STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

DATE: March 29, 1954

Delegated Uranium Reserves
MAR 31 1954

FROM : Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

SUBJECT: Final Field Team Report DMEA Docket 3225 (Uranium), Ira N. Sprecher, Gallup, New Mexico, trustee, applicant, Group Claims, Sec. 2, T. 13 N. R. 11 W.

The applicant applied for $4,000 to explore the property identified above for uranium. The property was examined and the application denied by Region IV. W. A. Carlson, Acting Chief of the Grants Sub-Office, U. S. Atomic Energy Commission, accompanied the examiners and agreed with their conclusion that Government participation was not warranted.

Parts of the property are underlain by three formations, the Todilto, Morrison, and Dakota that are host rocks for uranium ore in the general area surrounding the claims. Most of the applicant's exploration was planned to explore the Dakota formation. The examiners found that black shales in the Dakota are slightly uraniferous, but found nothing to suggest that uranium was likely to be sufficiently concentrated to form ore bodies. The Morrison rocks on the property do not have features commonly considered favorable to ore, and exploration by the AEC in an adjoining section suggests that the Todilto is not sufficiently favorable to warrant exploration at the depth that prevails on the property. For those reasons, the examiners recommended and the Field Team denied the application.

I concur with the Field Team's conclusion and action.

Arthur P. Butler, Jr.

Copies to: E. Wm. Ellis (2)

E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

March 29, 1954

Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

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I concur with the Field Team's conclusion and action.

Copies to: E. Wm. Ellis (2)

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

Defense Materials Administration
Received
MAR 22 1954

March 19, 1954

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4640

From: H. D. Keiser, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket 3225, Ira N. Sprecher, Group claims, McKinley County, New Mexico

I have reviewed the subject report of the Field Team and have discussed it with Joseph O. Hosted, representative of the Atomic Energy Commission.

It is recommended that denial by the Field Team of the application involved be approved.

The report has been forwarded to the Chief, Minerals Division, Bureau of Mines, in accord with the routing slip attached thereto.

H. D. Keiser

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

Received
22 1954

March 19, 1954

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Signed

H. D. Keiser

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

224 New Customhouse
Denver 2, Colorado

March 10, 1954.

Mr. Ira N. Sprecher
306 South Second Street
Gallup, New Mexico

Re: Docket No. DMEA-3225

Dear Mr. Sprecher:

Reference is made to your application for Government aid on the Group Claims.

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

A careful study of your property and data available to this agency reveals that the probability of disclosing mineable reserves of Uranium is not considered sufficiently promising to justify Government participation. Under these circumstances, we regret to advise that your application for exploration aid is denied.

Very truly yours,

W H King
W. H. King
Field Team, Region IV

A H Koschmann
A. H. Koschmann
Field Team, Region IV

HMC:cwm

cc: Docket
Administrator, DMEA
WMTraver
RPFischer
ERGordon
AHKoschmann (2)
Chron.

Reviewed by
DMEA OPERATING COMMITTEE

(date)

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

224 New Customhouse
Denver 2, Colorado

March 10, 1954.

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 200

From: Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3225 (Uranium), Ira N. Sprecher, Group claims, McKinley County, New Mexico.

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

W. H. King

W. H. King

A. H. Koschmann

A. H. Koschmann

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
3-19-54
(date)

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

COPY

224 New Customhouse
Denver 2, Colorado

March 10, 1954.

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Very truly yours,

/s/ W. H. King
Field Team, Region IV

/s/ A. H. Koschmann
Field Team, Region IV

HMC:cwm

cc: Docket
Administrator, DMEA
WMTraver
RPFischer
ERGordon
AHKoschmann (2)
Chron.

Reviewed by
DMEA OPERATING COMMITTEE
3-19-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

March 10, 1954.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination - DMEA Docket 3225 (Uranium), Ira N. Sprecher, Group Claims, McKinley County, New Mexico.

Enclosed are eleven copies of the engineering report of examination on the subject docket.

The applicant requested $4,000.00 for a total of 4,600 feet of rotary drilling.

The engineer examiner concludes there is little chance that exploration would encounter significant uranium mineralization. The A.E.C. has drilled 40 holes immediately south of this property and no appreciable mineralization was found.

The engineer examiner recommends the application be denied and we concur in this recommendation.

W. H. King

W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
3-19-54
(date)

Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
March 4, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

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

Subject: DMEA 3225 (Uranium) The Group claims, Ira N. Sprecher, Trustee, McKinley County, New Mexico

Enclosed are the original and ten copies of the "Summary, Conclusions, and Recommendations" by R. R. McLellan, Bureau of Mines, and N. S. Johnson, Geological Survey, and of McLellan's engineering report on the above docket.

McLellan concludes that although the Dakota sandstone, a favorable horizon for mineralization, shows slight radioactivity, there is little reason to expect that deposits of importance will be discovered by drilling exploration back from rim exposures on the applicant's property. The only possibility would be drilling one limited zone showing slightly higher radioactivity which could easily be explored by the applicant without Government assistance. The Morrison formation in the area does not show enough uranium mineralization, and the Todilto limestone, the most favorable formation, is at too great a depth to justify testing of either. Denial of the application is recommended.

I concur with the conclusions and recommendations, and a representative of the Atomic Energy Commission who accompanied the examining team also concurs.

The brochure forwarded to this office by the Chief, Mining Methods Branch, Mining Division, Region IV, on January 18, 1954, is also enclosed.

W. M. Traver

W. M. Traver

enclosures

WMT/kp

cc 10
DMEA 3225
Chron

Reviewed by
DMEA OPERATING COMMITTEE
3-19-54
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

February 26, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3225, Ira N. Sprecher, Group Claims, McKinley County, New Mexico

Enclosed are 11 copies of a geologic report by H. S. Johnson, Jr., of the U. S. Geological Survey covering the above docket.

It has been recommended that the application be denied.

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (11)

Reviewed by
DMEA OPERATING COMMITTEE
3-19-54
(date)

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

February 24, 1954

Memorandum

To: A. H. Koschmann, DMEA Field Team, Region IV

From: R. P. Fischer, Supervisor Colorado Plateau District

Subject: DMEA 3225, Ira N. Sprecher, Group claims, McKinley County, New Mexico

Transmitted herewith are eleven copies of a geologic report on the Ira N. Sprecher Group claims, McKinley County, New Mexico. Assistance was requested in exploring for uranium deposits. The proposed work consists of drilling and is estimated to cost $4,000.

The attached report was prepared by H. S. Johnson, Jr., and is based on a joint field examination on February 4, 1954, in company with R. R. McLellan, USBM; W. A. Carlson, AEC; and the applicant.

On the basis of the distribution and habits of the known deposits in the area, the outcrop examination, and tests for radioactivity, it is concluded that the exploration applied for has little chance of yielding significant reserves of uranium ore. It is therefore recommended that the application be denied. Mr. Carlson of AEC is in agreement with these conclusions and the recommendation, and I also concur.

R. P. Fischer

R. P. Fischer

Reviewed by
DMEA OPERATING COMMITTEE
3-19-54
(date)

Enclosures 11
RPF/mlr

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3225, The Group Claims

Ira H. Sprecher

McKinley County, New Mexico

Uranium

R. R. McLellan, Mining Engineer
Bureau of Mines

H. S. Johnson, Geologist
Geological Survey

February 19, 1954

Reviewed by
DMEA OPERATING COMMITTEE
3-19-54
(date)

DMRA 3025

THE GROUP CLAIMS
IRA H. SPRECHER
McKINLEY COUNTY, NEW MEXICO

Summary, Conclusions, and Recommendations

By R. R. McLellan
Mining Engineer
Bureau of Mines

and

H. S. Johnson
Geologist
Geological Survey

DMEA 3225

THE GROUP CLAIMS
IRA N. SPRECHER
McKINLEY COUNTY, NEW MEXICO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By R. R. McLellan and N. S. Johnson

Ira N. Sprecher of Gallup, N. Mex., applied to the Defense Minerals Exploration Administration for assistance to explore for uranium on the Group claims, sec. 2, T. 13 N., R. 11 W., New Mexico principal meridian, McKinley County, N. Mex. The applicant proposes to explore portions of the Dakota and Morrison formations by rotary drilling approximately 23 holes, or a total of 4,600 feet of drilling at a cost of $4,000.00, Government participation 75 percent or $3,000.00. The applicant failed to submit a specific plan of exploration and included only the cost of the contract drilling. The added expenses of road construction, supervision, sampling, radiometric logging, and miscellaneous costs were not considered in the application.

The property was inspected on February 4, 1954, by Defense Minerals Exploration Administration representatives accompanied by the applicant and by W. A. Carlson of the Atomic Energy Commission. It was concluded that the claims do not show sufficient evidence of containing ore to justify the expenditure of Government funds for exploration.

The claims are on the northeast flank of the Zuni uplift in northwestern New Mexico. Outcropping in the area covered by these claims are the Bluff and Morrison formations of Jurassic age and the Dakota formation of Cretaceous age. The beds strike about N. 60° W. and dip about 3-5° to the northeast. Black carbonaceous shales in the basal part of the Dakota formation are weakly radioactive, but are not considered likely to contain an economic uranium deposit. The Morrison formation in the vicinity of the Group claims does not appear to be favorable for sandstone-type uranium deposits. It is rather uniformly sandy and lacks the lenticularity associated with favorable ground. The Todilto formation does not outcrop on the Group claims, but it is present at depth and may be mineralized. However, it is not considered a suitable target for exploration of the type the applicant proposes because the shallowest depth to it is estimated to be about 200-250 feet at points along the southern boundary of section 2. Also, the Atomic Energy Commission has drilled several holes to the Todilto at points near the northern boundary of section 11 immediately south of section 2, but has not found significant mineralization.

Although the carbonaceous shale at the base of the Dakota sandstone is slightly radioactive as well as portions of the Morrison formation below the shale, there is little reason to believe that ore-grade material will be encountered by drilling back from these exposures. The limited amount of drilling that might be justified to explore a possible channel in the carbonaceous shale could easily be financed by the applicant without Government assistance. It is therefore recommended that the application be denied.

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORTS OF EXAMINATION BY FIELD TEAM REGION IV

DMEA DOCKET 3225, Ira N. Sprecher, Group claims

McKinley County, New Mexico

Uranium

Geologic Report

H. S. Johnson, Jr., Geologist

U. S. Geological Survey

February 24, 1954

Reviewed by
DMEA OPERATING COMMITTEE
3-19-54
(date)

INTRODUCTION AND SUMMARY

In December 1953, Ira N. Sprecher of 306 South Second Street, Gallup, N. Mex., applied (DMEA 3225) for Government assistance to explore for uranium on the Group claims covering all of sec. 2, T. 13 N., R. 11 W., McKinley County, N. Mex. Access to the Group claims is provided by about 5.5 miles of dirt road leading northeast from Prewitt on U. S. Highway 66. The last mile of road is better classified as a jeep trail at the present time. Mineral rights to all of sec. 2 are held by Mr. Sprecher under the terms of a mining lease obtained from the State of New Mexico in May 1952.

The Group claims were examined on February 4, 1954, by R. R. McLellan of the Bureau of Mines and H. S. Johnson, Jr., of the Geological Survey, accompanied by W. A. Carlson, geologist in charge of the Grants district office of the Atomic Energy Commission. The applicant, Ira N. Sprecher, and Henry S. Glasscock, an interested party, were also present during the examination.

