surface drilling and underground mining are feasible throughout the year.

The nearest market for uranium ore is the receiving and treatment plant at Grand Junction, Colorado, 64 miles from the property.

Mining timber and lumber are available at local saw mills, and there is an ample supply of domestic fuel on the claims. All power needs must be furnished by gasoline or diesel-driven units. Water for domestic and industrial purposes must be hauled or pumped from North Larson Canyon, 1/4 mile west of the claims.

LABOR AND LIVING CONDITIONS

The demand for mine labor in the area is comparatively heavy. Wage rates for semi-skilled labor at remote locations are about $2.00 per hour. The distance is too far to housing facilities for commuting, and these will have to be provided. The proposed project would be carried on by a drilling contractor, who would furnish all the labor and housing facilities.

HISTORY, PRODUCTION AND OWNERSHIP

The Ford Nos. 1 to 6 inclusive claims were located in May 1952

by UCO Ventures, Inc., and the Fordo Nos. 6 to 11 inclusive were located in June 1954 by Atomic Power Uranium Corporation.

On August 10, 1954 an Article of Agreement was made transferring 51 percent of UCO Ventures, Inc. to Atomic Power Uranium Corporation for total payments $18,000, which was acknowledged in an Affidavit of Payment by James R. Kelley, president of UCO Ventures, Inc. on November 12, 1954. Examination of the records at the Grand Junction Recorder's indicate that the locations are valid, that they are now in the name of Atomic Power Uranium Corporation.

An old vanadium mine is located 300 feet south of the Fordo No. 6 claim and the Payroch No. 14 mine is 500 feet southeast of the Ford No. 1 mine. The operating Vanaking No. 1 uranium mine is one half mile east of the Ford No. 1 mine.

Production from the East and Ajax No. 2 mines on the Ford No. 1 claim has amounted to 597 tons with an average unit content of 0.827 percent U_3O_8.

DESCRIPTION OF THE DEPOSITS

On the Ford-Fordo Claim Group the top sandstone beds of the Salt Wash member of the Jurassic Morrison formation are apparently the principal ore-bearing beds on the claims. This member outcrops over the entire group except on parts of Ford Nos. 3 and 4, where the Salt Wash is overlain by the Brushy Basin member of the Morrison formation.

Percussion drilling on the Ford No. 1 claim by Atomic Power Uranium Corporation in 1954 encountered uranium ore at depths of from 74 to

91 feet with an average thickness in 7 holes of 9.5 feet and an average uranium oxide content of 0.28 percent, as shown in Table No. 1.

Hole No. 6 of this group of holes cut 15 feet of ore with an average radiometric analyses of 0.41 percent. At the time of the examination, an adit from the rim of the canyon had reached a point 30 feet from Hole No. 6. The total length of this adit is 170 feet, and the last 35 feet was in ore 9 feet thick for the full width of the adit. The adit and the percussion drill holes indicate an ore body 90 feet in width and 90 feet in length with a thickness of 9.5 feet.

The location of the seven ore holes are shown on figure 2, and the pertinent data as furnished by the applicant are given in the following table.

Table No. 1

Ore Hole on Ford No. 1 Claim

	Hole No.	ORE HORIZON From	To	Feet	Radiometric Probe Percent U_3O_8	Estimated Collar Elevation
	6	77	91	15	0.41	6890
Cored	18	74	82	9	0.37	6890
	19	74	88	14	0.17	6890
	20	74	85	12	0.18	6900
	21	76	80	5	0.14	6900
	23	77	86	10	0.63	6900
	24	83	85	3	0.36	6900
	AVERAGE			9.5	0.28	

MINABLE RESERVES

Burt E. Hartman, Geological Engineer, Technical Services, Inc. calculated the ore reserves as follows:

	Tons	U_3O_8 Percent
Indicated	1932	0.33
Inferred	2136	0.33
Total	4068	0.33

PRESENT STATUS

To date exploration and development has consisted of 29 percussion drill holes on the Ford No. 1 and Fordo No. 6 claims, and an additional 3380 feet of percussion drilling on the Ford No. 1 claim. Total number of holes and total footage were not given by the applicant.

In addition to exploration, development consists of one 175 foot adit, one 130 foot adit and 50 feet of drifts at the Knox Mine, and a short adit on the Ajax Mine, all of which are on the Ford No. 1 mine. Past production from this development has amounted to 537 tons with an average unit content of 0.287 percent U_3O_8.

At the time of the examination, the miners were on leave to stake claims. According to information recently received, mining and transportation has been resumed under contract. Some high grade ore is present, as a specimen of rattlesnake ore from the face of the main adit gave a radiometric assay of 35.60 percent U_3O_8.

Mining Equipment and Other Facilities

Mining equipment consists of a gasoline-driven compressor, air receiver, two pneumatic drills, and two mine cars. Other facilities consist of a 40 ton ore bin below the portal of the Knox Mine adit, and a 20 foot by 40 foot framed house on the road east of the Ford No. 1 claim.

CONSIDERATIONS AND RECOMMENDATIONS

The Ford-Pendo mine group is underlain by the uranium ore-bearing sandstone beds of the Salt Wash member of the Jurassic Morrison formation and there are uranium ore showings on one claim near the south rim that would justify Government assistance for an exploration program based on the probable small targets on the property.

Since the applicant has not submitted a requested map showing the favorable areas, it is recommended that the application be denied without prejudice.

/jw

IN REPLY REFER TO:

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

DMEA
Date Rec'd.
JUN 7 1955
BUREAU OF MINES
Denver, Colorado

June 6, 1955

TRANSMITTED
SEP 15 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA 3636, Atomic Power Uranium Corporation, Ford and Fordo groups of claims, Tenderfoot Mesa, Mesa County, Colorado (Uranium)

Enclosed are 10 copies of a geologic report by N. W. Bivins, U. S. Geological Survey, covering his examination of the subject property.

Bivins concludes that the geologic conditions in the area are favorable for the occurrence of small mineralized bodies containing a few hundred tons of uranium ore. It is his opinion that the program proposed by the applicant is not well adapted to the known geologic conditions and in all probability would not result in the discovery of significant amounts of ore. He suggests that the applicant complete a geologic map of the area showing pertinent features of the lithology. Based on this information, the applicant can prepare a program of exploration with specific targets.

From the evidence presented in the report, it appears that exploration on the claims is warranted but that the applicant must complete certain preliminary geologic mapping before a program can be approved.

Denial of the application for exploration assistance without prejudice is indicated.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (10)

ENHarshman:arh

MINERAL DEPOSITS
DMEA
RECEIVED
JUN 6 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

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

June 3, 1955

MEMORANDUM

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

From: W. P. Williams

Subject: DMEA 3636, Atomic Power Uranium Corporation, Ford and Fordo groups of claims, Tenderfoot Mesa, Mesa County, Colorado

Transmitted herewith are 12 copies of a geologic report by N. W. Bivens covering a field examination of the above-referenced property.

The property has produced more than 500 tons of uranium and vanadium ore from the Knot and Ajax deposits. Mineralized rock is present in outcrops on and near the Ford and Fordo claims. History of the area shows, however, that the ore deposits are likely to be small. Favorable geologic conditions on the basis of Salt Wash sand thickness, presence of green and gray mudstone and carbonaceous material are present on the property. Bivens and I agree that further exploration is warranted on the property.

The applicant proposed a drilling pattern consisting of a grid on wide-spaced centers. I agree with Bivens that such a program would probably not be successful in finding the small ore deposits. Bivens recommends that any stage I drilling should be done by coring methods. The applicant objects to core drilling and prefers to do air rotary drilling at considerably less cost per foot.

I concur with Bivens' recommendations that the property merits DMEA assistance in an exploration program and that the applicant be asked to supply a map showing favorable areas near the Knot mine and near the Salt Wash outcrops on the property. With such a map it will be possible to devise a drilling program that will probably be successful in finding new uranium ore deposits. I recommend that the applicant be allowed to perform the drilling by air rotary methods.

The Exploration Division, U. S. Atomic Energy Commission, Grand Junction Operations Office, was asked for advice in evaluating this property, but the Commission had no specific data to offer. We are returning herewith the brochure covering this application.

W P Williams

W. P. Williams
Geologist

WPW/mlr
Enclosures

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

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

DMEA 3636, Atomic Power Uranium Corporation, Ford and Fordo groups of claims, Tenderfoot Mesa, Mesa County, Colorado

Uranium

Geologic Report

by

N. W. Bivens
U. S. Geological Survey

June 3, 1955

DMEA 3636

INTRODUCTION AND SUMMARY

The Atomic Power Uranium Corporation, 404 Empire Building, Denver, Colorado, has applied (DMEA No. 3636) to the Defense Minerals Exploration Administration for aid to conduct exploration for uranium ore on the Ford claims Nos. 1 to 5 and the Fordo claims Nos. 6 to 11, in sec. 24, T. 51 N., R. 19 W., and sec. 19, T. 51 N., R. 18 W., N.M.P.M., Mesa County, Colo. (fig. 1). The applicant proposes to do 28,000 feet of drilling at a total estimated cost of $28,760.

The property was examined April 27, 1955, by W. D. McMillan, U. S. Bureau of Mines, H. F. Albee, R. T. Chew and N. W. Bivens, U. S. Geological Survey, and D. O. McGoon, representative for the applicant.

The Ford-Fordo groups of claims are located on the north side of Tenderfoot Mesa in the eastern part of the Gateway mining district. The claims are accessible by two roads. One access road (11 miles) connects with Colorado State Highway 141 about four miles northeast of Gateway, Colo. That road is very steep and becomes impassable at times during the winter and spring months. The other road extends south 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 drilling operations would be supervised by D. O. McGoon. He appears capable to perform the supervisory duties.

GEOLOGY AND ORE DEPOSITS

The rocks exposed in the vicinity of the Ford-Fordo group are Mesozoic sediments that consist, from oldest to youngest, of the Upper Jurassic Morrison formation and the Lower Cretaceous Burro Canyon formation. 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. Overlying the Brushy Basin member is the Burro Canyon formation which is predominantly a conglomeratic sandstone containing lenses of gray shale.

Most of the significant uranium-bearing deposits mined in the vicinity of the Ford-Fordo group of 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 pink and white chert and feldspar.

The sandstones are commonly lenticular and irregularly bedded. Scour and fill type of sedimentation formed thick, elongate, 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 localized 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. Average minimum and maximum dimensions are about one-half to $1\frac{1}{2}$ feet thick, 3 to 15 feet wide, and 20 to 50 feet long. The ore bodies are commonly connected by thin seams of high-grade material. The average mineralized area (group of deposits) is 40-60 feet wide and 70-100 feet long.

The following data includes all known production prior to March 1, 1955.

Table 1

Mine	Tons	$\%U_3O_8$	$\%V_2O_5$
Knot	531.10	0.29	0.75
Ajax No. 2	26.12	0.23	1.36

PROPOSED EXPLORATION

The applicant proposed to do 28,000 feet of drilling at a total cost of $28,760. The drilling was planned in two stages. The first stage (80 holes, 14,000 feet) was to be drilled on a moderate-spaced pattern, the distance between holes to be from 150 feet to an unspecified distance. The second stage holes (80, 14000 feet) were to be offset holes, with spacing unspecified. All holes were to be air-rotary holes.

Since all available information shows that the mineralized areas 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 air-rotary drilling.

It is suggested that the applicant submit a detailed geologic map 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 close-spaced holes (50 to 100 feet apart) to search for ore deposits. The close-spaced holes could probably be drilled by air-rotary methods. Although no accurate assays could be obtained by this method, the approximate depth, thickness, and grade of the mineralized material would be obtained by using a gamma-ray unit to probe the holes.