To date there have been no mining or systematic prospecting operations on the property. The applicant has prospected the surface with Geiger and scintillation counters and has dug several shallow prospect holes, but no appreciable mineralization has been found. The applicant has had no previous mining or prospecting experience, and he has not presented a detailed program of exploration. He proposes 4,600 feet of drilling to test parts of the Dakota and Morrison formation at 23 locations approximately as indicated on Sheet no. 5 submitted with the application. The total cost of the project is estimated by the applicant to be $4,000 with the Government providing 75 percent, or $3,000.

After examining the property, R. R. McLellan and the writer are in agreement that it does not appear likely that an economic uranium deposit would be found in the Dakota or Morrison formation in this area. The Todilto formation may possibly be mineralized under the Group claims; but the shallowest depth to it is estimated to be about 200-250 feet, and AEC drilling in sec. 11 indicates that the Todilto probably does not contain appreciable mineralization in this area. The recommendation of the examining team is that the application be denied.

GEOLOGIC SETTING

The Group claims are on the northeast flank of the Zuni uplift in northwestern New Mexico. Outcropping in the area covered by these claims are the Bluff and Morrison formations of Jurassic age and the Dakota formation of Cretaceous age. The Morrison formation in this area is further subdivided into the Recapture Creek, Westwater Canyon, and Brushy Basin members. The beds strike about N. 60° W. and dip 3-5° NE. The Dakota sandstone forms a thin, resistant cap overlying the cliff-forming shales and sandstones of the Morrison formation. This Dakota-capped cliff is the most prominent topographic feature of this part of the Zuni uplift. The top of the Dakota formation makes a wide, relatively flat bench which slopes gently to the northeast with the dip of the beds. At the foot of the Morrison cliff is another wide, though less well developed, bench which slopes gently southward across outcrop bands of Bluff sandstone and the underlying Summerville formation to the resistant Todilto limestone. About 1 mile south of the Group claims, the Todilto forms a cuesta-like bench though not nearly so prominent as that made by the Dakota sandstone.

In the vicinity of the Group claims, the Todilto formation is about 11 feet thick and is dark gray, fine-grained, thin-bedded limestone. Above this, the Summerville formation is about 155 feet thick and is composed of white, fine- to very fine-grained sandstone and reddish brown siltstone. The Bluff sandstone is about 160-200 feet thick and is composed of light brown to pale red, medium- to fine-grained sandstone. The Recapture shale overlies the Bluff and is about 175 feet thick. It is composed of reddish brown to white shale, siltstone and very fine-grained sandstone. Above this, the Westwater Canyon member of the Morrison formation is about 100-150 feet thick and is composed largely of light brown, medium- to coarse-grained sandstone. The Brushy Basin member is about 100 feet thick and consists of yellowish green to red mudstone and siltstone that is bentonitic in part. The Dakota formation in the vicinity of the Group claims is about 50 feet thick and is grayish yellow, fine-grained sandstone with black carbonaceous shale and lenticular, stream-type sandstone units in the lower 15-20 feet.

ORE DEPOSITS

In the Grants District, uranium deposits have been found in the Todilto limestone, the Morrison formation, and the Dakota sandstone.

Near Haystack Butte about 2.5 miles southeast of the Group claims, several large uranium deposits are now being mined in the Todilto formation. These deposits range in size up to 500-800 feet long and 200-300 feet wide, and the ore now being produced averages about 0.23 percent U_3O_8. Although the Todilto does not outcrop in the area covered by the Group claims, it does underlie the ground and may possibly be mineralized in this area. However, the Atomic Energy Commission has drilled approximately 40 holes to test the Todilto in the northern half of sec. 11, immediately south of the Group claims. These holes were drilled in three fence-like lines trending northwest-southeast. Spacing was 250 feet between holes along any one fence and 1,000 feet between fences. The northwest end of these lines is within about 200 feet of the southwest corner of sec. 2. Only one mineralized hole resulted from this AEC drilling. This hole was near the central part of sec. 11, and the mineralization was estimated to be less than 0.05 percent U_3O_8. Adjacent holes were not mineralized.

As a result of their work in the area, AEC geologists now feel that the Todilto formation in sec. 11 and sec.2 (the Group claims) is not favorable for significant uranium deposits _/. They believe the

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_/ Carlson, W. A., personal communication

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deposits in the vicinity of Haystack Butte to be in a shallow synclinal structure and consider this as favorable ground as opposed to the broad, gentle anticline they think is present in sec. 11 and sec. 2.

Except for a few fragments of weakly radioactive fossil bone, no mineralization is known in the Morrison in the vicinity of the Group claims. The nearest producing mines in the Morrison formation are in the Brushy Basin and Westwater Canyon members in sec. 24, T. 13 N., R. 10 W., and sec. 19, T. 13 N., R. 9 W., about 8.5 miles east southeast of the Group claims. Scintillometer traverses made over a period of time by the applicant, and by the writer during the examination of the property, have disclosed no significant radioactivity in the Morrison formation on the Group claims.

The Dakota sandstone in rim exposures in the area covered by the Group claims has black carbonaceous shale beds up to 4 feet thick in the basal 10 feet or so of the formation. These shales are uniformly radioactive and are estimated to contain about 0.02-.04 percent U_3O_8 although no uranium minerals can be seen. The most promising exposures of this type are along the rim at the extreme eastern margin of the property. Here lenticular, cross-bedded sandstones appear to be possible channel-type structures in the Dakota.

About 2 miles northeast of the Group claims, the Silver Spur and Small Stake mines have produced a total of about 1,300 tons of ore averaging 0.19 percent. These deposits have been described by AEC geologists as occurring associated with trashy carbonaceous material in a sandstone unit in or along the margin of a paleostream channel in the Dakota _/. This type deposit differs from the carbonaceous shales

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_/ Mirsky, Arthur, 1953, Uranium mineralization in the Dakota sandstone, Zuni uplift, New Mexico: U. S. Atomic Energy Commission, RME-47

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described above in that the ore is in sandstone, and visible uranium minerals are common. No mineralization of this type has been recognized so far on the Group claims.

PROPOSED EXPLORATION

The applicant proposes to drill a total of 4,600 feet with a rotary rig to test the Dakota and Morrison formations at 23 locations approximately as indicated on Sheet No. 5 submitted with his original application. He also indicates under 4(c) in his application that he would like to drill for the Todilto limestone from some point near the southern boundary of the Group claims. No large scale base map is available for planning use, and no definite hole locations have been decided on. The application does not provide for collecting samples or for assying them. If any drilling should be done, radiometric logs of all holes would be highly desirable as a supplement to other sample data. The total cost of the project is estimated by the applicant as $4,000 with the Government's share being 75 percent, or $3,000.

CONCLUSIONS AND RECOMMENDATIONS

As a result of our examination of the Group claims, R. R. McLellan and the writer are in agreement that it does not appear likely that an economic uranium deposit would be found by exploration in the Morrison or Dakota formations. Drilling in the NE$\frac{1}{4}$ of the NE$\frac{1}{4}$ of sec. 2, to check the possibility of a northwesterly trending channel in the Dakota sandstone, might conceivably discover mineralization either in black carbonaceous shale or of the Silver Spur type. Any ore deposit of this type, which might be discovered, could be expected to range in grade from 0.1 to 0.2 percent U_3O_8. Assuming this grade, 2,000 to 8,500 tons of ore would have to be produced to repay the Government's share of exploration costs. Exposures along the rim do not encourage the belief that an ore-grade deposit of this caliber would be found.

The Morrison formation in the vicinity of the Group claims does not appear to be favorable for sandstone-type uranium deposits. It is rather uniformly sandy and lacks the lenticularity associated with favorable ground.

The Todilto formation does not outcrop on the Group claims, but it is present at depth and may be mineralized. It is not considered a suitable target for exploration of the type the applicant proposes to do because the shallowest depth to it is estimated to be about 200-250 feet at points along the southern boundary of sec. 2. The Atomic Energy Commission has drilled about 40 holes to the Todilto along the northern boundary of sec. 11 immediately to the south of sec. 2, but no appreciable mineralization was found. The results of this drilling, plus AEC geologists' feeling that the area is structurally unfavorable, indicate that exploration in the southern part of sec. 2 would not encounter significant uranium mineralization.

In view of the considerations presented above, it is recommended that the application be denied. W. A. Carlson, geologist in charge of the Grants District for the Atomic Energy Commission, concurs with the conclusions and recommendations given herein. _/

_/ Carlson, W. A. Personal communication.

Geology and base by Mirsky, Arthur, 1953, Uranium mineralization in the Dakota sandstone, Zuni uplift, New Mexico: U. S. Atomic Energy Commission, RME-47

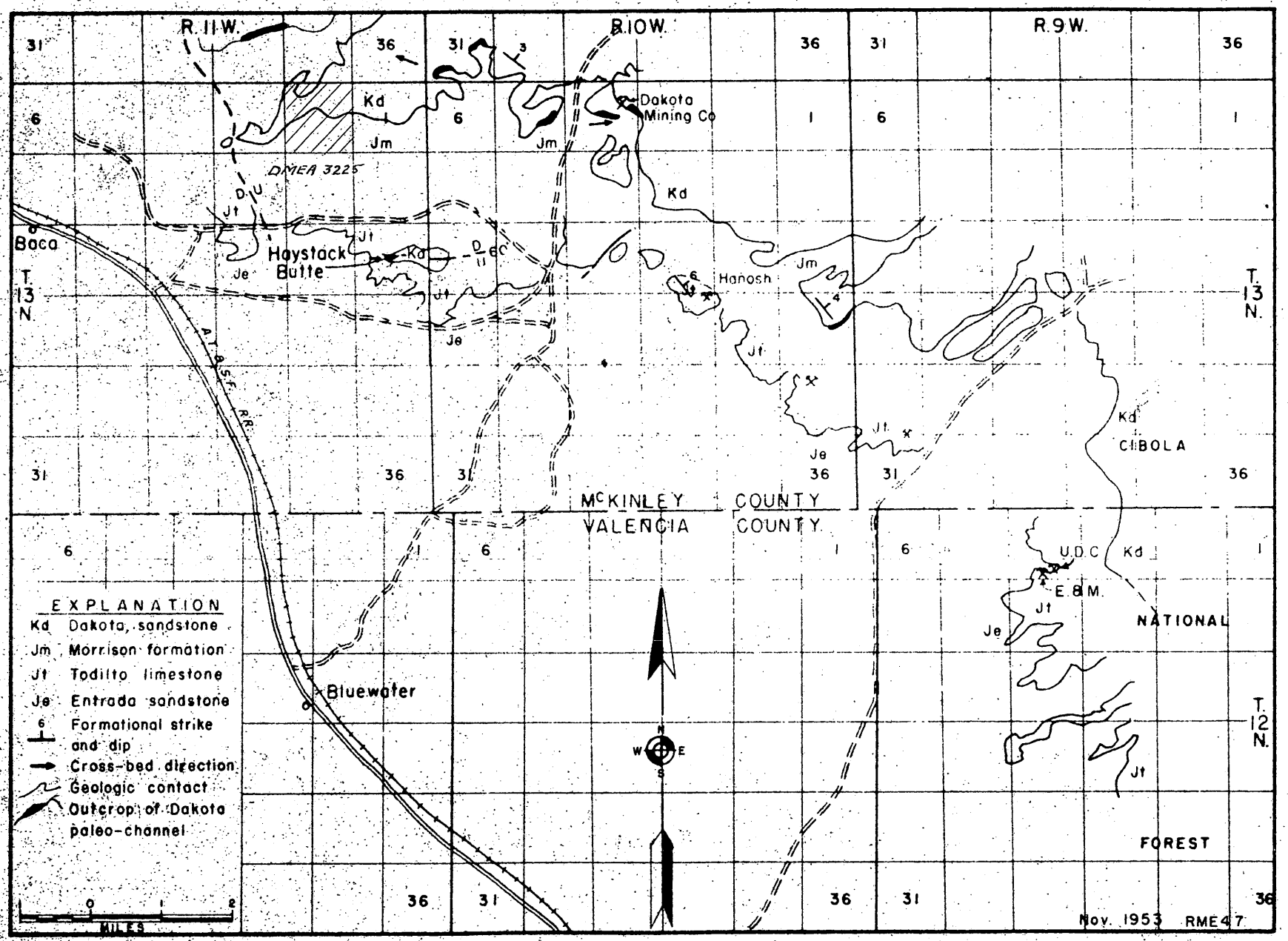

Figure 1-Generalized geologic map, Haystack Butte area, McKinley Co., New Mexico

DMEA 3225

THE GROUP CLAIMS
IRA N. SPRECHER
McKINLEY COUNTY, NEW MEXICO

Engineering Report

By R. R. McLellan
Mining Engineer
Bureau of Mines

DMEA 3225

THE GROUP CLAIMS
IRA N. SPRECHER
McKINLEY COUNTY, NEW MEXICO

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2. Generalized Geologic Map, Haystack Butte Area, McKinley County, New Mexico	*