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

At the time of the field examination, the only part of the suggested program not acceptable to the representative for the applicant was the diamond drilling rather than air-rotary drilling on the first stage holes.

CONCLUSIONS AND RECOMMENDATIONS

Field examinations of the Ford-Fordo group of claims shows that geologic conditions may be favorable for the occurrence of new uranium-bearing deposits. The deposits are likely to be small targets that

would not be discovered by the applicant's proposed drilling program. Also, the first stage holes should be diamond-drill holes. It is recommended that the application be denied until the applicant submits the suggested geologic map accompanied by a more logical drilling program.

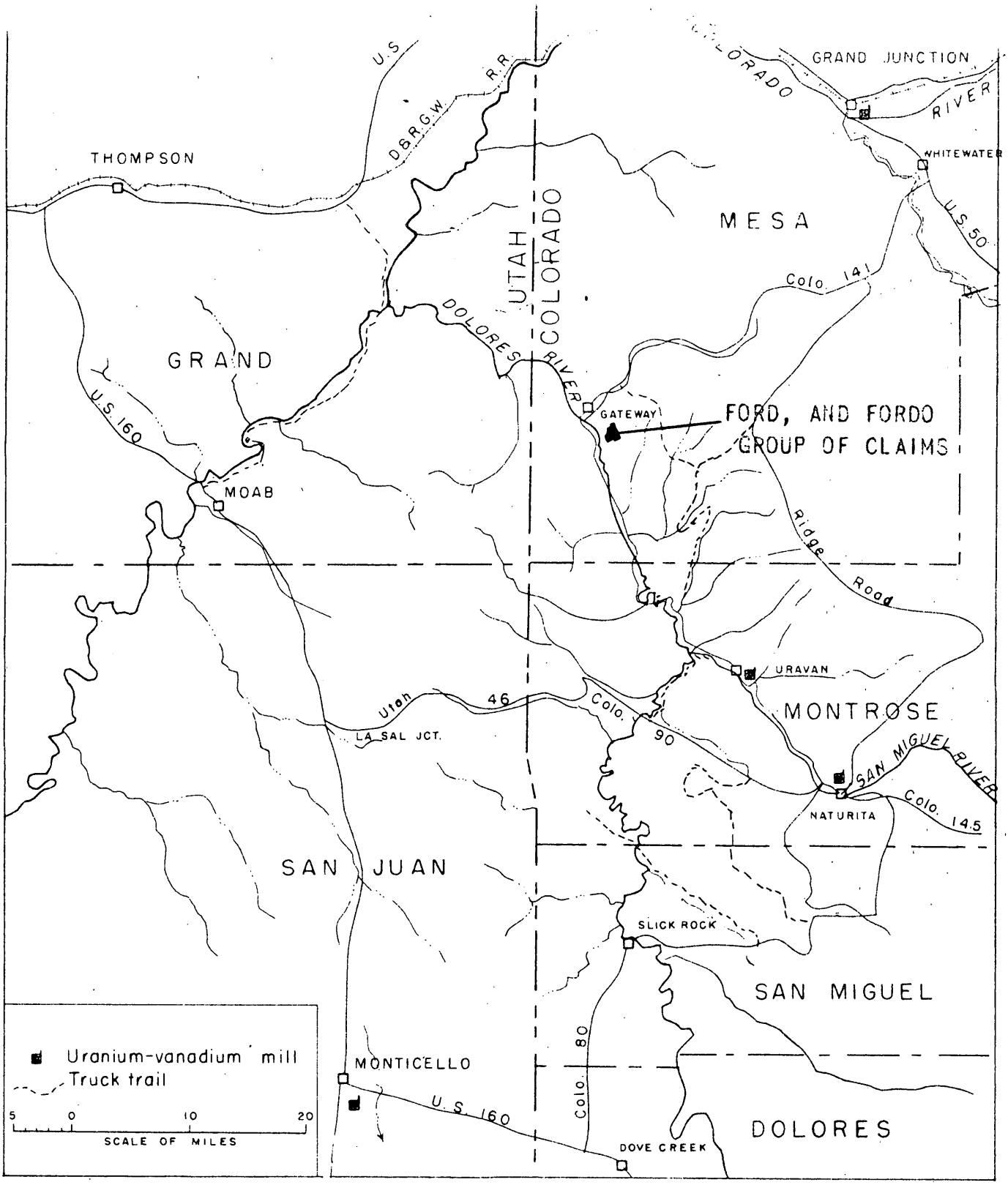
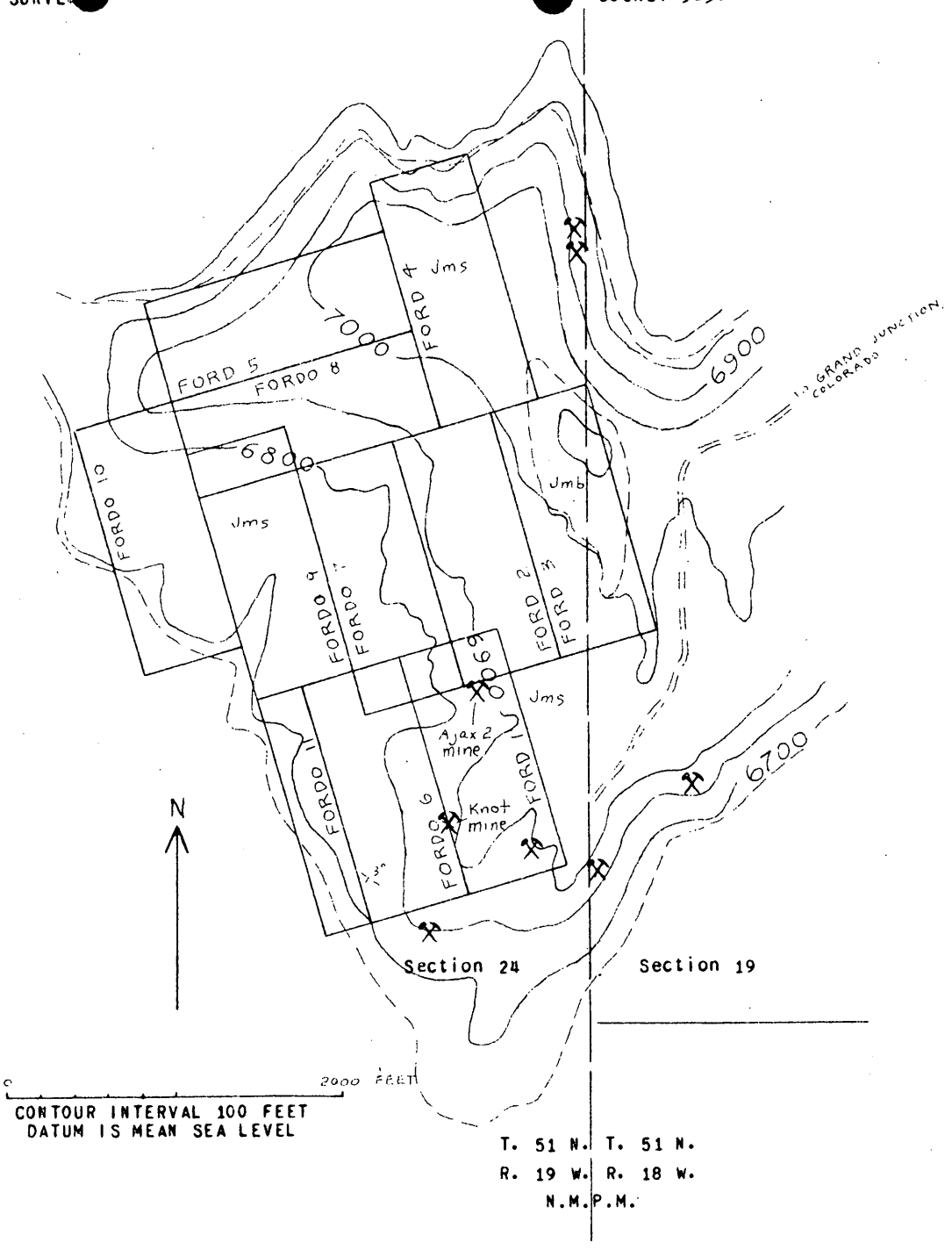


Figure 1. INDEX MAP OF PART OF THE COLORADO PLATEAU SHOWING LOCATION OF FORD, AND FORDO GROUP OF CLAIMS, ATOMIC POWER URANIUM COMPANY, MESA COUNTY, COLORADO



EXPLANATION

Jmb — JURASSIC BRUSHY BASIN MEMBER OF MORRISON FORMATION

Jms — JURASSIC SALT WASH MEMBER OF MORRISON FORMATION

FORMATION CONTACT

MINE OR PROSPECT

Note: GEOLOGY AND LAND LINES FROM U.S.G.S. GATEWAY QUADRANGLE MAP
CLAIM BOUNDARIES FROM APPLICANTS MAP

Figure 2. GEOLOGIC MAP SHOWING THE FORD AND FORDO CLAIMS, ATOMIC POWER URANIUM COMPANY, MESA COUNTY, COLORADO

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

September 15, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, Docket DMEA 3636, (Uranium), Atomic Power Uranium Corporation, Ford and Fordo claim group, Mesa County, Colorado

Enclosed are the original and three copies of the report pertaining to the above application.

The applicant failed to answer our letters of May 16, June 17, and July 18, 1955 in which we requested additional information. On August 19, 1955 we requested you to close this docket.

W. M. Traver

E. N. Harshman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
9-26-55
(date)

DMEA
Date Rec'd
SEP 14 1955
BUREAU OF MINES
Denver, Colorado

Region III

Building 20
Denver Federal Center
Denver 2, Colorado
September 13, 1955

Memorandum

TRANSMITTED
SEP 15 1955

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw

Subject: DMEA 3636 (Uranium) Atomic Power Uranium Corporation, Ford-Ferdo claim group, Tenderfoot Mesa Mining District, Mesa County, Colorado

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations" by W. D. McMillan, mining engineer, and H. W. Rivens, geologist, and the original and ten copies of an engineering report by W. D. McMillan, covering docket DMEA 3636.

The Atomic Power Uranium Corporation applied for exploration assistance in the amount of $28,760.00 to explore the Ford-Ferdo group of claims by 22,400 feet of percussion drilling. The property was examined on April 27, 1955. The examining team concluded that the property merited exploration and discussed a modified program with the representative of the applicant. The applicant was requested to furnish a map showing the favorable areas in the Salt Wash member of the Morrison formation. This map was requested on May 16, 1955 for the purpose of devising a suitable drilling program. It had not been received by September 1, 1955, and it is assumed that the applicant is no longer interested in exploration assistance.

It is recommended that the application be denied.

John F. Shaw
Supervising Mining Engineer

Enclosures

cc 10
EN Harshman
DMEA 3636
Chron

JFS/cm

Reviewed by
DMEA OPERATING COMMITTEE
9-26-55
(Date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3636

Atomic Power Uranium Corporation

Ford-Fordo Claim Group

Tenderfoot Mesa Mining District

Mesa County, Colorado

Uranium

Reviewed by
DMEA OPERATING COMMITTEE
9-26-55
(date)

By

W. D. McMillan
Mining Engineer
Bureau of Mines

N. W. Bivens
Geologist
Geological Survey

September 8, 1955

DMEA 3636

ATOMIC POWER URANIUM CORPORATION
FORD-FORDO CLAIM GROUP
TENDERFOOT MESA MINING DISTRICT
MESA COUNTY, COLORADO

Summary, Conclusions, and Recommendations

Reviewed by
DMEA OPERATING COMMITTEE
9-26-55
(date)

By

W. D. McMillan
Mining Engineer
Bureau of Mines

N. W. Bivens
Geologist
Geological Survey

DMEA 3636

ATOMIC POWER URANIUM CORPORATION
FORD-FORDO CLAIM GROUP
TENDERFOOT MESA MINING DISTRICT
MESA COUNTY, COLORADO

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By W. D. McMillan and N. W. Bivens

An application has been made to the Defense Minerals Exploration Administration for Government assistance in exploration of uranium claims in Mesa County, Colorado. The applicants proposed a percussion drilling program in two stages consisting of 160 holes with a total depth of 22,400 feet at an estimated total cost of $28,760.00.

An examination was made on April 27, 1955 by a Region III examining team.

The claims are in the northwestern part of Tenderfoot Mesa, Mesa County, Colorado, about 2 miles east of the Dolores River. They consist of 11 claims, and ownership, based on locations, appears to be valid.

The Salt Wash member of the Jurassic Morrison formation crops out on all the claims except two which are partly overlain by the Brushy Basin member of the Morrison formation.

Significant uranium ore deposits are being mined from the Ford No. 1 claim and about 2,000 tons of minable ore has been indicated by wagon drilling. The examining team concludes that the property merits Government assistance for further exploration. Through the Region III

Field Team a map showing the favorable areas of the Salt Wash member was requested on May 16, 1955 for the purpose of devising a drilling program suitable for locating small targets.

This map had not been received at the end of August 1955, and the examining team recommends that the application be denied without prejudice.

DMEA 3636

ATOMIC POWER URANIUM CORPORATION
FORD-FORDO CLAIM GROUP
TENDERFOOT MESA MINING DISTRICT
MESA COUNTY, COLORADO

Engineering Report

By: W. D. McMillan
Mining Engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
9-26-55
(date)

DMEA 3636

ATOMIC POWER URANIUM CORPORATION
FORD-FORDO CLAIM GROUP
TENDERFOOT MESA MINING DISTRICT
MESA COUNTY, COLORADO

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ILLUSTRATIONS

Figure	Follows page
1. Location map, Atomic Power Uranium Corporation, Ford-Fordo claim group, Tenderfoot Mesa Mining District, Mesa County, Colorado	2

DMEA 3636

ATOMIC POWER URANIUM CORPORATION
FORD-FORDO CLAIM GROUP
TENDERFOOT MESA MINING DISTRICT
MESA COUNTY, COLORADO

ENGINEERING REPORT

By. W. D. McMillan

INTRODUCTION

Atomic Power Uranium Corporation applied for Defense Minerals Exploration Administration assistance for exploration of their Ford-Fordo group of 11 claims located on Tenderfoot Mesa, Mesa County, Colorado.

Their proposal was for a first stage of 80 wagon drill holes located in 16 areas on lines 700 feet apart and 500 feet spacings on the lines, these to be followed by 80 offset holes. The estimated average depth of the holes was 175 feet, with a total of 22,400 feet. The estimated total cost was $28,760.00, Government participation would be 75 percent, or $21,570.00.

A DMEA Region III examining team consisting of W. D. McMillan of the Bureau of Mines, N. W. Bivens, R. T. Chew, and H. F. Albee of the U. S. Geological Survey, accompanied by D. O. McGoon, representative of the applicant, examined the property on April 27,1955.

A modified program consisting of 3 fences with close spacing of holes was proposed by the examining team, which was acceptable to the applicant's representative.

ACKNOWLEDGEMENTS

Data pertaining to the Ford-Fordo group were obtained from personal observation from experience of H. F. Albee in the adjoining claims, and from D. O. McGoon, Jr. who has been in charge of mining and exploration for the corporation.

LOCATION, TOPOGRAPHY AND PHYSICAL FEATURES

The Ford-Fordo claim group consists of 11 claims, namely the Ford Nos. 1, 2, 3, 4 and 5 and the Fordo Nos. 6, 7, 8, 9, 10 and 11. These are located in secs. 24, T. 51 N., R. 19 W., with the southeast corner of Ford No. 3 lying in section 19, T. 51N., R. 18 W., New Mexico principal meridian, see figure 1. This location is in the south central part of the U. S. Geological Survey Gateway, Colorado quadrangle in the north western part of Tenderfoot Mesa.

The mine may be reached by travelling south on Colorado Highway 141 to Taylors ranch, 15 miles from U. S. Highway 50, thence on a Forest Service road for 16 miles, where there is a truck road to the right, which should be followed for 26 miles to the Knott mine on the Ford No. 1 claim.

Grand Junction, 64 miles northwest is the nearest source of supplies.

The topography of the area is typical tableland of the Colorado Plateau, with a steep walled canyon on the west side. The mean altitude of the claims is 6,700 feet, with a relief of 600 feet from the southwest to the northeast.

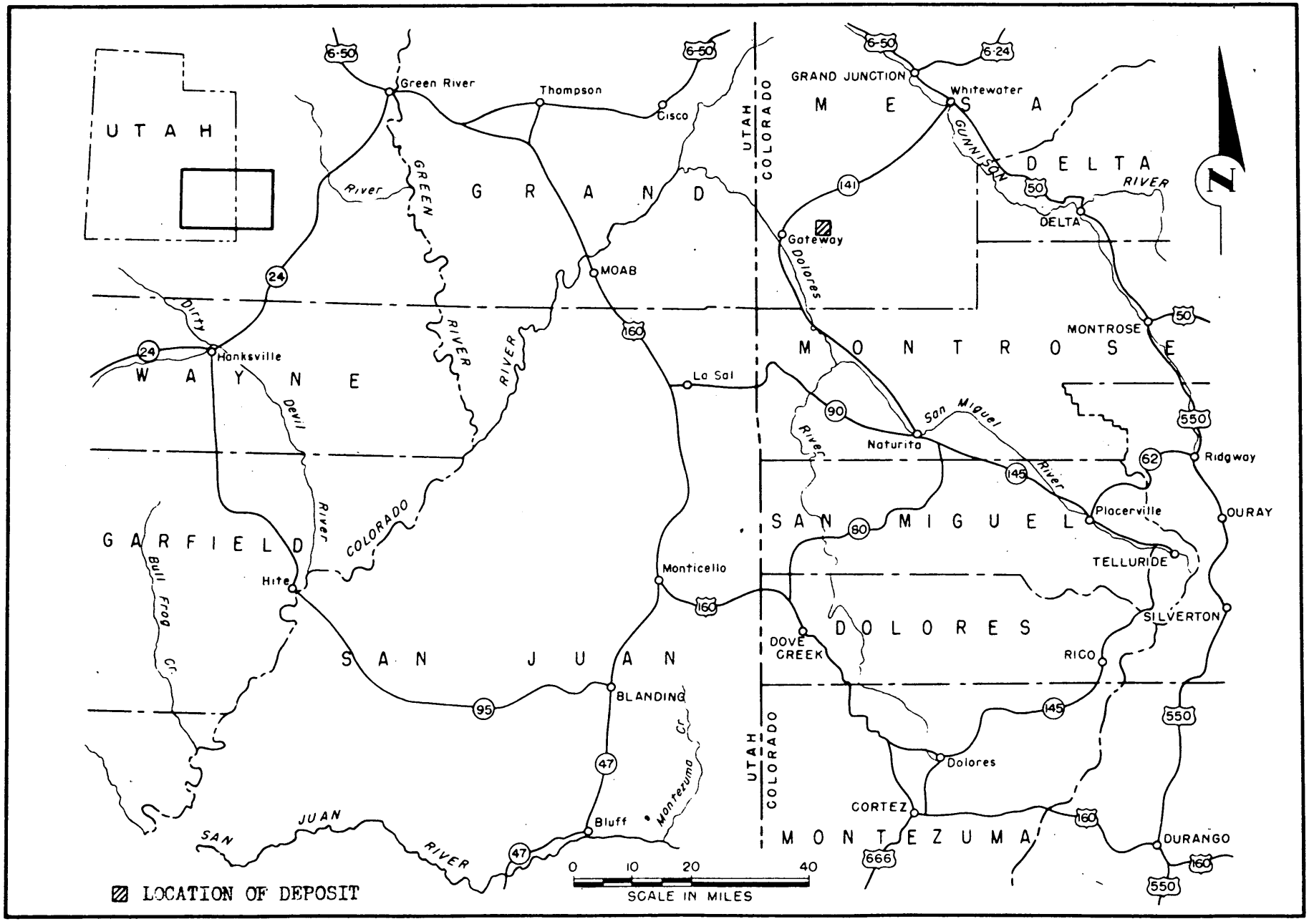

FIGURE 1 - LOCATION MAP, ATOMIC POWER URANIUM CORPORATION, FORD-FORDO CLAIM GROUP, TENDERFOOT MESA MINING DISTRICT, MESA COUNTY, COLO. DMEA 3636

The area is well covered by pinon trees and sage brush. Access to the property is fairly easy except at times during the winter months. Road construction and preparation of drill sites would be more costly than average in the Colorado plateau.

The area is in a semi-arid region, with light rainfall and snow up to 24 inches making travel difficult. Temperatures ranges from 100 degrees to minus 20 degrees, but surface drilling and underground mining are feasible throughout the year.

The nearest market for uranium ore is the receiving and treatment plant at Grand Junction, Colorado, 64 miles from the property.

Mining timber and lumber are available at local saw mills, and there is an ample supply of domestic fuel on the claims. All power needs must be furnished by gasoline or diesel-driven units. Water for domestic and industrial purposes must be hauled or pumped from North Larson Canyon, 1/4 mile east of the claims.

LABOR AND LIVING CONDITIONS

The demand for mine labor in the area is comparatively heavy. Wage rates for semi-skilled labor at remote locations are about $2.00 per hour. The distance is too far to housing facilities for commuting, and these will have to be provided. The proposed project would be carried on by a drilling contractor, who would furnish all the labor and housing facilities.

HISTORY, PRODUCTION AND OWNERSHIP

The Ford Nos. 1 to 6 inclusive claims were located in May 1952

by UCO Ventures, Inc., and the Fordo Nos. 6 to 11 inclusive were located in June 1954 by Atomic Power Uranium Corporation.

On August 10, 1954 an Article of Agreement was made transferring 51 percent of UCO Ventures, Inc. to Atomic Power Uranium Corporation for total payments $18,000, which was acknowledged in an Affidavit of Payment by James E. Kelley, president of UCO Ventures, Inc. on November 12, 1954. Examination of the records at the Grand Junction Recorder's indicate that the locations are valid, that they are now in the name of Atomic Power Uranium Corporation.

An old vanadium mine is located 500 feet south of the Fordo No. 6 claim and the Payrock No. 14 mine is 500 feet southeast of the Ford No. 1 mine. The operating Vanaking No. 1 uranium mine is one half mile east of the Ford No. 1 mine.

Production from the Knot and Ajax No. 2 mines on the Ford No. 1 claim has amounted to 557 tons with an average unit content of 0.287 percent U_3O_8.

DESCRIPTION OF THE DEPOSITS

On the Ford-Fordo Claim Group the top sandstone beds of the Salt Wash member of the Jurassic Morrison formation are apparently the principal ore-bearing beds on the claims. This member outcrops over the entire group except on parts of Ford Nos. 3 and 4, where the Salt Wash is overlain by the Brushy Basin member of the Morrison formation.