*See figure 1 with geologic report

DMEA 3225

THE GROUP CLAIMS
IRA N. SPRECHER
McKINLEY COUNTY, NEW MEXICO

ENGINEERING REPORT

By

R. R. McLellan

INTRODUCTION

Ira N. Sprecher of Gallup, N. Mex., trustee for a group of 15 people, has applied to the Defense Minerals Exploration Administration for assistance to explore for uranium on the Group claims, McKinley County, N. Mex. The applicant proposed to rotary drill approximately 23 holes for a total of 4,600 feet of drilling, mainly to prospect a black shale bed at the base of the Dakota sandstone. Approximately six holes are planned to prospect portions of the Morrison formation below the Dakota. The cost of the drilling project is estimated to be $4,000.00, Government participation 75 percent or $3,000.00.

The claims were inspected on February 4, 1954, by Defense Minerals Exploration Administration representatives accompanied by the applicant and W. A. Carlson of the Atomic Energy Commission. After examining nearly a mile of the black shale outcrop and portions of the Morrison formation, it was concluded that the possibility of making a significant discovery is so slight that the expenditure of Government funds for exploration is not justified.

ACKNOWLEDGMENTS

Acknowledgments are due to the applicant who assisted the inspecting team in every way possible, and to W. A. Carlson of the Atomic Energy Commission who contributed considerable information concerning the area.

LOCATION, TOPOGRAPHIC AND PHYSICAL FEATURES

The Group claims, Nos. 1 through 36, comprise the entire sec. 2 of T. 13 N., R. 11 W., New Mexico principal meridian, McKinley County, N. Mex. (fig. 1). The section is 3-1/2 road miles north of Thoreau on U. S. Highway 66. Thoreau is 29 miles west of Grants and 23 miles east of Gallup, N. Mex. The uranium-bearing shales crop out in the cliffs and slopes at the south end of an extensive mesa which courses approximately N. 40° E. across the section (fig. 1 with the geologic report). The area is semiarid and is suitable for year around operations. Water for mining or diamond drilling will have to be hauled from 3 to 5 miles. Supplies and equipment may be obtained at Gallup or Grants. Labor is plentiful in the area, and living accommodations are available at Gallup, Grants, and at several small, nearby settlements along U. S. Highway 66. Milling facilities are available at Monticello, Utah, 221 miles away and at Durango, Colo., 208 miles away. It is doubtful that the Anaconda mill, 10 miles away, will accept any but limestone uranium ores.

HISTORY AND PRODUCTION

The 36 Group claims were located by Sprecher after obtaining a lease from the state of New Mexico on May 1, 1952, covering the

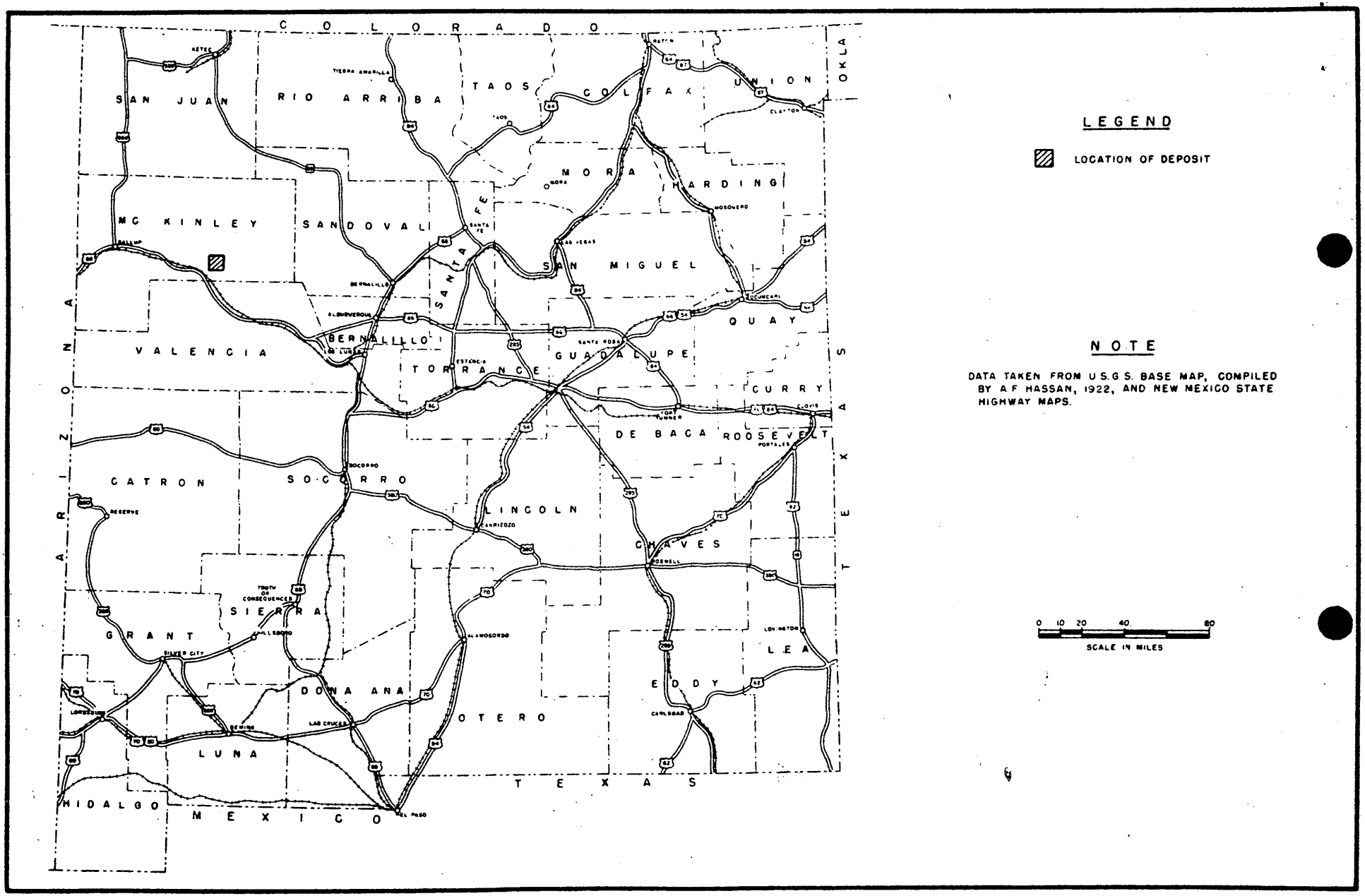

FIGURE 1. - LOCATION MAP, GROUP CLAIMS, IRA N. SPRECHER, McKINLEY COUNTY, NEW MEXICO (DMEA 3225)

entire sec. 2 of T. 13 N., R. 11 W. The applicant has conducted a limited amount of prospecting on the claims with a Geiger counter and has dug several shallow pits along the black shale outcrop. No production has come from the claims. The nearest producing properties are about 3 miles to the south in the Todilto limestone. The limestone is at least 500 feet below the black shale on the Group claims.

OWNERSHIP

Sec. 2, T. 13 N., R. 11 W. is owned by the state of New Mexico and is leased to the applicant who located the 36 Group claims on the section.

DESCRIPTION OF THE DEPOSITS

The applicant primarily is concerned with exploring a flat lying bed of black shale at the base of the Dakota sandstone. The inspecting team walked over and checked the shale exposure with a scintillator and found that the shale averaged about 3 feet in thickness and exhibited a consistent but very slight amount of radioactivity. Scintillator readings indicated grades ranging from a trace to a high of 0.06 percent U_3O_8. The highest readings were obtained near the east section line at the base of the shale in a very limited zone about 1 foot thick and about 10 feet wide. This zone may indicate a former channel or slight thickening of the shale bed. The average indicated grade for approximately 1 mile of shale outcrop was about 0.02 percent U_3O_8. Since the black carbonaceous shales throughout the Colorado Plateau commonly are slightly radioactive, the above described occurrence is not to be considered unusual.

Slight radioactivity also was noted in clays and shales of the Morrison formation below the black shale. However, no material approaching ore grade was noted in either the Dakota or Morrison formations. It is estimated that for profitable underground mining the grade would have to be no less than 0.25 percent U_3O_8. The Hogback No. 4 mine near Gallup produced from the black shale about 1,000 tons of ore averaging 0.18 percent U_3O_8; however, with the depletion of the surface material, the operation was forced to close as the grade would not bear the added expenses of underground mining.

MINEABLE ORE RESERVES

As no ore has been discovered on the Group claims, no mineable reserve can be established.

PRESENT STATUS

Exploration and Development

Exploration and development to date consist only of a few shallow pits dug along the outcrop of the black shale and a limited amount of prospecting with Geiger counters and scintillators.

Mining and Milling Equipment and Other Facilities

There is no mining or milling equipment on the property.

PROJECT PROPOSALS WITH COSTS

The applicant proposes to drill approximately 23 holes or a total of 4,600 feet. No specific drilling program was submitted; however, a majority of the holes were planned to explore the black

shale bed by drilling from the top of the mesa in the northeast quarter of section 2. Several holes were planned to explore the Morrison formation below the black shale on the south slope of the mesa. The holes would be drilled vertically with a rotary drill at a cost of $0.60 per foot for the first 100 feet and $1.10 per foot for the second 100 feet of each hole. The holes are not expected to exceed 200 feet in depth; therefore, the total cost of 4,600 feet of drilling is estimated to be $4,000.00, Government participation 75 percent or $3,000.00. The applicant has not included any items of cost other than that for the contract drilling. A drill probably could be taken to the proposed drill sites on the mesa top with little or no road construction, but several hundred feet of road would be required to reach the proposed drill sites on the side of the mesa.