Percussion drilling on the Ford No. 1 claim by Atomic Power Uranium Corporation in 1954 encountered uranium ore at depths of from 74 to

91 feet with an average thickness in 7 holes of 9.5 feet and an average uranium oxide content of 0.28 percent, as shown in Table No. 1.

Hole No. 6 of this group of holes cut 15 feet of ore with an average radiometric analyses of 0.41 percent. At the time of the examination, an adit from the rim of the canyon had reached a point 30 feet from Hole No. 6. The total length of this adit is 170 feet, and the last 35 feet was in ore 9 feet thick for the full width of the adit. The adit and the percussion drill holes indicate an ore body 90 feet in width and 90 feet in length with a thickness of 9.5 feet.

The location of the seven ore holes are shown on figure 2, and the pertinent data as furnished by the applicant are given in the following table.

Table No. 1

Ore Hole on Ford No. 1 Claim

	Hole No.	ORE HORIZON From	To	Feet	Radiometric Probe Percent U_3O_8	Estimated Collar Elevation
	6	77	91	15	0.41	6890
Caved	18	74	82	9	0.37	6890
	19	74	88	14	0.17	6890
	20	74	85	12	0.18	6900
	21	76	80	5	0.14	6900
	23	77	86	10	0.63	6900
	24	83	85	3	0.36	6900
	AVERAGE			9.5	0.28	

MINABLE RESERVES

Burt E. Hartmen, Geological Engineer, Technical Services, Inc. calculated the ore reserves as follows:

	Tons	U_3O_8 Percent
Indicated	1932	0.33
Inferred	2136	0.33
Total	4068	0.33

PRESENT STATUS

To date exploration and development has consisted of 29 percussion drill holes on the Ford No. 1 and Fordo No. 6 claims, and an additional 3320 feet of percussion drilling on the Ford No. 1 claim. Total number of holes and total footage were not given by the applicant.

In addition to exploration, development consists of one 175 foot adit, one 130 foot adit and 50 feet of drifts at the Knox Mine, and a short adit on the Ajax Mine, all of which are on the Ford No. 1 mine. Past production from this development has amounted to 557 tons with an average unit content of 0.287 percent U_3O_8.

At the time of the examination, the miners were on leave to stake claims. According to information recently received, mining and transportation has been resumed under contract. Some high grade ore is present, as a specimen of rattlesnake ore from the face of the main adit gave a radiometric assay of 35.00 percent U_3O_8.

Mining Equipment and Other Facilities

Mining equipment consists of a gasoline-driven compressor, air receiver, two pneumatic drills, and two mine cars. Other facilities consist of a 40 ton ore bin below the portal of the Knox Mine adit, and a 20 foot by 40 foot framed house on the road east of the Ford No. 1 claim.

CONSLUSIONS AND RECOMMENDATIONS

The Ford-Fordo mine group is underlain by the uranium ore-bearing sandstone beds of the Salt Wash member of the Jurassic Morrison formation and there are uranium ore showings on one claim near the south rim that would justify Government assistance for an exploration program based on the probable small targets on the property.

Since the applicant has not submitted a requested map showing the favorable areas, it is recommended that the application be denied without prejudice.

/jw

IN REPLY REFER TO:

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

DMEA Date Rec'd JUN 7 1955

June 6, 1955

Memorandum

TRANSMITTED

SEP 15 1955

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA 3636, Atomic Power Uranium Corporation, Ford and Fordo groups of claims, Tenderfoot Mesa, Mesa County, Colorado (Uranium)

Enclosed are 10 copies of a geologic report by N. W. Bivins, U. S. Geological Survey, covering his examination of the subject property.

Bivins concludes that the geologic conditions in the area are favorable for the occurrence of small mineralized bodies containing a few hundred tons of uranium ore. It is his opinion that the program proposed by the applicant is not well adapted to the known geologic conditions and in all probability would not result in the discovery of significant amounts of ore. He suggests that the applicant complete a geologic map of the area showing pertinent features of the lithology. Bases on this information, the applicant can prepare a program of exploration with specific targets.

From the evidence presented in the report, it appears that exploration on the claims is warranted but that the applicant must complete certain preliminary geologic mapping before a program can be approved.

Denial of the application for exploration assistance without prejudice is indicated.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (10)

ENHarshman:arh

Reviewed by
DMEA [illegible] COMMITTEE
9-26-55
(date)

MINERAL DEPOSITS
DMEA
RECEIVED
JUN 6 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

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

June 3, 1955

MEMORANDUM

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

From: W. P. Williams

Subject: DMEA 3636, Atomic Power Uranium Corporation, Ford and Fordo groups of claims, Tenderfoot Mesa, Mesa County, Colorado

Transmitted herewith are 12 copies of a geologic report by N. W. Bivens covering a field examination of the above-referenced property.

The property has produced more than 500 tons of uranium and vanadium ore from the Knot and Ajax deposits. Mineralized rock is present in outcrops on and near the Ford and Fordo claims. History of the area shows, however, that the ore deposits are likely to be small. Favorable geologic conditions on the basis of Salt Wash sand thickness, presence of green and gray mudstone and carbonaceous material are present on the property. Bivens and I agree that further exploration is warranted on the property.

The applicant proposed a drilling pattern consisting of a grid on wide-spaced centers. I agree with Bivens that such a program would probably not be successful in finding the small ore deposits. Bivens recommends that any stage I drilling should be done by coring methods. The applicant objects to core drilling and prefers to do air rotary drilling at considerably less cost per foot.

I concur with Bivens' recommendations that the property merits DMEA assistance in an exploration program and that the applicant be asked to supply a map showing favorable areas near the Knot mine and near the Salt Wash outcrops on the property. With such a map it will be possible to devise a drilling program that will probably be successful in finding new uranium ore deposits. I recommend that the applicant be allowed to perform the drilling by air rotary methods.

The Exploration Division, U. S. Atomic Energy Commission, Grand Junction Operations Office, was asked for advice in evaluating this property, but the Commission had no specific data to offer. We are returning herewith the brochure covering this application.

W P Williams

W. P. Williams
Geologist

WPW/mlr
Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
9-26-55
(date)

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

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

DMEA 3636, Atomic Power Uranium Corporation, Ford and Fordo groups of claims, Tenderfoot Mesa, Mesa County, Colorado

Uranium

Geologic Report

by

N. W. Bivens
U. S. Geological Survey

June 3, 1955

Reviewed by
DMEA OPERATING COMMITTEE
9-26-55
(date)

DMEA 3636

INTRODUCTION AND SUMMARY

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The property was examined April 27, 1955, by W. D. McMillan, U. S. Bureau of Mines, H. F. Albee, R. T. Chew and N. W. Bivens, U. S. Geological Survey, and D. O. McGoon, representative for the applicant.

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The drilling operations would be supervised by D. O. McGoon. He appears capable to perform the supervisory duties.

GEOLOGY AND ORE DEPOSITS

The rocks exposed in the vicinity of the Ford-Fordo group are Mesozoic sediments that consist, from oldest to youngest, of the Upper Jurassic Morrison formation and the Lower Cretaceous Burro Canyon formation. 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. Overlying the Brushy Basin member is the Burro Canyon formation which is predominantly a conglomeratic sandstone containing lenses of gray shale.

Most of the significant uranium-bearing deposits mined in the vicinity of the Ford-Fordo group of 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 pink and white chert and feldspar.

The sandstones are commonly lenticular and irregularly bedded. Scour and fill type of sedimentation formed thick, elongate, 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 localized in or near these "trash pockets". In the vicinity of the deposits the mudstone in contact with the sandstone is gray-green in color.

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PROPOSED EXPLORATION

The applicant proposed to do 28,000 feet of drilling at a total cost of $28,760. The drilling was planned in two stages. The first stage (80 holes, 14,000 feet) was to be drilled on a moderate-spaced pattern, the distance between holes to be from 150 feet to an unspecified distance. The second stage holes (80, 14000 feet) were to be offset holes, with spacing unspecified. All holes were to be air-rotary holes.

Since all available information shows that the mineralized areas 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 air-rotary drilling.

It is suggested that the applicant submit a detailed geologic map 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 close-spaced holes (50 to 100 feet apart) to search for ore deposits. The close-spaced holes could probably be drilled by air-rotary methods. Although no accurate assays could be obtained by this method, the approximate depth, thickness, and grade of the mineralized material would be obtained by using a gamma-ray unit to probe the holes.

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

At the time of the field examination, the only part of the suggested program not acceptable to the representative for the applicant was the diamond drilling rather than air-rotary drilling on the first stage holes.

CONCLUSIONS AND RECOMMENDATIONS

Field examinations of the Ford-Fordo group of claims shows that geologic conditions may be favorable for the occurrence of new uranium-bearing deposits. The deposits are likely to be small targets that

would not be discovered by the applicant's proposed drilling program. Also, the first stage holes should be diamond-drill holes. It is recommended that the application be denied until the applicant submits the suggested geologic map accompanied by a more logical drilling program.