APPLICANT'S SUMMARY OF COSTS

Contract rotary drilling--
4,600 feet at $0.60 per foot for the first 100 feet and $1.10 per foot for the second 100 feet for each hole.....$4,000.00

Total estimated cost of project.....$4,000.00

Government participation at 75 percent.....$3,000.00

CONCLUSIONS

It was concluded that neither the Dakota shale nor the Morrison formation are sufficiently promising on the Group claims to justify Government participation in an exploration program for uranium. Although the black shale at the base of the Dakota sandstone

apparently is more or less radioactive for the entire length of the exposure across section 2, there is little reason to believe that ore-grade material will be encountered by drilling back from the outcrop along the mesa rim. The one and only target for drilling would be a possible extension of the very limited zone which exhibits slightly higher radioactivity near the east section line. The small amount of drilling required to prospect this area could easily be financed by the applicant without Government assistance. There appears to be even less justification for drilling the Morrison formation on these claims, as the radioactive material, though present, is extremely sporadic in occurrence and appears to be no more than a trace in grade. The Todilto limestone is the most promising formation to prospect in the area, but the cost due to the depth of drilling would be prohibitive on the Group claims.

RECOMMENDATIONS

It is recommended that the application be denied.

W. A. Carlson, geologist in charge of the Grants district office of the Atomic Energy Commission, accompanied the examining team and concurs with the above conclusions and recommendations.

/kp

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

224 New Customhouse
Denver 2, Colorado

March 10, 1954.

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 200

From: Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3225 (Uranium), Ira N. Sprecher, Group claims, McKinley County, New Mexico.

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

W H King
W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures

3-15
denial letr to JH Berry
for copying.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

March 10, 1954.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination - DMEA Docket 3225 (Uranium), Ira N. Sprecher, Group Claims, McKinley County, New Mexico.

Enclosed are eleven copies of the engineering report of examination on the subject docket.

The applicant requested $4,000.00 for a total of 4,600 feet of rotary drilling.

The engineer examiner concludes there is little chance that exploration would encounter significant uranium mineralization. The A.E.C. has drilled 40 holes immediately south of this property and no appreciable mineralization was found.

The engineer examiner recommends the application be denied and we concur in this recommendation.

W. H. King

W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
March 4, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

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

Subject: DMEA 3225 (Uranium) The Group claims, Ira N. Sprecher, Trustee, McKinley County, New Mexico

Enclosed are the original and ten copies of the "Summary, Conclusions, and Recommendations" by R. R. McLellan, Bureau of Mines, and H. S. Johnson, Geological Survey, and of McLellan's engineering report on the above docket.

McLellan concludes that although the Dakota sandstone, a favorable horizon for mineralization, shows slight radioactivity, there is little reason to expect that deposits of importance will be discovered by drilling exploration back from rim exposures on the applicant's property. The only possibility would be drilling one limited zone showing slightly higher radioactivity which could easily be explored by the applicant without Government assistance. The Morrison formation in the area does not show enough uranium mineralization, and the Todilto limestone, the most favorable formation, is at too great a depth to justify testing of either. Denial of the application is recommended.

I concur with the conclusions and recommendations, and a representative of the Atomic Energy Commission who accompanied the examining team also concurs.

The brochure forwarded to this office by the Chief, Mining Methods Branch, Mining Division, Region IV, on January 18, 1954, is also enclosed.

W. M. Traver

W. M. Traver

enclosures

WMT/kp

cc 10
DMEA 3225
Chron

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

February 26, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3225, Ira N. Sprecher, Group Claims, McKinley County, New Mexico

Enclosed are 11 copies of a geologic report by H. S. Johnson, Jr., of the U. S. Geological Survey covering the above docket.

It has been recommended that the application be denied.

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

Enclosures (11)

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

February 24, 1954

Memorandum

To: A. H. Koschmann, DMEA Field Team, Region IV

From: R. P. Fischer, Supervisor Colorado Plateau District

Subject: DMEA 3225, Ira N. Sprecher, Group claims, McKinley County, New Mexico

Transmitted herewith are eleven copies of a geologic report on the Ira N. Sprecher Group claims, McKinley County, New Mexico. Assistance was requested in exploring for uranium deposits. The proposed work consists of drilling and is estimated to cost $4,000.

The attached report was prepared by H. S. Johnson, Jr., and is based on a joint field examination on February 4, 1954, in company with R. R. McLellan, USBM; W. A. Carlson, AEC; and the applicant.

On the basis of the distribution and habits of the known deposits in the area, the outcrop examination, and tests for radioactivity, it is concluded that the exploration applied for has little chance of yielding significant reserves of uranium ore. It is therefore recommended that the application be denied. Mr. Carlson of AEC is in agreement with these conclusions and the recommendation, and I also concur.

R. P. Fischer

R. P. Fischer

Enclosures 11
RPF/mlr

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3225, The Group Claims

Ira N. Sprecher

McKinley County, New Mexico

Uranium

R. R. McLellan, Mining Engineer
Bureau of Mines

H. S. Johnson, Geologist
Geological Survey

February 19, 1954

DMEA 3225

THE GROUP CLAIMS
IRA N. SPRECHER
McKINLEY COUNTY, NEW MEXICO

Summary, Conclusions, and Recommendations

By R. R. McLellan
Mining Engineer
Bureau of Mines

and

H. S. Johnson
Geologist
Geological Survey

DMEA 3225

THE GROUP CLAIMS
IRA N. SPRECHER
McKINLEY COUNTY, NEW MEXICO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By R. R. McLellan and H. S. Johnson

Ira N. Sprecher of Gallup, N. Mex., applied to the Defense Minerals Exploration Administration for assistance to explore for uranium on the Group claims, sec. 2, T. 13 N., R. 11 W., New Mexico principal meridian, McKinley County, N. Mex. The applicant proposes to explore portions of the Dakota and Morrison formations by rotary drilling approximately 23 holes, or a total of 4,600 feet of drilling at a cost of $4,000.00, Government participation 75 percent or $3,000.00. The applicant failed to submit a specific plan of exploration and included only the cost of the contract drilling. The added expenses of road construction, supervision, sampling, radiometric logging, and miscellaneous costs were not considered in the application.

The property was inspected on February 4, 1954, by Defense Minerals Exploration Administration representatives accompanied by the applicant and by W. A. Carlson of the Atomic Energy Commission. It was concluded that the claims do not show sufficient evidence of containing ore to justify the expenditure of Government funds for exploration.

The claims are on the northeast flank of the Zuni uplift in northwestern New Mexico. Outcropping in the area covered by these claims are the Bluff and Morrison formations of Jurassic age and the Dakota formation of Cretaceous age. The beds strike about N. 60° W. and dip about 3-5° to the northeast. Black carbonaceous shales in the basal part of the Dakota formation are weakly radioactive, but are not considered likely to contain an economic uranium deposit. The Morrison formation in the vicinity of the Group claims does not appear to be favorable for sandstone-type uranium deposits. It is rather uniformly sandy and lacks the lenticularity associated with favorable ground. The Todilto formation does not outcrop on the Group claims, but it is present at depth and may be mineralized. However, it is not considered a suitable target for exploration of the type the applicant proposes because the shallowest depth to it is estimated to be about 200-250 feet at points along the southern boundary of section 2. Also, the Atomic Energy Commission has drilled several holes to the Todilto at points near the northern boundary of section 11 immediately south of section 2, but has not found significant mineralization.

Although the carbonaceous shale at the base of the Dakota sandstone is slightly radioactive as well as portions of the Morrison formation below the shale, there is little reason to believe that ore-grade material will be encountered by drilling back from these exposures. The limited amount of drilling that might be justified to explore a possible channel in the carbonaceous shale could easily be financed by the applicant without Government assistance. It is therefore recommended that the application be denied.

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORTS OF EXAMINATION BY FIELD TEAM REGION IV

DMEA DOCKET 3225, Ira N. Sprecher, Group claims

McKinley County, New Mexico

Uranium

Geologic Report

H. S. Johnson, Jr., Geologist

U. S. Geological Survey

February 24, 1954

INTRODUCTION AND SUMMARY

In December 1953, Ira N. Sprecher of 306 South Second Street, Gallup, N. Mex., applied (DMEA 3225) for Government assistance to explore for uranium on the Group claims covering all of sec. 2, T. 13 N., R. 11 W., McKinley County, N. Mex. Access to the Group claims is provided by about 5.5 miles of dirt road leading northeast from Prewitt on U. S. Highway 66. The last mile of road is better classified as a jeep trail at the present time. Mineral rights to all of sec. 2 are held by Mr. Sprecher under the terms of a mining lease obtained from the State of New Mexico in May 1952.

The Group claims were examined on February 4, 1954, by R. R. McLellan of the Bureau of Mines and H. S. Johnson, Jr., of the Geological Survey, accompanied by W. A. Carlson, geologist in charge of the Grants district office of the Atomic Energy Commission. The applicant, Ira N. Sprecher, and Henry S. Glasscock, an interested party, were also present during the examination.

To date there have been no mining or systematic prospecting operations on the property. The applicant has prospected the surface with Geiger and scintillation counters and has dug several shallow prospect holes, but no appreciable mineralization has been found. The applicant has had no previous mining or prospecting experience, and he has not presented a detailed program of exploration. He proposes 4,600 feet of drilling to test parts of the Dakota and Morrison formation at 23 locations approximately as indicated on Sheet no. 5 submitted with the application. The total cost of the project is estimated by the applicant to be $4,000 with the Government providing 75 percent, or $3,000.

After examining the property, R. R. McLellan and the writer are in agreement that it does not appear likely that an economic uranium deposit would be found in the Dakota or Morrison formation in this area. The Todilto formation may possibly be mineralized under the Group claims; but the shallowest depth to it is estimated to be about 200-250 feet, and AEC drilling in sec. 11 indicates that the Todilto probably does not contain appreciable mineralization in this area. The recommendation of the examining team is that the application be denied.

GEOLOGIC SETTING

The Group claims are on the northeast flank of the Zuni uplift in northwestern New Mexico. Outcropping in the area covered by these claims are the Bluff and Morrison formations of Jurassic age and the Dakota formation of Cretaceous age. The Morrison formation in this area is further subdivided into the Recapture Creek, Westwater Canyon, and Brushy Basin members. The beds strike about N. 60° W. and dip 3-5° NE. The Dakota sandstone forms a thin, resistant cap overlying the cliff-forming shales and sandstones of the Morrison formation. This Dakota-capped cliff is the most prominent topographic feature of this part of the Zuni uplift. The top of the Dakota formation makes a wide, relatively flat bench which slopes gently to the northeast with the dip of the beds. At the foot of the Morrison cliff is another wide, though less well developed, bench which slopes gently southward across outcrop bands of Bluff sandstone and the underlying Summerville formation to the resistant Todilto limestone. About 1 mile south of the Group claims, the Todilto forms a cuesta-like bench though not nearly so prominent as that made by the Dakota sandstone.

In the vicinity of the Group claims, the Todilto formation is about 11 feet thick and is dark gray, fine-grained, thin-bedded limestone. Above this, the Summerville formation is about 155 feet thick and is composed of white, fine- to very fine-grained sandstone and reddish brown siltstone. The Bluff sandstone is about 160-200 feet thick and is composed of light brown to pale red, medium- to fine-grained sandstone. The Recapture shale overlies the Bluff and is about 175 feet thick. It is composed of reddish brown to white shale, siltstone and very fine-grained sandstone. Above this, the Westwater Canyon member of the Morrison formation is about 100-150 feet thick and is composed largely of light brown, medium- to coarse-grained sandstone. The Brushy Basin member is about 100 feet thick and consists of yellowish green to red mudstone and siltstone that is bentonitic in part. The Dakota formation in the vicinity of the Group claims is about 50 feet thick and is grayish yellow, fine-grained sandstone with black carbonaceous shale and lenticular, stream-type sandstone units in the lower 15-20 feet.

ORE DEPOSITS

In the Grants District, uranium deposits have been found in the Todilto limestone, the Morrison formation, and the Dakota sandstone.

Near Haystack Butte about 2.5 miles southeast of the Group claims, several large uranium deposits are now being mined in the Todilto formation. These deposits range in size up to 500-800 feet long and 200-300 feet wide, and the ore now being produced averages about 0.23 percent U_3O_8. Although the Todilto does not outcrop in the area covered by the Group claims, it does underlie the ground and may possibly be mineralized in this area. However, the Atomic Energy Commission has drilled approximately 40 holes to test the Todilto in the northern half of sec. 11, immediately south of the Group claims. These holes were drilled in three fence-like lines trending northwest-southeast. Spacing was 250 feet between holes along any one fence and 1,000 feet between fences. The northwest end of these lines is within about 200 feet of the southwest corner of sec. 2. Only one mineralized hole resulted from this AEC drilling. This hole was near the central part of sec. 11, and the mineralization was estimated to be less than 0.05 percent U_3O_8. Adjacent holes were not mineralized.

As a result of their work in the area, AEC geologists now feel that the Todilto formation in sec. 11 and sec.2 (the Group claims) is not favorable for significant uranium deposits _/. They believe the

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_/ Carlson, W. A., personal communication

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deposits in the vicinity of Haystack Butte to be in a shallow synclinal structure and consider this as favorable ground as opposed to the broad, gentle anticline they think is present in sec. 11 and sec. 2.

Except for a few fragments of weakly radioactive fossil bone, no mineralization is known in the Morrison in the vicinity of the Group claims. The nearest producing mines in the Morrison formation are in the Brushy Basin and Westwater Canyon members in sec. 24, T. 13 N., R. 10 W., and sec. 19, T. 13 N., R. 9 W., about 8.5 miles east southeast of the Group claims. Scintillometer traverses made over a period of time by the applicant, and by the writer during the examination of the property, have disclosed no significant radioactivity in the Morrison formation on the Group claims.

The Dakota sandstone in rim exposures in the area covered by the Group claims has black carbonaceous shale beds up to 4 feet thick in the basal 10 feet or so of the formation. These shales are uniformly radioactive and are estimated to contain about 0.02-.04 percent U_3O_8 although no uranium minerals can be seen. The most promising exposures of this type are along the rim at the extreme eastern margin of the property. Here lenticular, cross-bedded sandstones appear to be possible channel-type structures in the Dakota.

About 2 miles northeast of the Group claims, the Silver Spur and Small Stake mines have produced a total of about 1,300 tons of ore averaging 0.19 percent. These deposits have been described by AEC geologists as occurring associated with trashy carbonaceous material in a sandstone unit in or along the margin of a paleostream channel in the Dakota _/. This type deposit differs from the carbonaceous shales

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_/ Mirsky, Arthur, 1953, Uranium mineralization in the Dakota sandstone, Zuni uplift, New Mexico: U. S. Atomic Energy Commission, RME-47

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described above in that the ore is in sandstone, and visible uranium minerals are common. No mineralization of this type has been recognized so far on the Group claims.

PROPOSED EXPLORATION

The applicant proposes to drill a total of 4,600 feet with a rotary rig to test the Dakota and Morrison formations at 23 locations approximately as indicated on Sheet No. 5 submitted with his original application. He also indicates under 4(c) in his application that he would like to drill for the Todilto limestone from some point near the southern boundary of the Group claims. No large scale base map is available for planning use, and no definite hole locations have been decided on. The application does not provide for collecting samples or for assying them. If any drilling should be done, radiometric logs of all holes would be highly desirable as a supplement to other sample data. The total cost of the project is estimated by the applicant as $4,000 with the Government's share being 75 percent, or $3,000.

CONCLUSIONS AND RECOMMENDATIONS

As a result of our examination of the Group claims, R. R. McLellan and the writer are in agreement that it does not appear likely that an economic uranium deposit would be found by exploration in the Morrison or Dakota formations. Drilling in the NE$\frac{1}{4}$ of the NE$\frac{1}{4}$ of sec. 2, to check the possibility of a northwesterly trending channel in the Dakota sandstone, might conceivably discover mineralization either in black carbonaceous shale or of the Silver Spur type. Any ore deposit of this type, which might be discovered, could be expected to range in grade from 0.1 to 0.2 percent U_3O_8. Assuming this grade, 2,000 to 8,500 tons of ore would have to be produced to repay the Government's share of exploration costs. Exposures along the rim do not encourage the belief that an ore-grade deposit of this caliber would be found.

The Morrison formation in the vicinity of the Group claims does not appear to be favorable for sandstone-type uranium deposits. It is rather uniformly sandy and lacks the lenticularity associated with favorable ground.

The Todilto formation does not outcrop on the Group claims, but it is present at depth and may be mineralized. It is not considered a suitable target for exploration of the type the applicant proposes to do because the shallowest depth to it is estimated to be about 200-250 feet at points along the southern boundary of sec. 2. The Atomic Energy Commission has drilled about 40 holes to the Todilto along the northern boundary of sec. 11 immediately to the south of sec. 2, but no appreciable mineralization was found. The results of this drilling, plus AEC geologists' feeling that the area is structurally unfavorable, indicate that exploration in the southern part of sec. 2 would not encounter significant uranium mineralization.

In view of the considerations presented above, it is recommended that the application be denied. W. A. Carlson, geologist in charge of the Grants District for the Atomic Energy Commission, concurs with the conclusions and recommendations given herein. _/

_/ Carlson, W. A. Personal communication.

Geology and base by Mirsky, Arthur, 1953, Uranium mineralization in the Dakota sandstone, Zuni uplift, New Mexico: U. S. Atomic Energy Commission, RME-47

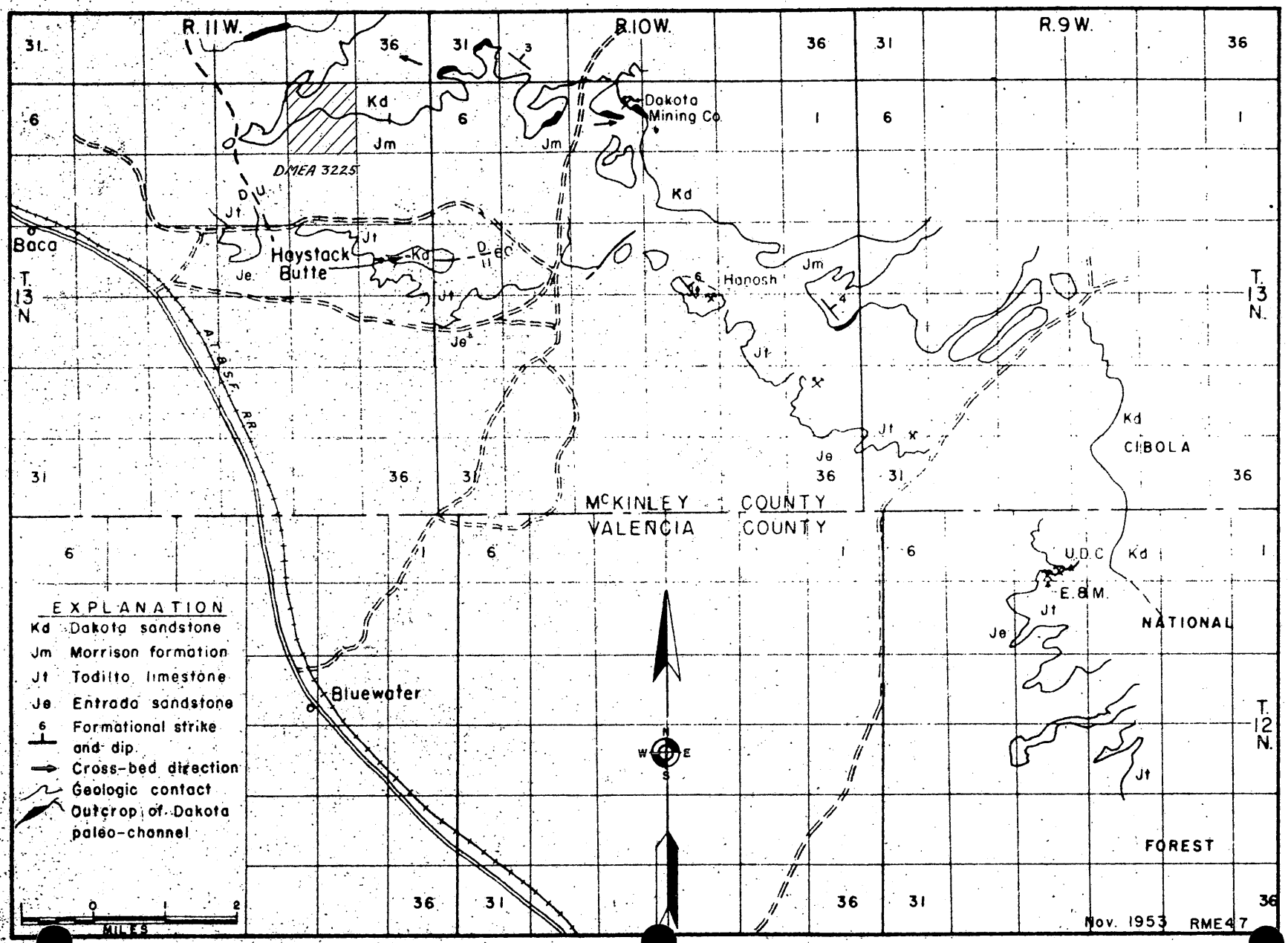

Figure 1-Generalized geologic map, Haystack Butte area, McKinley Co., New Mexico

DMEA 3225

THE GROUP CLAIMS
IRA N. SPRECHER
McKINLEY COUNTY, NEW MEXICO

Engineering Report

By R. R. McLellan
Mining Engineer
Bureau of Mines

DMEA 3225

THE GROUP CLAIMS
IRA N. SPRECHER
McKINLEY COUNTY, NEW MEXICO

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*See figure 1 with geologic report

DMEA 3225

THE GROUP CLAIMS
IRA N. SPRECHER
McKINLEY COUNTY, NEW MEXICO

ENGINEERING REPORT

By

R. R. McLellan

INTRODUCTION

Ira N. Sprecher of Gallup, N. Mex., trustee for a group of 15 people, has applied to the Defense Minerals Exploration Administration for assistance to explore for uranium on the Group claims, McKinley County, N. Mex. The applicant proposed to rotary drill approximately 23 holes for a total of 4,600 feet of drilling, mainly to prospect a black shale bed at the base of the Dakota sandstone. Approximately six holes are planned to prospect portions of the Morrison formation below the Dakota. The cost of the drilling project is estimated to be $4,000.00, Government participation 75 percent or $3,000.00.

The claims were inspected on February 4, 1954, by Defense Minerals Exploration Administration representatives accompanied by the applicant and W. A. Carlson of the Atomic Energy Commission. After examining nearly a mile of the black shale outcrop and portions of the Morrison formation, it was concluded that the possibility of making a significant discovery is so slight that the expenditure of Government funds for exploration is not justified.