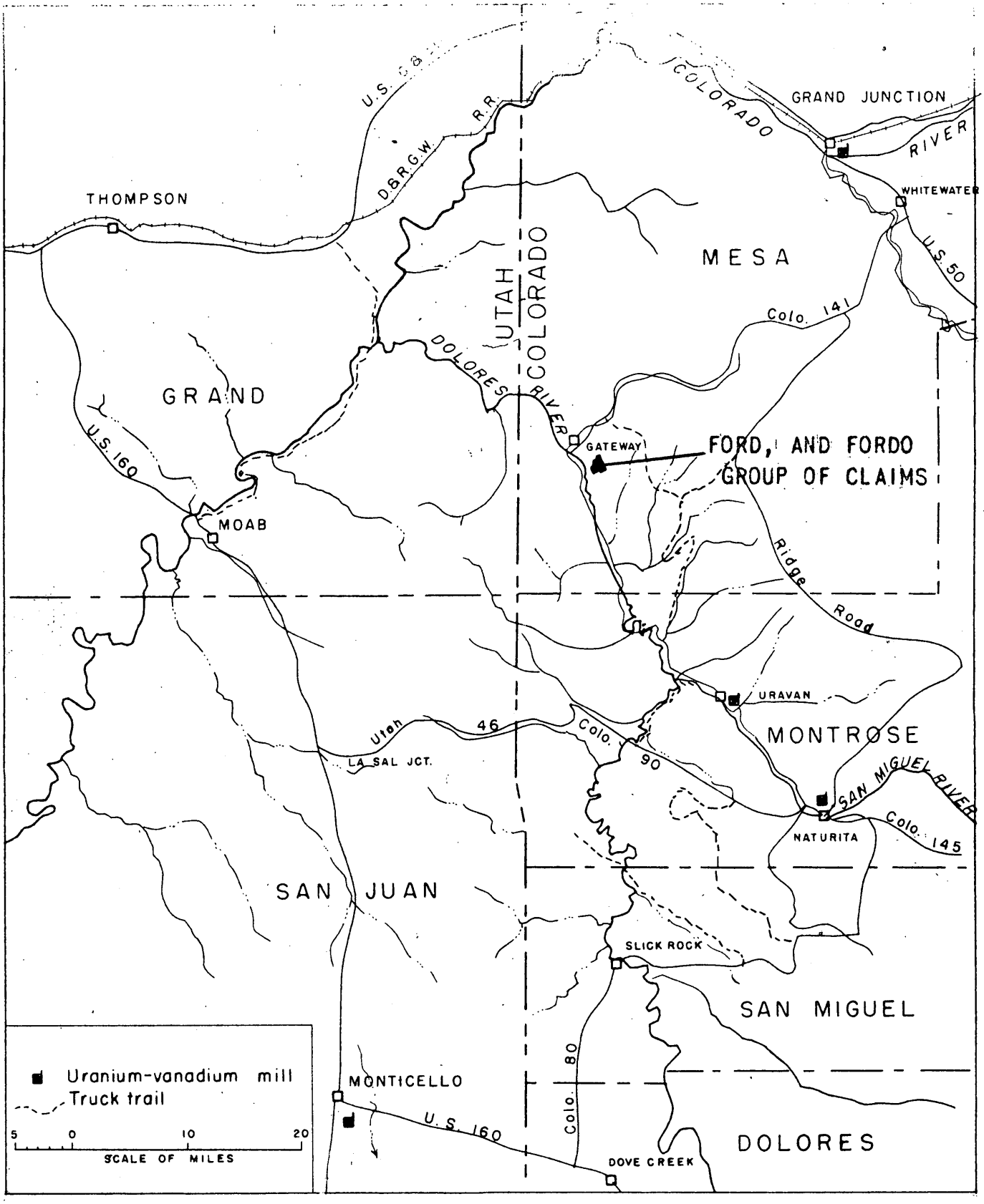
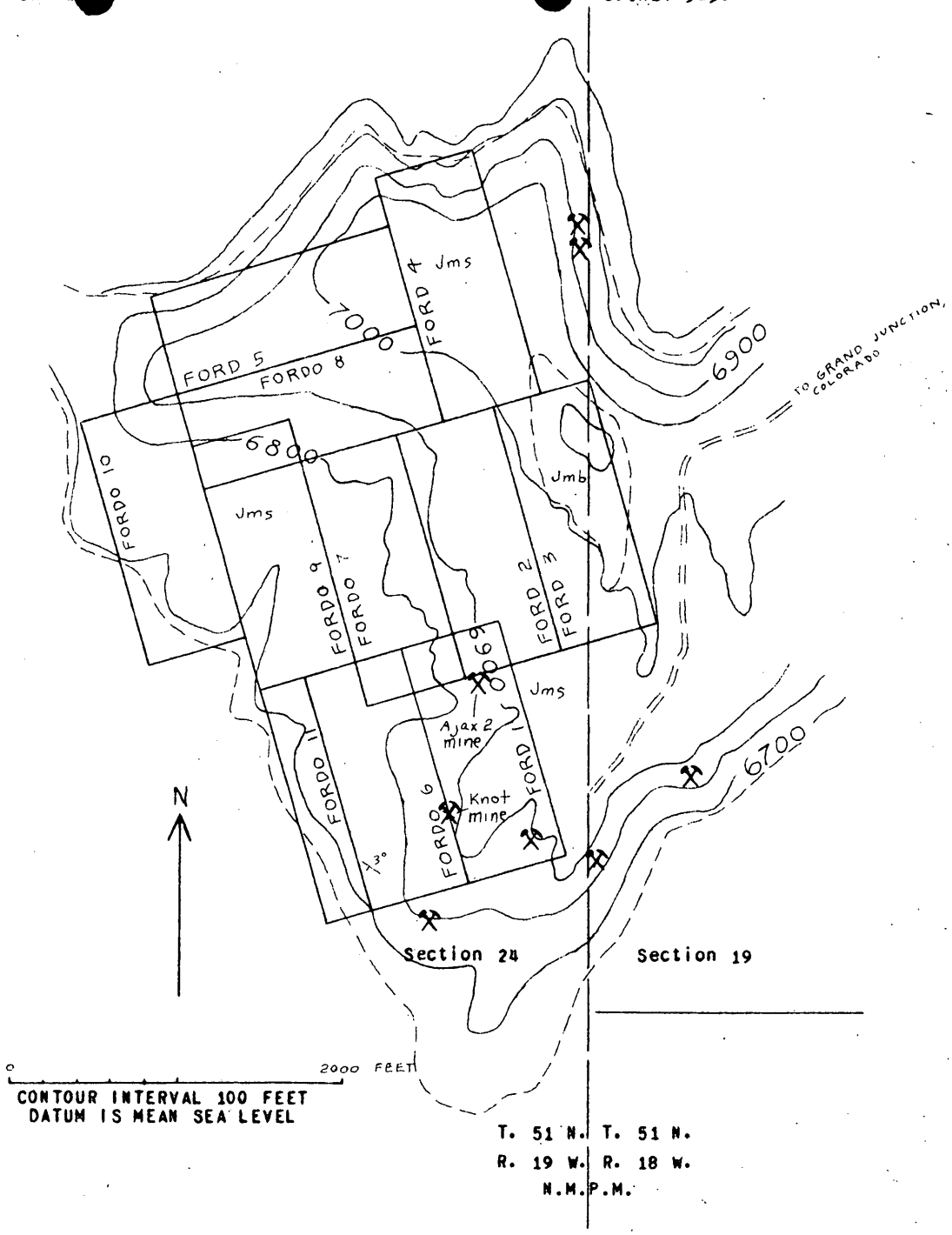


Figure 1. INDEX MAP OF PART OF THE COLORADO PLATEAU SHOWING LOCATION OF FORD, AND FORDO GROUP OF CLAIMS, ATOMIC POWER URANIUM COMPANY, MESA COUNTY, COLORADO



EXPLANATION

Jmb — JURASSIC BRUSHY BASIN MEMBER OF MORRISON FORMATION

Jms — JURASSIC SALT WASH MEMBER OF MORRISON FORMATION

FORMATION CONTACT

MINE OR PROSPECT

Note: GEOLOGY AND LAND LINES FROM U.S.G.S. GATEWAY QUADRANGLE MAP
CLAIM BOUNDARIES FROM APPLICANTS MAP

Figure 2. GEOLOGIC MAP SHOWING THE FORD AND FORDO CLAIMS, ATOMIC POWER URANIUM COMPANY, MESA COUNTY, COLORADO

2 in Ea

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED
SEP 14 1955

Office of
Executive Officer
DMEA Field Team
Region II

1605 Evans Avenue
Reno, Nevada

9/12/55

Memorandum

To: Operating Committee, DMEA, Interior Building, Washington 25, D.C.

From: Executive Officer, DMEA Field Team, Region II

Subject: Interim Inspection Report

Attached are the original and three copies of an Interim Report on:

Docket No. DMEA- 3647

Contract No. Idm-E 838

Commodity Mercury

Operator C. A. Coppin

Property Redbird Quicksilver Mine,
Pershing County, Nevada

By H. W. Jones

Dated 9/12/55

S. Ricker
S. Ricker
Executive Officer
DMEA Field Team, Region II

Attachments 4

Copy to: Finance Officer, Region II(w/copy of report)
R. M. Smith-USGS(w/copy of report)

INTERIM REPORT

RECEIVED
SEP 14 1955

Docket No.: DMEA-3647 (Mercury) 9/12/55

Name and address of operator: C. A. Coppin
Upper Valley, Lovelock, Nevada

Name and location of property: Redbird Quicksilver Mine
Pershing County, Nevada

Contract No.: Idm-E838

The Redbird Quicksilver Mine was visited on August 29 to determine the extent of work performed under the DMEA contract since the start of the project on July 19, 1955. Work consisted of drifting S 72° W for 42 feet through a wide zone of brecciation, then turning S 88° W for an additional 40 feet to the face. Total footage since the start of the project was 82 feet. A definite mineralized fault contact was encountered at 42 feet and followed to the face. Occasional cinnabar mineralization was noted in the calcite cemented limestone breccia. A localized "hot spot" of cinnabar was cobbed from the hanging wall at the face, directly adjoining a narrow then widened area in the fault fissure.

At the time of inspection, the fissure material at the face was about 3.0 feet wide and contained a mill grade ore estimated at 4 lbs. Hg per ton. One sample, 3.0 foot, (No. 247) was taken vertically across the recemented vein filling. Assay results have not yet been received.

H. W. Jones
Mining Engineer

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

August 19, 1955

224 New Customhouse
Denver, Colorado

Memo of 8/19

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3636 (Uranium), Ford and Fordo claim group, Mesa County, Colorado

We have had no reply to our letters to the applicant dated June 17 and July 18, 1955 requesting additional information on the subject application.

In conformance with our letter to the applicant dated July 18, 1955 will you please close this docket.

W. M. Traver

W. M. Traver

RECEIVED
AUG 24 1955

August 19, 1955

224 New Customhouse
Denver, Colorado

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3636 (Uranium), Ford and Fordo claim group, Mesa County, Colorado — Ajax Power Uranium Corporation

We have had no reply to our letters to the applicant dated June 17 and July 18, 1955 requesting additional information on the subject application.

In conformance with our letter to the applicant dated July 18, 1955 will you please close this docket.

W. M. Traver

W. M. Traver

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

RECEIVED
JUL 21 1955

224 New Customhouse
Denver 2, Colorado

July 18, 1955

Mr. Lucien Hugh Cullen, President
Atomic Power Uranium Corporation
404 Empire Building
Denver, Colorado

Re: Docket DMEA-3636 (Uranium)
Ford & Fordo claim group
Mesa County, Colorado

Dear Mr. Cullen:

We have received no reply to our letter of June 17, 1955 requesting additional information on your application on the Ford and Fordo groups of claims.

If we do not receive this information prior to August 18, 1955 we will presume that you are no longer interested in this exploration project and we will close the docket.

Very truly yours,

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

HMC:sr

cc Subject
Sec. Op. Comm. (2)
Harshman
Shaw
Hasler
Chron

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

RECEIVED
JUL 21 1955

224 New Custom house
Denver 2, Colorado

July 18, 1955

Mr. Lucien Hugh Cullen, President
Atomic Power Uranium Corporation
404 Empire Building
Denver, Colorado

Re: Docket DMEA-3636 (Uranium)
Ford & Fordo claim group
Mesa County, Colorado

Dear Mr. Cullen:

We have received no reply to our letter of June 17, 1955 requesting additional information on your application on the Ford and Fordo groups of claims.

If we do not receive this information prior to August 18, 1955 we will presume that you are no longer interested in this exploration project and we will close the docket.

Very truly yours,

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

HMC:sr

cc Subject
Sec. Op. Comm. (2)
Harshman
Shaw
Hasler
Chron

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

RECEIVED
JUN 20 1955

224 New Customhouse
Denver 2, Colorado

June 17, 1955

Mr. Lucien Hugh Cullen, President
Atomic Power Uranium Corporation
404 Empire Building
Denver, Colorado

June 17 Ltr.

Re: Docket DMEA-3636 (Uranium),
Ford and Fordo claim group,
Mesa County, Colorado

Dear Mr. Cullen:

To complete your application on the Ford and Fordo claim group, the following is required:

1. A map showing the location of all holes drilled on the property with copies of the radiometric logs of these holes.

2. A geologic map of the area showing the location and thickness of the sandstone units, thickness of the green mudstone in contact with the sandstone, and the relative amount of carbonaceous material in the sandstone.

We will hold your application in abeyance for a reasonable time pending receipt of the above information.

Very truly yours,

W. M. TRAVER

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

HMC:pw

cc: Subject
Chron
Sec.Op.Comm. (2)
Harshman
Shaw
Williams

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

RECEIVED
JUN 20 1955

224 New Customhouse
Denver 2, Colorado

June 17, 1955

Mr. Lucien Hugh Cullen, President
Atomic Power Uranium Corporation
404 Empire Building
Denver, Colorado

Re: Docket DMEA-3636 (Uranium),
Ford and Fordo claim group,
Mesa County, Colorado

Dear Mr. Cullen:

To complete your application on the Ford and Fordo claim group, the following is required:

1. A map showing the location of all holes drilled on the property with copies of the radiometric logs of these holes.

2. A geologic map of the area showing the location and thickness of the sandstone units, thickness of the green mudstone in contact with the sandstone, and the relative amount of carbonaceous material in the sandstone.