ACKNOWLEDGMENTS

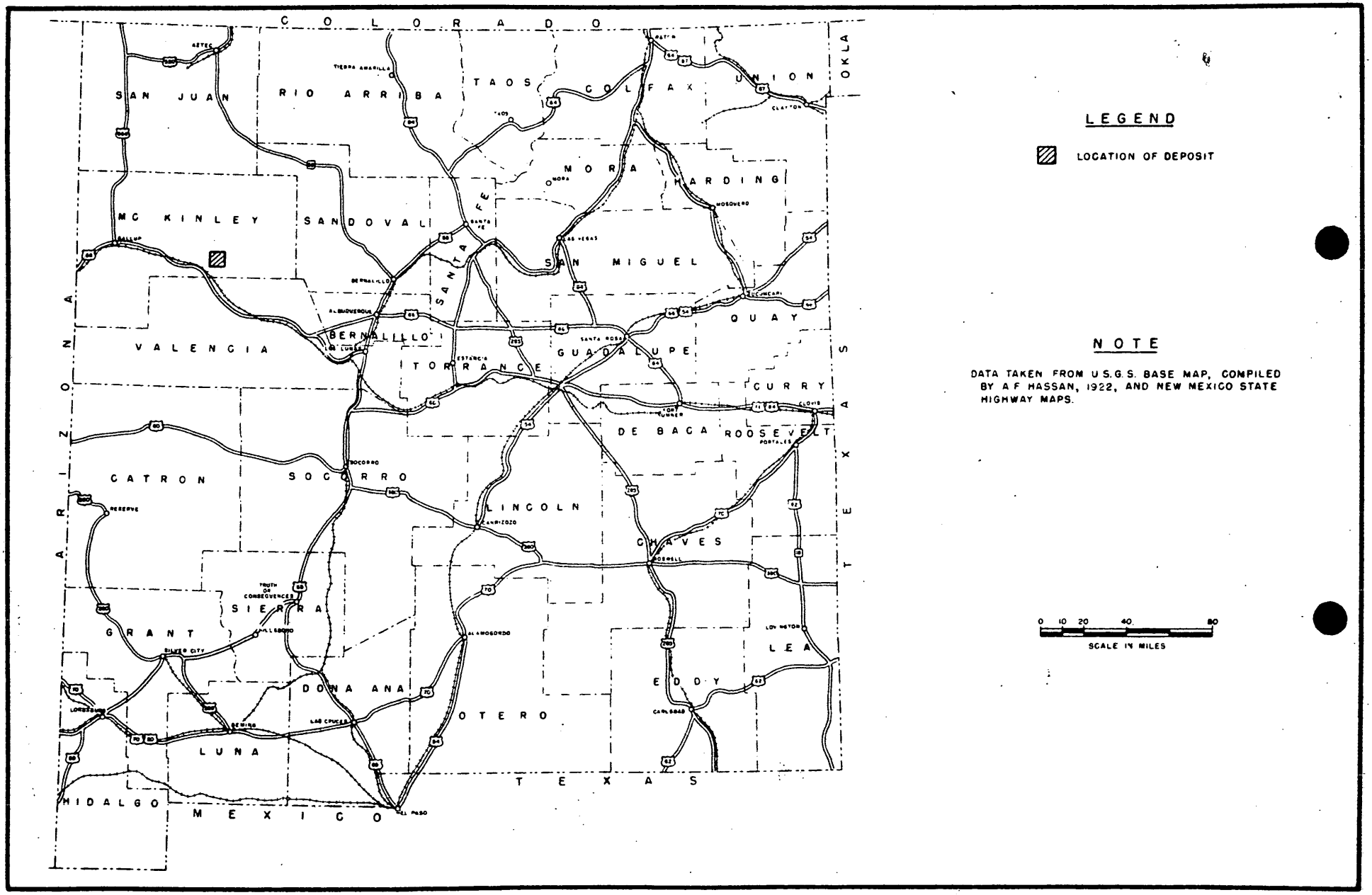
Acknowledgments are due to the applicant who assisted the inspecting team in every way possible, and to W. A. Carlson of the Atomic Energy Commission who contributed considerable information concerning the area.

LOCATION, TOPOGRAPHIC AND PHYSICAL FEATURES

The Group claims, Nos. 1 through 36, comprise the entire sec. 2 of T. 13 N., R. 11 W., New Mexico principal meridian, McKinley County, N. Mex. (fig. 1). The section is 3-1/2 road miles north of Thoreau on U. S. Highway 66. Thoreau is 29 miles west of Grants and 23 miles east of Gallup, N. Mex. The uranium-bearing shales crop out in the cliffs and slopes at the south end of an extensive mesa which courses approximately N. 40° E. across the section (fig. 1 with the geologic report). The area is semiarid and is suitable for year around operations. Water for mining or diamond drilling will have to be hauled from 3 to 5 miles. Supplies and equipment may be obtained at Gallup or Grants. Labor is plentiful in the area, and living accommodations are available at Gallup, Grants, and at several small, nearby settlements along U. S. Highway 66. Milling facilities are available at Monticello, Utah, 221 miles away and at Durango, Colo., 208 miles away. It is doubtful that the Anaconda mill, 10 miles away, will accept any but limestone uranium ores.

HISTORY AND PRODUCTION

The 36 Group claims were located by Sprecher after obtaining a lease from the state of New Mexico on May 1, 1952, covering the



LEGEND

LOCATION OF DEPOSIT

NOTE

DATA TAKEN FROM U.S.G.S. BASE MAP, COMPILED BY A.F. HASSAN, 1922, AND NEW MEXICO STATE HIGHWAY MAPS.

0 10 20 40 80

SCALE IN MILES

FIGURE 1. - LOCATION MAP, GROUP CLAIMS, IRA N. SPRECHER, McKINLEY COUNTY, NEW MEXICO (DMEA 3225)

entire sec. 2 of T. 13 N., R. 11 W. The applicant has conducted a limited amount of prospecting on the claims with a Geiger counter and has dug several shallow pits along the black shale outcrop. No production has come from the claims. The nearest producing properties are about 3 miles to the south in the Todilto limestone. The limestone is at least 500 feet below the black shale on the Group claims.

OWNERSHIP

Sec. 2, T. 13 N., R. 11 W. is owned by the state of New Mexico and is leased to the applicant who located the 36 Group claims on the section.

DESCRIPTION OF THE DEPOSITS

The applicant primarily is concerned with exploring a flat lying bed of black shale at the base of the Dakota sandstone. The inspecting team walked over and checked the shale exposure with a scintillator and found that the shale averaged about 3 feet in thickness and exhibited a consistent but very slight amount of radioactivity. Scintillator readings indicated grades ranging from a trace to a high of 0.06 percent U_3O_8. The highest readings were obtained near the east section line at the base of the shale in a very limited zone about 1 foot thick and about 10 feet wide. This zone may indicate a former channel or slight thickening of the shale bed. The average indicated grade for approximately 1 mile of shale outcrop was about 0.02 percent U_3O_8. Since the black carbonaceous shales throughout the Colorado Plateau commonly are slightly radioactive, the above described occurrence is not to be considered unusual.

Slight radioactivity also was noted in clays and shales of the Morrison formation below the black shale. However, no material approaching ore grade was noted in either the Dakota or Morrison formations. It is estimated that for profitable underground mining the grade would have to be no less than 0.25 percent U_3O_8. The Hogback No. 4 mine near Gallup produced from the black shale about 1,000 tons of ore averaging 0.18 percent U_3O_8; however, with the depletion of the surface material, the operation was forced to close as the grade would not bear the added expenses of underground mining.

MINEABLE ORE RESERVES

As no ore has been discovered on the Group claims, no mineable reserve can be established.

PRESENT STATUS

Exploration and Development

Exploration and development to date consist only of a few shallow pits dug along the outcrop of the black shale and a limited amount of prospecting with Geiger counters and scintillators.

Mining and Milling Equipment and Other Facilities

There is no mining or milling equipment on the property.

PROJECT PROPOSALS WITH COSTS

The applicant proposes to drill approximately 23 holes or a total of 4,600 feet. No specific drilling program was submitted; however, a majority of the holes were planned to explore the black

shale bed by drilling from the top of the mesa in the northeast quarter of section 2. Several holes were planned to explore the Morrison formation below the black shale on the south slope of the mesa. The holes would be drilled vertically with a rotary drill at a cost of $0.60 per foot for the first 100 feet and $1.10 per foot for the second 100 feet of each hole. The holes are not expected to exceed 200 feet in depth; therefore, the total cost of 4,600 feet of drilling is estimated to be $4,000.00, Government participation 75 percent or $3,000.00. The applicant has not included any items of cost other than that for the contract drilling. A drill probably could be taken to the proposed drill sites on the mesa top with little or no road construction, but several hundred feet of road would be required to reach the proposed drill sites on the side of the mesa.

APPLICANT'S SUMMARY OF COSTS

Contract rotary drilling-- 4,600 feet at $0.60 per foot for the first 100 feet and $1.10 per foot for the second 100 feet for each hole	$4,000.00
Total estimated cost of project	$4,000.00
Government participation at 75 percent	$3,000.00

CONCLUSIONS

It was concluded that neither the Dakota shale nor the Morrison formation are sufficiently promising on the Group claims to justify Government participation in an exploration program for uranium. Although the black shale at the base of the Dakota sandstone

apparently is more or less radioactive for the entire length of the exposure across section 2, there is little reason to believe that ore-grade material will be encountered by drilling back from the outcrop along the mesa rim. The one and only target for drilling would be a possible extension of the very limited zone which exhibits slightly higher radioactivity near the east section line. The small amount of drilling required to prospect this area could easily be financed by the applicant without Government assistance. There appears to be even less justification for drilling the Morrison formation on these claims, as the radioactive material, though present, is extremely sporadic in occurrence and appears to be no more than a trace in grade. The Todilto limestone is the most promising formation to prospect in the area, but the cost due to the depth of drilling would be prohibitive on the Group claims.

RECOMMENDATIONS

It is recommended that the application be denied.

W. A. Carlson, geologist in charge of the Grants district office of the Atomic Energy Commission, accompanied the examining team and concurs with the above conclusions and recommendations.

/kp

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

Ira N. Sprecher
306 South 2nd Street
Gallup, New Mexico

December 23, 1953
Subject: DMEA-3225
Re: Exploration Assistance
The Group Claims

Dear Mrs. Sprecher:

The receipt of your application dated December 11, 1953, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3225 and referred to the Executive Officer, Region IV, 224 New Customhouse Building, Denver 2, Colorado.

Kindly refer to DMEA-3225 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

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

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

December 23, 1953

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number DMEA-3225

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

DMEA - 3225 Ira N. Sprecher

ROBERT E. ADAMS

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

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

2-13-11

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. DMEA-3225
Metal or Mineral
Date Received 12-23-53
Estimated Cost
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: Ira N. Sprecher
306 South 2nd Street, Gallup, New Mexico
Acting as Trustee, under Declaration of Trust, for a group, whose names and addresses appear on Attached Sheet No. 1.

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract All of
Section 2 in
Township 13 North, Range 11 West, N.M.P.M.
McKinley County, New Mexico

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

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

(*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. See Attached Sheet No. 2

(*e*) If you own the land, describe any liens or encumbrances on it Not applicable.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Not applicable.

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. See Attached Sheet No.3.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. Not Applicable.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. See Attached Sheet No. 4.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See Attached Sheet No. 6.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.
See Attached Sheet No. 7.

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

(*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. See Attached Sheet No. 8.

(*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. See Attached Sheet No.9.

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.). See Attached Sheet No. 10.

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated December 11, 1953, 195

(Applicant)

By

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

Attached Sheet No. 1
to
D.M.E.A.Form
M.F. - 103

1 (d) NAME OF APPLICANT - Additional Information

The names and addresses of the members of the group, for whom applicant is acting as Trustee, are these:

Herbert C. Denny, and
Elizabeth Denny,
his wife, Gallup, New Mexico,
Glenn L. Emmons, and
Dorothy H. Emmons,
his wife, Gallup, New Mexico,
Frank A. Mapel, and
Elsie M. Mapel,
his wife, Albuquerque, New Mexico,
Clair E. Gurley, and
Irene G. Gurley,
his wife, Gallup, New Mexico
John E. Perry, and
Irene D. Perry,
his wife, Gallup, New Mexico
Ruth Finley, Albuquerque, New Mexico
Henry S. Glascock, and
Virginia Glascock,
his wife, Albuquerque, New Mexico,
Ira N. Sprecher, and
Fannie Agnew Sprecher,
his wife, Gallup, New Mexico.

2-13N-11W - N.M.P.M.
Ira N. Sprecher, Applicant
306 South 2nd Street
Gallup, New Mexico

APPLICATION NO. M-3723 LEASE NO. M-3723

Attached Sheet No. 2 to
D.M.E.A. Form
M.F. - 103

MINING LEASE

THIS INDENTURE, Made and entered into this 1st day of May 1952, by and between the State of New Mexico, acting by and through GUY SHEPARD its Commissioner of Public Lands, in that behalf duly authorized party of the first part and hereinafter called the Lessor, and Ira N. Sprecher whose post office address is Gallup, New Mexico party of the second part and hereinafter called the Lessee.

WITNESSETH:

WHEREAS, the lessee has duly filed an application for a mining lease for the purpose named hereinbelow covering the lands hereinafter described, and in said application has offered to pay an annual rental thereon of Nine hundred----------($900.00) DOLLARS per year, payable annually in advance, and with the said application has tendered the sum of Nine----------($900.00) Dollars as the first annual rental and the further sum of Five ($5.00) Dollars application fee, and the lessor having accepted the said application as tendered.

WHEREFORE, and in consideration of the premises and of the covenants and agreements hereinafter contained on the part of the lessee to be kept, paid and performed, the lessor has granted and demised, leased and let, and by these presents does grant, demise, lease and let unto the lessee, exclusively, for the sole and only purpose of exploration, development, production and removal of uranium hereinafter designated as the item, thereon and therefrom, with the right to own all the item so produced and saved therefrom and not reserved as royalty by the lessor under the terms of this lease, together with rights of way, easements and servitudes for pipe lines, telephone and telegraph lines, for tanks, powerhouses, and fixtures for producing, treating and caring for the item and housing and boarding employees, and any and all rights and privileges necessary, incident to or convenient for the economical operation of said land, alone or conjointly with neighboring lands, for the item, with the right for such purposes to the development or other lawful acquisition of water from said lands, but not the right to the water rights or water owned as an improvement by anyone else, and with the right of removing, either during or after the term hereof, all and any improvements placed or erected on the premises by the lessee, subject, however, to the conditions hereinafter set out, the following described land situated in the State of New Mexico, and more particularly described as follows:

Commencing at the NE corner of Section 2, T-13N, R-11W which is also the NE corner of Group No. 1 Claim and true place of beginning. Thence S along the E boundary line of said Section 2 a distance of 5280 feet, more or less, to the SE corner of said Section 2 which is also the SE corner of Group No. 9 Claim, thence W along the S boundary line of said Section 2 a distance of 5280 feet, more or less, to the SW corner of group No. 36 Claim, thence N along the W boundary line of said Section 2 a distance of 5280 feet, more or less, to the NW corner of said Section 2 which is also the NW corner of Group No. 28 Claim, thence E along the N boundary line of said Section 2 a distance of 5280 feet, more or less, to the NE corner of said Section 2 which is also the NE corner of Group No. 1 Claim and true place of beginning.

Containing 645.12 acres and comprising
36 partial mining claims designated as follows;

Group No. 1	Group No. 19
Group No. 2	Group No. 20
Group No. 3	Group No. 21
Group No. 4	Group No. 22
Group No. 5	Group No. 23
Group No. 6	Group No. 24
Group No. 7	Group No. 25
Group No. 8	Group No. 26
Group No. 9	Group No. 27
Group No. 10	Group No. 28
Group No. 11	Group No. 29
Group No. 12	Group No. 30
Group No. 13	Group No. 31
Group No. 14	Group No. 32
Group No. 15	Group No. 33
Group No. 16	Group No. 34
Group No. 17	Group No. 35
Group No. 18	Group No. 36

Sec.2-13N-11W.,
N.M.P.M.
Ira N. Sprecher,
Applicant
306 S. 2nd St.
Gallup, New Mexico

TO HAVE AND TO HOLD said land, and all rights and privileges granted hereunder to and unto the lessee for a term of five years from date hereof, subject to a preferential right of renewal as hereinafter provided.

In consideration of the premises, the parties covenant and agree as follows:

1. The lessee agrees to pay to the lessor as rental for the leased premises the sum of Nine hundred------($900.00) Dollars per annum so long as this lease shall remain in force, payable annually in advance on the successive anniversary dates of this lease and in addition to such rental the lessee agrees to pay to the lessor a sum equal to five per cent (5%) of the net value of the proceeds derived from the sale of the item produced on the land after treatment and transportation charges are deducted.

2. The lessee agrees to make full settlement on the 20th day of each month for all royalties due the lessor for the preceding month, under the terms of this lease, and to permit the lessor or its agents, at all reasonable hours, to examine lessee's books, relating to the production and sale of the item. Lessee further agrees to submit to lessor annual verified reports, showing in detail lessee's operaton for the preceding year.

3. All mining operations hereunder shall be carried on in a workmanlike manner in conformity with the laws of the State of New Mexico and with any rules and regulations of any department of said state issued under authority of State Law.

4. It is expressly agreed that the consideration hereinbefore specified is a good, valuable and substantial consideration and sufficient in all respects to support each and every covenant herein, including specifically the option granted the lessee to extend this lease from time to time during its five-year term, upon the payment or tender of further rental hereinafter provided for.

In event the lessee shall elect to surrender any or all of the said acreage, he shall deliver to the Commissioner a duly executed release thereof; and in event said lease has been recorded, then he shall furnish and deliver to said Commissioner a certified copy of a duly recorded release.

5. The lessee may at any time by paying to the State of New Mexico, acting by its Commissioner of Public Lands, or other authorized officer, all amounts then due as provided by the terms herein and the further sum of Ten ($10.00) Dollars, surrender and cancel this lease insofar as the same covers all or any portion of lands herein leased and be relieved from all further obligations or liability hereunder, in the manner as hereinbefore provided.

6. All payments due hereunder shall be made by cash, cashier's check or post office money order on or before the day such payment is due, to the lessor at the above post office address.

7. The lessee, with the consent of the lessor, shall have the right to assign this lease. Provided, however, that no assignment of an undivided interest shall be recognized or approved by the lessor. Upon approval in writing by the lessor of an assignment, the assignor shall stand relieved from all obligations to the lessor with respect to the lands embraced in the assignment and the lessor shall likewise be relieved from all obligations to the assignor as to such tracts, and the assignee shall succeed to all of the rights and privileges of the assignor with respect to such tracts and shall be held to have assumed all of the duties and obligations of the assignor to the lessor as to such tracts.

8. Lessee shall be liable and agrees to pay for all damages to the range, livestock, growing crops or improvements caused by lessee's operations on said land. When requested by the lessor, the lessee shall bury pipelines below plow depth.

9. The lessor shall have, and the lessee hereby expressly gives and grants, a lien upon any improvements erected by the lessee on the leased premises for the security of any rentals or royalty payments due the lessor under the terms of this lease. The lessee shall not remove any machinery or fixtures placed on said premises unless and until all payments and obligations due the lessor under the terms of this agreement shall have been paid or satisfied.

10. Nothing herein contained shall be held or construed to prevent the lessor from leasing or letting the said lands or any portion thereof for grazing or agricultural purposes, or for leasing them for the exploration, development and production of products from deposits other than the item, including oil and gas, or for leasing them for the operation of a business, or for selling them under a deferred purchase contract with minerals reserved, or for patenting them with minerals reserved, or for the issuance of rights of way and easements over, upon or across them for public highways, railroads, tramways, telegraph, telephone and power lines, irrigation works, mining, logging and for any of the purposes mentioned hereinabove in this paragraph, and for other purposes.

11. The lease herein is issued subject to all valid existing rights and with special but not exclusive reference to the present existence of any of the matters mentioned in the paragraph next above.

12. This lease shall not become effective until the lessee shall file with the Commissioner of Public Lands a good and sufficient bond, to be approved by him, in the sum of Thirty six hundred--($3600.00) DOLLARS, in favor of the State of New Mexico, for the use and benefit of the Commissioner of Public Lands, conditioned upon the faithful compliance with all and singular the terms and provisions of this lease.

13. However, where any of the lands involved herein are embraced in a patent issued by the State of New Mexico with minerals reserved, or a deferred state purchase contract with minerals reserved, this lease shall not be effective and no rights shall inure to the lessee unless the bond designated in the paragraph next above shall be for an additional sum of ******NIL****** Dollars, in favor of the State of New Mexico, for the use and benefit of each purchaser holding purchase contract or deed to any lands embraced herein on which such development is about to be commenced, his grantees or successors in interest, to secure the payment for such damage to the livestock, range, water, crops or tangible improvements on such lands as may be suffered by such purchaser or his successors in interest by reason of such development, use and occupation of such lands by the lessee. Provided, however, that if any such purchaser shall file with the Commissioner of Public Lands a waiver duly executed and acknowledged by him of his rights to require such bond, such development, occupation and use of the lands by the lessee may be permitted without the bond herein required.

14. Upon failure or default of the lessee or any assignee to comply with any of the provisions or covenants hereof, the lessor is hereby authorized to cancel this lease and such cancellation shall extend to and include all rights hereunder as to the whole of the tract so claimed, or possessed by the lessee or assignee so defaulting; provided, however, that before any such cancellation shall be made, the lessor shall mail to the lessee, or assignee so defaulting, by registered mail, addressed to the post office address of such Lessee or assignee as shown by the records of the State Land Office, a notice of intention of cancellation specifying the default for which cancellation is to be made, and if within thirty days from the date of mailing said notice the said lessee or assignee shall remedy the default specified in said notice, cancellation shall not be made.

15. Upon the expiration of the term of this lease, the lessee shall have a preferential right to a renewal lease over any and all other applicants, providing all terms and conditions of this lease shall have been fully performed.

16. All terms of this agreement shall extend to and bind the heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the party of the first part has hereunto signed and caused its name to be signed by the Commissioner of Public Lands thereunto duly authorized with the seal of his office affixed, and the lessee has signed this agreement, the day and year first above written.

STATE OF NEW MEXICO
By

(Signed - Guy Shepard)
Commissioner of Public Lands
Lessor

(Signed - Ira N. Sprecher)
Lessee.

(Seal of Commissioner of Public Lands)

Sec. 2 - 13N - 11W., N.M.P.M.
Ira N. Sprecher, Applicant
306 South 2nd Street,
Gallup, New Mexico

Attached Sheet No. 2.

Attached Sheet No. 3
to
D.M.E.A. Form
M.F. - 103

4 PHYSICAL DESCRIPTION

(a) There are no mining or exploration operations at the present time, and none has been carried on.
There are no mine workings.
Members of the group for whose benefit the land has been leased, have explored several portions of the Section with Geiger Counters, and Scintillation Counters No. 111, and have dug shallow holes in the Dakota Shale and in the clay and other beds of the underlying Morrison formation ----- all at the outcrops----- and low radio activity has been detected.