We will hold your application in abeyance for a reasonable time pending receipt of the above information.

Very truly yours,

W. M. TRAVER

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

HMC:pw

cc: Subject
Chron
Sec.Op.Comm. (2)
Harshman
Shaw
Williams

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

Defense Minerals Administration
RECEIVED
JAN 10 1955

224 New Customhouse
Denver 2, Colorado

January 7, 1955

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 and supporting data pertaining to the following applications for Government assistance in exploration work:

Atomic Power Uranium Corp. (Uranium)

W. H. King

Enclosures

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

Minerals Administration
RECEIVED
JAN 10 1955

224 New Customhouse
Denver 2, Colorado

January 7, 1955

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 and supporting data pertaining to the following applications for Government assistance in exploration work:

Atomic Power Uranium Corp. (Uranium)

W. H. King

Enclosures

RDB:lc

Copy to: Code 200
Docket - Atomic Power Uranium Corp.
E. N. Harshman
Chron

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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. 3636
Metal or Mineral Uranium
Date Received 1-10-55
Estimated Cost $28,760
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: Atomic Power Uranium Corp
404 Empire Bldg.
Denver, Colorado

(*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.

ATTACHED

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

ATTACHED

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

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

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

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

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

ATTACHED

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

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

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

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

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

16—66551-1

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

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

(*c*) The work will start within 30 days and be completed within 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 contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

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

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

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

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

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

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

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

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

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

(*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 Dec 26, 1954

Atomic Power Uranium Corp.
(Applicant)

By Lucien Hugh Cullen Pres.

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

Part I

B. Atomic Power Uranium Corp. was incorporated in the state of Delaware.

C. Lucien Hugh Callen, President and Director
Offices 404 Empire Building, Denver, Colorado
Offices 940 Electric Building, Houston, Texas

H. Arnold Guy, Secretary and Director
4902 Travis, Houston, Texas

Thomas Bryan, Assist. Secretary and Director
4307 Montrose Blvd., Houston, Texas

James E. Kelley, Treasurer and Director
The Denver Post Building, Denver, Colorado

Part III

A. The Ford-Fordo Claims are situated in sec 24 T51N R19W and sec 19 T50N R19W Mesa County Colorado

B. Ford-Fordo Claims Group
Knot Mine

C. Atomic Powers interest in land is that of an owner.

D. There are no liens or encumbrances on any of the above property.

F. Legal Description
Ford No. 1, recorded Book 566, page 152.
Ford No. 2, recorded Book 566, page 153.
Ford No. 3, recorded Book 566, page 154.
Ford No. 4, recorded Book 566, page 155.
Ford No. 5, recorded Book 566, page 156.
Fordo No. 6, recorded Book 609, page 496.
Fordo No. 7, recorded Book 609, page 497.
Fordo No. 8, recorded Book 609, page 498.
Fordo No. 9, recorded Book 610, page 370.
Fordo No. 10, recorded Book 610, page 371.
Fordo No. 11, recorded Book 610, page 372.

Mesa County

Part 4

PHYSICAL DESCRIPTION

There are two mines on the Ford and Fordo groups, the Ajax No. 2 and Knot Mine.

The Ajax No. 2 mine is located 400 ft. S.S.W. of the N.E. corner of Ford claim No. 1 and has absorbed the old Ford No. 1 mine since they both enter the same orebody. The Ajax No. 2 was developed from a mineralized showing on the second sandstone rim of the Saltwash member, Morrison Formation. There has been approximately 25 tons of ore removed from this mine and several ore streaks remain on the walls and face. However, it is believed that the major part of the orebody has been previously eroded because of negative drill holes drilled behind the present workings.

The Knot Mine orebody is situated approximately 450 ft. north along the west line of Ford Claim No. 1 and the east line of Fordo claim No. 6. The orebody apparently is a thick tabular deposit which increases in grade to its northern boundary and consists of yellow uranium vanadates with vanadium oxides overlying the majority of uranium ores. The estimated tonnage of .30% U_3O_8 ore which should be mineable is 2000 tons.

A drift 5 ft. by 7 ft. has been driven to the eastern edge of the orebody (approximately 70 ft. from drill hole No. 6) at which point the ore is 9 ft. thick and exceeds the width of the drift. The portal of this drift is situated approximately 210 ft. east of and approximately 80 ft. below collar drill hole No. 6.

There is a good truck road to the portal of the Knot Mine and another good truck road to the base of the ore bin.

The ore bin is of sound construction and is designed to hold approximately 40 tons of ore.

Part 5

PREVIOUS EXPLORATION PROJECTS

The first drilling and Exploration Project was started July 15, 1954. A total of 29 holes were drilled on Ford Claim No. 1 and Fordo Claim No. 6. The project was completed July 25, 1954 with 24% ore holes all of which were in the Knot Mine Orebody.

The second drilling and Exploration Project was started Aug.20, 1954. A total of 3,320 feet were drilled on Ford Claim No. 1, outlining the large mineralized body as illustrated on the attached map "Proposed Drilling Program".

Approximately 30% of all the holes drilled were placed outside of the process X* control areas. Without exception these holes were negative.

PROPOSED EXPLORATION & DRILLING PROGRAM
(See attached map)

The known ore horizons in the Ford-Fordo Claim area are the 1st, 2nd, 3rd, and 4th rims of the Saltwash member, Morrison Formation. However, the first rim is only an economical horizon in the Fordo group. It is the purpose of the exploration and drilling program to penetrate only those ore horizons that do not exceed the economic depth for the area involved. However, this is an arbitrary depth that may be increased with further geologic information.

The proposed exploration & drilling procedures are as follows:

1. Survey the drillsites to coincide with the theoretical junction of process X with the uranium introduction fractures.

2. Project the economic ore horizons to the drilling areas so as to gauge the drilling depth.

3. Bulldoze roads to the proposed drilling sites and clear an area 150 ft. in radius at each site.

4. Drill one hole in the center of the cleared area.

5. Drill 4 holes, one hole each at the intersection of the theoretical fractures with the circumfrence of the cleared area.

6. Proceed with the drilling as directed by the supervising geologist.

The proposed drilling program will be under direct supervision of Mr. D. O. McGoon, Jr., the chief geologist of Atomic Power Uranium Corp. Mr. McGoon supervised the previous exploration programs all of which are considered successful. He has received an associates degree from the University of Florida and has attended the Colorado School of Mines in which he now ranks as an irregular Senior. Mr. McGoon has approximately 1 year of extensive geological field experience in Eagle County, Colorado; Jefferson County, Colorado; San Rafael Swell area, Utah; Rock Creek area, Colorado; and Mesa County, Colorado.

(* See attached Hypothesis process X)

PROCESS X (HYPOTHESIS)

During post Jurassic times a tectonic process developed causing a strain ellipsoid fracture pattern. This fracture pattern, although regional in scope, may be interpreted as first degree curves by extreme localization. In the Ford-Fordo claims' area this fracture has an apparent strike N 11.5 degrees E with an H distance in the Morrison formation of approximately 500 feet.

Subsequent to formation of this fracture pattern, plutonic solutions varying in phase composition entered the fractures and permeated the surrounding sedimentary formations. Thus, the older formations received the first phase solutions, according to permeability, until saturated, causing later phase solutions to penetrate younger formations. The phase that permeated the sandstone facies of the Salt Wash member, Morrison formation, is believed to be a uranium precipitant, called herein Process X.

****

After the development of Process X, probably during the Laramide revolution, a radiating, ~~elliptical~~ system of fractures was formed which locally strike N 68 degrees W dipping in excess of ~~95~~ 85 degrees southerly (as measured in the Ajax No. 2 mine) with an H distance in the Morrison formation of approximately 700 feet. It is believed that this fracture system is responsible for the uranal ion introduction into the permeable sandstone facies. Where sufficient quantities of this solution entered facies containing sufficient quantities of Process X, an ore body was formed.

A later silicification phase caused the sandstone to crystallize thus obliterating the ancient fracture patterns. However, where vanadates were trapped in these fractures, the fracture may still be discerned.

Part 6

ESTIMATE OF COSTS

Surveying Drilling Sites (by contract) 16 sites @ $75.00 each -	1200.00
Road Building (by contract) 256 hrs. @ $10.00 per hr. D6 Cat -	2560.00
Geologic Evaluation of Drill Holes 3 months salary @ $125.00 per week -	1500.00
Drilling (by contract) 80 holes 175 ft. deep @ .80 per foot	11200.00
80 offset holes 175 ft. deep @ .80 per ft. -	11200.00
Operating Materials & Supplies	250.00
Miscellaneous Expenses Camp food -	200.00
Bookkeeping -	300.00
Jeep Station Wagon 2500 miles @ .10 per mile -	250.00
Total	28,760.00

BEH 11/9/54

INTRODUCTION

This investigation was undertaken for the purpose of evaluating ore reserves of the Knot mine of the Atomic Power Uranium Corporation, located on Tenderfoot Mesa, Mesa County, Colorado.

Geology will be only briefly mentioned as the ore reserves are the primary interest here.

Data Sources

The information which formed the basis for this report is based upon a field examination by the writer and maps and charts supplied by Mr. D. O. McGoon of the Atomic Power Uranium Corporation.

BEH 11/9/54

CONCLUSIONS AND RECOMMENDATIONS

The Knot mine orebody, as presently known, was discovered by the application of sound geologic and geophysical principles and should provide more information for future exploration work in the area as development progresses.

The orebody is estimated to consist of 1932 tons of probable ore, indicated by non-core percussion drilling results, and 2,137 tons of possible ore which is inferred from geologic evidences. Average grade of ore shipped should be about 0.53% uranium oxide and 0.66% vanadium oxide. Gross value of the probable tonnage is $62,587.19 and of possible ore, $69,217.43 for a total of $166,804.62. This figure includes the initial production bonus of $35,000 for the first 10,000 pounds of uranium oxide.

It is recommended that detailed geologic mapping of the underground workings be carried out to possibly provide some aids in future exploration work. Additional exploration should be done in the nearby areas of known mineralization.

BEH 1/19/54

History and Development

The Knot mine orebody was discovered as the result of an exploratory drilling program carried out by Atomic Power Uranium Corporation personnel in the summer of 1954. Drifting to open the orebody was begun in August of 1954 and the ore was encountered in the drift in October of 1954.

Several loads of ore have been shipped from the property with an average grade of 0.28 percent uranium oxide and 0.56 percent vanadium oxide. Stoping and preparations for cross-cutting the ore to the south were in progress at the time of the writer's visit.

The discovery of this orebody can only be attributed to the use of sound geological principles by the personnel of the Atomic Power Uranium Corporation in conducting their exploration program.

BEH 11/9/54

PHYSICAL FEATURES

Features other than geology will be discussed here.

Location

The Knot mine is located on the western rim of Tenderfoot Mesa, Gateway mining district, Mesa County, Colorado, Sec. 24 Twp. 51 N Range 19 W.

Access

The mine may be reached by traveling along State Highway 141 to Taylor's ranch (about 12 miles from Highway 50), then traveling the Tenderfoot Mesa road until the mine road is reached. This road is marked by a sign indicating the turnoff. The roads are passable to a passenger car in the summer but snow makes it difficult for this type of vehicle to travel in the winter months.

Vegetation and Topography

The area is well covered with a good growth of pinion trees and sagebrush. Thickness of the cover is enough to hamper most surveying work.

BEK 11/9/54

Relief is on the order of 200 feet and various benches are present due to differential erosion of sandstone and shale units of the Morrison.

Climate

The area is in a semi-arid region and rainfall is light. Temperatures vary from 100 degrees in the summer to minus 20 degrees in the winter. Snowfall should not exceed 24 inches but sometimes is sufficient to make travel difficult.

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GEOLOGY

The geology of the area will not be discussed in great detail because of primary emphasis on the orebody reserve estimates.

Regional Environment

The Knot mine is situated upon the western flank of the Uncompahgre uplift in the westerly dipping sediments which border it. The uplift is an elevated area of pre-cambrian granite which is probably underlain by Tertiary intrusives.

Some faulting accompanied the emplacement of the uplift but very little is noticeable in the area of the Knot mine.

Local Features

The known uranium-vanadium ore bodies in the area occur in one of the three sandstone units of the Saltwash member of the Morrison formation. These are fluvial sediments and vary greatly in thickness and direction of trend. Fracturing is prevalent and appears to increase in quantity in the ore zone but this relationship is somewhat doubtful.

Ore-finding criteria of value in future exploration seems to be in the mapping of alteration of normally reddish-brown mudstones to light bluish-gray mudstones; areas of rapid change in sandstone thickness and

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direction; quantitative mapping of fracturing and jointing; and possible radioactivity highs over ore-bearing areas.

Economic Deposits

The Knot mine ore body is the only deposit which will be considered here although there are evidences of other deposits in the immediate area. Location and size of the orebody is shown on the accompanying map of the workings and drill holes.

Ore reserves are estimates from probe records supplied by Atomic Power Uranium Corporation personnel determined from the results of radiometric probing of drill holes. Inasmuch as at least 9 feet of ore was exposed in the mine workings, it seems safe to assume that results of the probing are reliable within their limits of accuracy. A tonnage factor of 12 cubic feet of rock in place per ton of ore was used in calculations of tonnages and the various blocks were used as shown on the map. The drill hole within the block provided control for the computations within the particular block. Average grades for the holes were computed by weighting the values for the 1 foot intervals.

Probable tonnage of ore in the body was estimated as 1932.3 tons with an average grade of 0.33% uranium oxide and 0.66 percent vanadium oxide. Gross value of this body, excluding bonus and haulage allowance benefits, is estimated at $62,587.19. Another area of possible ore estimated at 2136.7 tons and from average grade and thickness values of the first block, has an indicated value of $69,217.00.

APPROVED:

F. C. Meriell, Reg. Eng.

Burt E. Hartmann, Geological Engineer
TECHNICAL SERVICES, INC.

ARTICLE OF AGREEMENT

This article of agreement, made this 10th day of August, 1954 between UCO VENTURES, INC., of the City and County of Denver, and State of Colorado, party of the first part, and ATOMIC POWER URANIUM, INC., OF THE City of ~~Dallas~~ HOUSTON, State of Texas, party of the second part,

WITNESSETH, that the parties to this agreement, in consideration of payments to be made and services to be performed, as hereinafter stated, stipulate and agree to be bound by and to perform all agreements, conditions and covenants hereafter set forth:

1. Party of the first part agrees to and does by these presents, assign, sell, bargain and otherwise set-over to the party of the second part all of its right, title, interst, estate, claim and demand whatsoever in and to fifty-one percent (51%) of the working interest in and to the following mining claims, to-wit:

Name of Claim	Date of Location	Mesa County Records
Ford No.1 lode	5-19-52	Book 566 page 152
Ford No.2 lode	5-19-52	Book 566 page 153
Ford No.3 lode	5-19-52	Book 566 page 154
Ford No.4 lode	5-19-52	Book 566 page 155
Ford No.5 lode	5-19-52	Book 566 page 156
Ford No.6 lode	5-19-52	Book 603 page 137

These claims lie in Section 24, Township 51 North, Range 19 West, Wenderfoot Mesa, Gateway Mining District, Mesa County, Colorado.

2. Party of the second part agrees to pay the following sums of money to the party of the first part on the dates and in the amounts shown below:

$3,000.00 dollars on June 17, 1954
$9,000.00 dollars on August 1, 1954
(Receipt of the payment of the above sums of money is hereby confessed and acknowledged by the party of the first part)
$6,000.00 dollars on November 1, 1954,

and to pay party of the first part forty-nine percent (49%) derived from working the Ford Mining Claims above described.

3. Party of the second part agrees to immediately take possession of said Ford Mining Claims and to forthwith begin exploration, developement and ore extraction operations thereon with the ultimate goal of bringing said claims into full mining operation.

It is further agreed that the party of the second part shall have full, complete and unhindered control of the exploration, developement and mining of said claims and that it shall select the personnel, methods, techniques and procedures which in its opinion are best suited to bring said mining claims into full and complete production.

4. The party of the second part also agrees to diligently press and conduct mining operations on said claims and not to abandon said operations without first submitting, to the party of the first part, a full and complete report of some disinterested mining engineer, selected by both parties hereto, showing that the Ford Mining Claims are not capable of being mined properly and with profit, or that the ore therein has been exhausted, or that the ore therein is of such low grade that it is impractical to mine.

5. Party of the second part agrees to furnish the party of the first part with a monthly report of the amount of ore mined, the amount shipped, the expenses of operations and the amount of receipts received during the period. At this time, party of the first part will also pay the party of the second part its forty-nine percent (49%) of the net proceeds arising from working said Ford claims. The reports and the payments will be made and paid to the party of the first part at its address in Denver, Colorado.

6. Assignment or sale of any interest created by this agreement will not be made, executed nor delivered without first securing the written consent of the other party.

7. Any dispute arising under or caused by reason of this agreement shall be submitted to a committee of three for arbitration thereof and the parties hereto agree that precedent to filing any suit at law or equity involving any controversy of this kind or character, they will first seek a decision from the committee for arbitration. The committee of arbitration shall consist of one representative selected by the respective parties hereto and one representative selected by both parties hereto. All meetings of the committee will be held in Denver, Colorado and if said committee fails to procure settlement of the dispute, then, and in that event, the

parties agree to submit the controversy, in proper suit, to the courts of the State of Colorado and to be bound by the verdict or judgment as rendered by said courts based upon the statutes and decisions prevailing in said courts. It is further agreed that all matters pertaining to this agreement shall be decided and disposed of as though the parties hereto were both residents of the State of Colorado.

IN WITNESS WHEREOF we have affixed our signatues hereto on the day and year first above written.

(SEAL)

UCO VENTURES, INC.

by James E. Kelley
President

Witness the official seal of UCO VENTURES, INC.

Alonzo Hudkins
Secretary

(SEAL)

ATOMIC POWER URANIUM, INC.

BY Lucien Hugh Cullen
President

Witness the official seal of ATOMIC POWER URANIUM, INC.

H. Donald Guy
Secretary

AFFIDAVIT OF PAYMENT

To whom it may concern:

I, James E. Kelley being of legal age and sworn upon my oath do depose and say:

1. That I am the president of UCO Ventures, Inc.

2. That UCO Ventures, Inc. has received the following payments from Atomic Power Uranium, Inc. in accordance with the articles of agreement executed and delivered between these corporations on the 10th day of August, 1954, to-wit:

$3000.00 on June, 17, 1954
$9000.00 on August 1, 1954
$6000.00 on November 1, 1954

3. That UCO Ventures, Inc. has received and recorded a proper release of deed of trust given to secure payment of the Ford claims situated in the Gateway Mining District, Mesa County, State of Colorado.

James E. Kelley

Subscribed and sworn to before me, this 12th day of November A. D. 1954.

My Commission expires January 20, 1957

Thomas E. Kelly
Notary Public

DRILL HOLE NO. →	6	18	19	20	21	23	24
DEPTH ↓ FEET							
74		.15	.19	.11			
75		.15	.18	.16			
76		.10	.11	.20	.14		
77	.11	.40	.11	.24	.14	.14	
78	.14	.98	.11	.26	.18	.20	
79	.17	.53	.12	.22	.14	.16	
80	.21	.50	.20	.19	.11	.42	
81	.30	.60	.22	.24		1.70	
82	.44	.70	.28	.17		1.58	
83	.68	CAVED	.28	.16		1.34	.11
84	1.80		.20	.14		.32	.12
85	.78		.18	.12		.22	.12
86	.64		.14			.24	
87	.30		.11				
88	.19		.11				
89	.14						
90	.14						
91	.12						

CONFIDENTIAL GEOLOGIC DATA

KNOT MINE OREBODY (% U_3O_8)
RADIOMETRIC PROBE RESULTS

BABBEL PROBE—CALIB. .74% U308

SCALE NO. 4 SEPT. 27, 1954

NOTE: ALL COLLAR ELEVATIONS ADJUSTED TO COLLAR OF DRILL HOLE NO. 6.

ATOMIC POWER URANIUM CORP.

BY D. O. McLaughlin Jr.

CHIEF GEOLOGIST

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1201 N. DIVISION STREET
SPOKANE 2, WASHINGTON

OFFICIAL BUSINESS

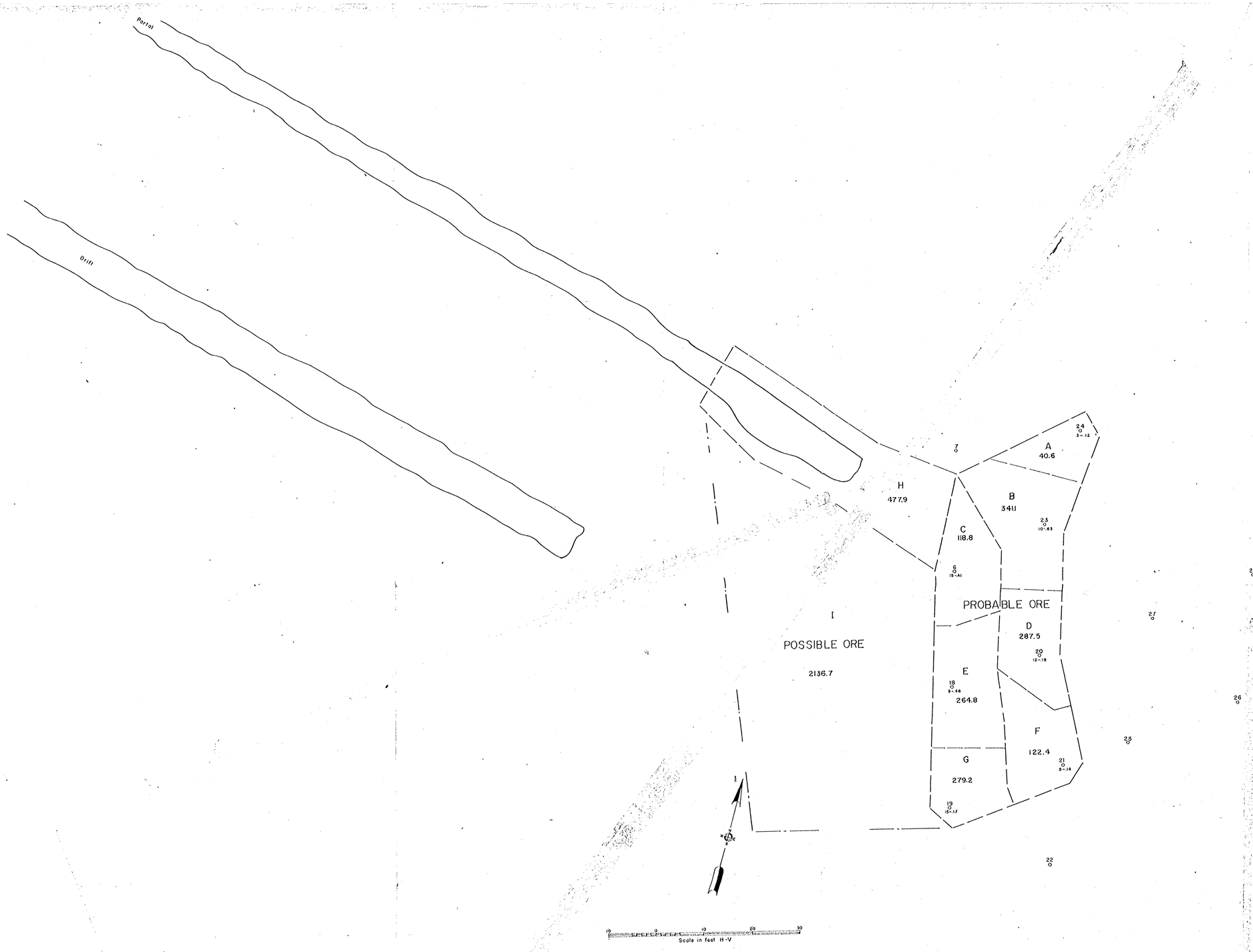
PENALTY FOR PRIVATE USE
PAYMENT OF POSTAGE
(PMGC)

JAN 7 8 PM 1955 WASH.

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

Maps
DMEA
3638
Atomic Power Uranium
Corp.

+ are Reserve
Calculations



Atomic Power Uranium Corp.
Knot Mine Tenderfoot Mesa
Gateway District-Mesa County, Colo.

ORE RESERVE CALCULATIONS

ATOMIC POWER URANIUM CORPORATION
KNOT MINE
TenderFoot Mesa, Gateway District
Mesa County, Colorado

Tonnage factor taken at 12.0 cubic feet per ton.

Probable Ore:

Block	Area	Thickness	Volume	Tons	Assay %	Assay x Tons
A	162.5	3	486.5	40.6	.12	4.87
B	409.4	10	4094.0	341.1	.63	214.89
C	237.5	6	1425.0	118.8	.41	48.71
D	287.5	12	1425.0	287.5	.18	51.75
E	353.1	9	3450.0	264.8	.46	121.8
F	293.75	5	1468.8	122.4	.14	17.14
G	223.4	15	3351.0	279.2	.17	47.46
H	637.5	9	5735.5	477.9	.28	133.81
				1932.3		640.43

Possible Ore: 640.43/1932.3 = 0.33% uranium oxide

I	2881.2	8.9	25640.9	2136.7	.33	----

Probable Ore Value:

1932.3 tons at $32.39 per ton = $62,587.19
10,000 lbs. uranium oxide at $3.50 per pound = 35,000.00
= $97,587.19

Possible Ore Value:

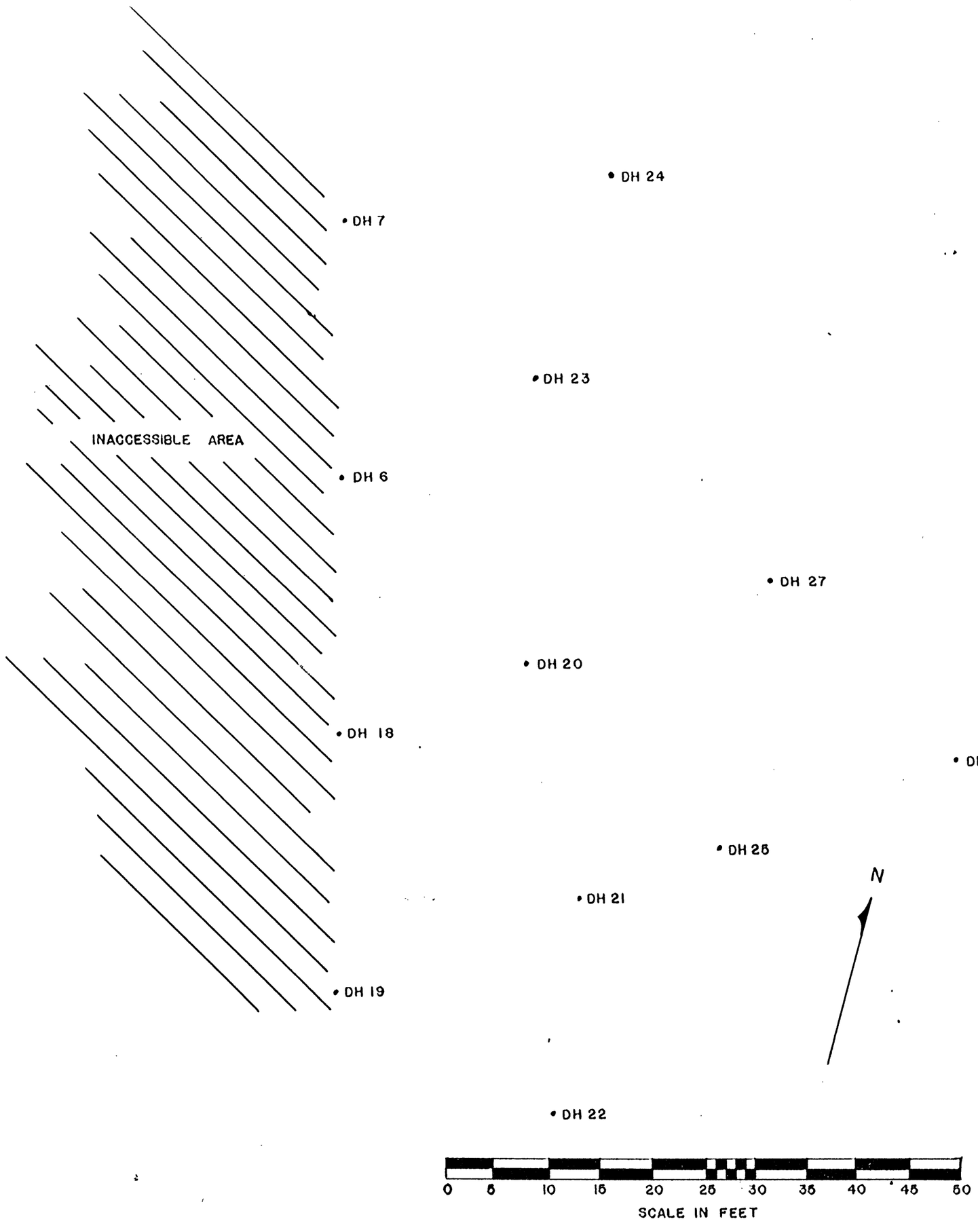
2136.7 tons at $32.39 per ton = $69,217.43

TOTAL INDICATED VALUE OF BOTH CLASSES OF ORE = $166,804.62

Vanadium-uranium ratio taken as 2:1 (per McDoon)
Average Vanadium Value = 0.66%

Burt E. Hartman

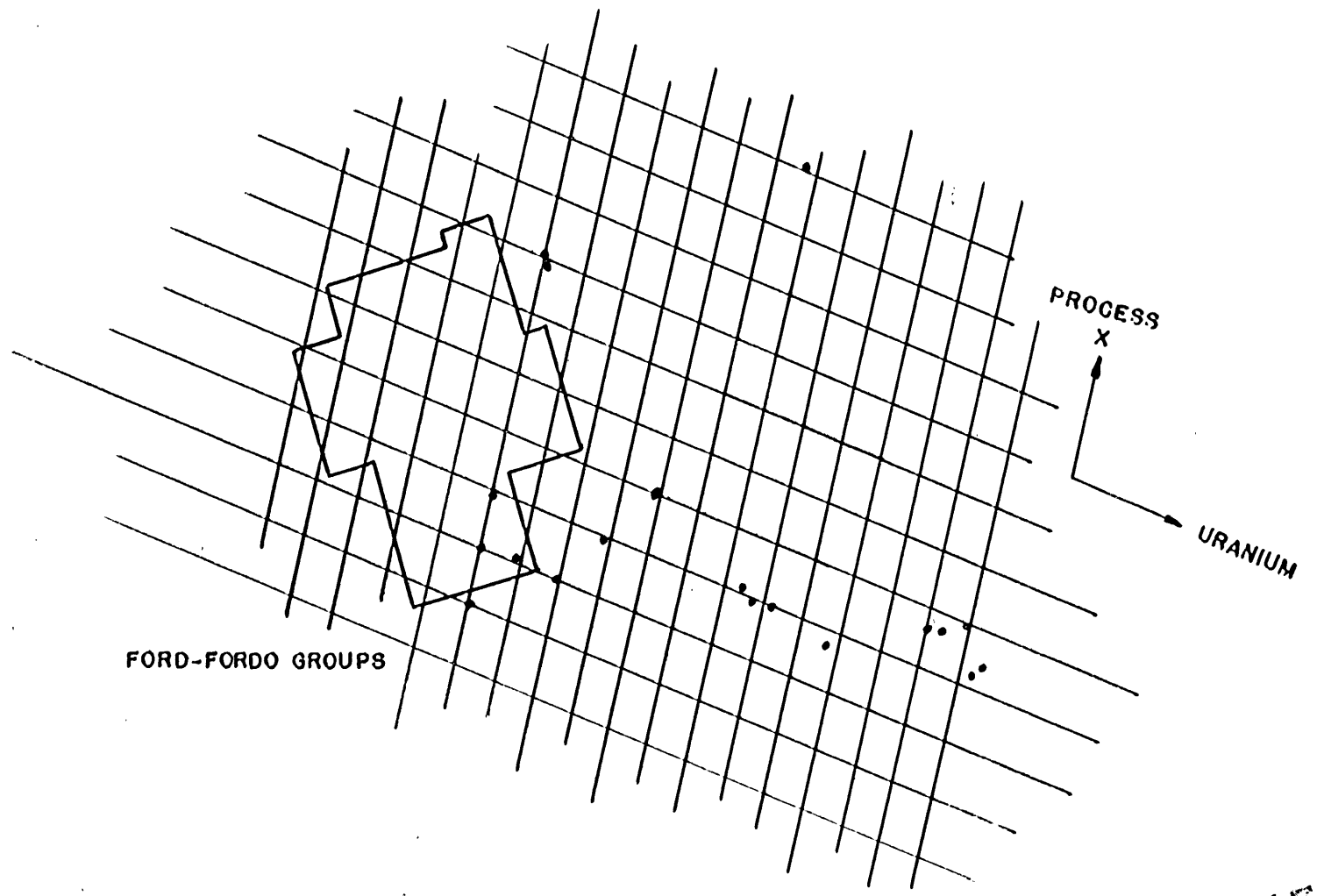
Approved: Somerville



CONFIDENTIAL GEOLOGIC DATA

KNOT MINE OREBODY
PLAN VIEW OF DRILL HOLES
SEPT. 15, 1954

ATOMIC POWER URANIUM CORP.
BY D.O. McGoon Jr.
CHIEF GEOLOGIST



CONFIDENTIAL
GEOLOGIC DATA

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• · MINE OR PROSPECT

0 2000 4000

SCALE IN FEET

LOCAL CORRELATION MAP
FRACTURE ORE CONTROL
TENDERFOOT MESA

FIRST DEGREE INTERPRETATION OF
THE SECOND DEGREE EQUATIONS ?

SEPT. 25, 1954

ATOMIC POWER URANIUM CORP.

BY D. O. McLoon Jr.

CHIEF GEOLOGIST