Sec. 2 - 13N -11W., N.M.P.M.
Ira N. Sprecher, Applicant
306 South 2nd Street
Gallup, New Mexico

Attached Sheet No. 4
to
D.M.E.A. Form
MF-103

4 PHYSICAL DESCRIPTION

(c) Approximately the North 3/8th of the Section is the High Mesa, capped with Dakota sand-stone similar to the areas within the adjoining Township 13 North, Range 10 West, where the original discovery of Uranium was made in the Grants New Mexico Area.
The balance of the Section is made up of lower mesas or benches. Work with Geiger Counters and Scintillation Counters No. 111, and shallow diggings in the out-crops of the Dakota shales and in the outcrops of several of the members of the Morrison formation has shown the presence of low radio-activity in several areas.
The applicant has drilled into the Todilto limestone on Section 11 which adjoins to the South.
Apparently the Scintillation Counters indicate the presence of a radio-active strip running North and South thru about the center of the high portion of the Section, and this same strip, apparently extends up into Section 35 - 14 North Range 11 West. This strip is more or less in line with what appears, at the edge of the Mesa, to be a fault, and in the bottom of the arroyo----in line with this same strip---we have discovered loose samples of a gray-black rock that has high radio-activity. At the junction of the Dakota shale with the Morrison, our shallow excavations have produced petrified and partially petrified specimens that have low radio-activity.

Uranium has been mined from the Dakota sand-stone that forms the surface of a portion of Section 31 in 14 North, Range 10 West, about 1½ miles East and North of the Section in this application.

There are numerous Uranium mines in Township 13 North, Range 10 West, as indicated on the Maps on attached Sheet No. 5, and Reports are to the effect that one of the excellent producers is in the Morrison formation in the Area indicated within Sections 5 and 6 in 14 North, Range 11 West.

Sec. 2-13N-11W.
N.M.P.M.
Ira N. Sprecher,
Applicant
306 So. 2nd. St., Gallup, N.M.

Attached Sheet No. 4 (Continued)
to
D.M.E.A. Form
MF-103

4 PHYSICIAL DESCRIPTION (Continued)

Exploration work in the South East quarter, and other similar work in the South West quarter of Section 13 in Township 13 North, Range 11 West, has proved the presence of Uranium Ore.

It is believed that drilling along the Easterly portion of the high Mesa, near the outcrop, along the central strip hereinbefore described and, for lime, at the base of the Mesa, along the said central strip, will prove the presence of valuable Uranium Ore.

Sec. 2 - 13N - 11W., N.M.P.M.
Ira N. Sprecher, Applicant
306 South Second Street
Gallup, N. M.

Attached Sheet No. 6
to
D.M.E.A. Form
M.F. - 103

4 PHYSICAL DESCRIPTION

(d) The Section is accessible from roads coming in from the South, and passenger cars can be driven to about Mid-way of the Section from North to South.

An Oil Company's Pipe Line Road connecting with Ranch roads, is used to come in from the North to the very edge of the high mesa on the Section covered by this application.

These roads lead off from U. S. Highway 66 which is only about 3½ miles from Section 2.

The Main Line of the Santa Fe Railway Company is adjacent to U. S. Highway 66.

The Uranium Mill of Anaconda Copper Mining Company in the Grants New Mexico area is within 10 miles of this section. Supply and residence points are nearby at Grants, Bluewater, Thoreau and Gallup, New Mexico.

Sec. 2 - 13N - 11W., N.M.P.M.
Ira N. Sprecher, Applicant
306 South 2nd Street
Gallup, New Mexico

Attached Sheet No. 7
to
D.M.E.A. Form
M.F. - 103

4 PHYSICAL DESCRIPTION

(e) Manpower, Materials, Supplies and Equipment are available to this Section by reason of the Mining activity of the surrounding area, in which there are numerous mines.

Several well equipped and experienced drilling Contractors are now working in the area, and the supply points are meeting the demands.

The markets of Albuquerque are less than 100 miles away, along Highway 66.

Water and power are not available other than that which an Operator would provide for himself.

Sec. 2 - 13N - 11W., N.M.P.M.
Ira N. Sprecher, Applicant
306 South 2nd Street
Gallup, New Mexico

Attached Sheet No. 8
to
D.M.E.A. Form
M.F. - 103

5 THE EXPLORATION PROJECT

(b) The proposed work will consist of drilling with a Core-drilling rig thru the Dakota and Morrison formations along the Easterly portions of that part of the Section that is on the high mesa, and drilling the same formations over the said strip running North and South thru the approximate center of the Section, and drilling along the continuation of that same said strip at the foot of the Mesa.

Each hole should be approximately 200 feet deep. (See Maps ----- Attached Sheet 5.)

Sec. 2 - 13N - 11W., N.MP.M.
Ira N. Sprecher, Applicant
306 South 2nd Street
Gallup, New Mexico

Attached Sheet No. 9
to
D.M.E.A. Form
M.F. - 103

5 THE EXPLORATION PROJECT

(d) Applicant has had no mine operating experience, but he and most of his associates have had business experience, operating their own businesses for many years.

Inasmuch as all the work shall be let to experienced and qualified Contractors, the members of the group are amply able to supervise and direct the actual work.

Sec. 2 - 13N - 11W., N.M.P.M.
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Attached Sheet No. 10
to
D.M.E.A. Form
M.F. - 103

6 ESTIMATE OF COSTS

(a) INDEPENDENT CONTRACTS

4600 feet of drilling
in 23 locations approximately as indicated on the map -- attached sheet No. 5 -- or thereabouts, as suggested by the results of the drilling as it proceeds - - -

to be contracted at $0.60 per foot for the first 100 feet, and $1.10 per foot for the second 100 feet--- $ 3910.00

with one or more holes slightly deeper to use up the over plus of 90.00

$ 4000.00

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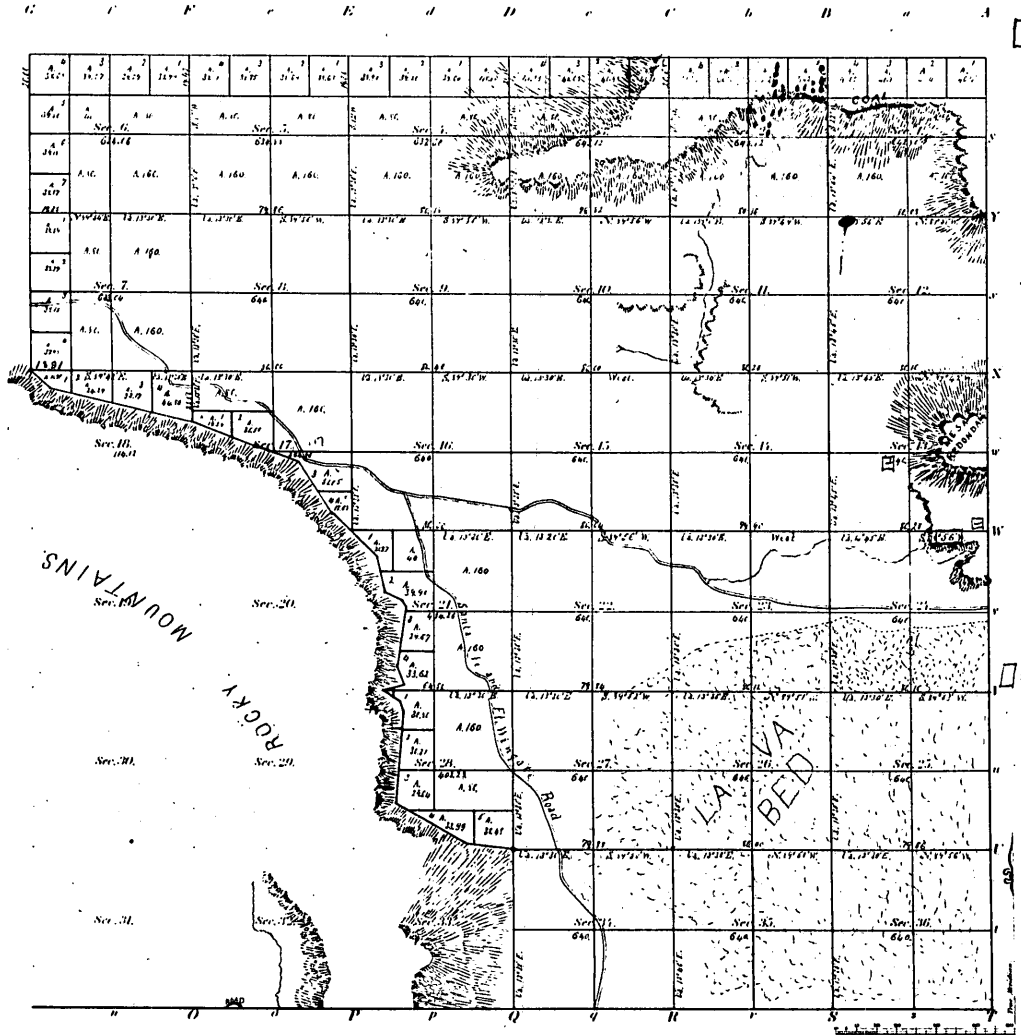
Attached Sheet No. 5
to
D.M.E.A. Form
M.F. - 103

FRACTIONAL TOWNSHIP Nº 13 NORTH RANGE Nº 11 WEST OF THE NEW MEXICO PRINCIPAL MERIDIAN



Meanders of Meandering T. 13 N. R. 11 W.

Through Sec. 11

	Bearings	Chains	Links
1	S 42° 30' E.	13.16	
2	S 70° 30' E.	17.00	
3	S 77° E.	13.00	

Through Sec. 12

	Bearings	Chains	Links
1	S 67° 30' E.	11.16	
2	S 80° E.	21.00	
3	S 65° E.	16.00	
4	S 80° E.	16.00	

Through Sec. 1

	Bearings	Chains	Links
1	S 86° E.	18.00	
2	S 15° E.	12.00	
3	S 65° E.	10.00	
4	S 26° E.	5.00	
5	S 5° W.	30.00	
6	S 15° E.	12.00	
7	S 66° W.	10.00	

Through Sec. 12

	Bearings	Chains	Links
1	S 16° E.	10.00	
2	S 10° E.	6.00	
3	S 5° W.	42.00	
4	S 60° E.	60.00	
5	S 15° E.	22.50	

• = Approximate location of proposed drilling

□ = Mines or known deposits

This township is designated as Coal Land by the Surveyor General.

Surveys Designated	By Whom Surveyed	Date of Contract	Amount of Surveys	When Surveyed
Township lines	George H. Pradt	July 1st 1873	M.	September 1873
Subdivisions	George H. Pradt	July 1st 1873	46 9 24	September 1873
Meanders	George H. Pradt	July 1st 1873	5 9 86	September 1873

Total number of Acres 17386.62

The above Map of Township No. 13 North of Range No. 11 West of the Principal Meridian of New Mexico is strictly conformable to the field notes of the survey thereof on file in this office which have been examined and approved.

Surveyor General's Office
Santa Fe New Mexico
Nov. 25 1873

James R. Crawford
Surv. Gen'l

Sec. 2 -13N-11W., N.M.P.M.
Ira N. Sprecher, Applicant
306 S. 2nd St., Gallup, N.M.

DMEA-3225

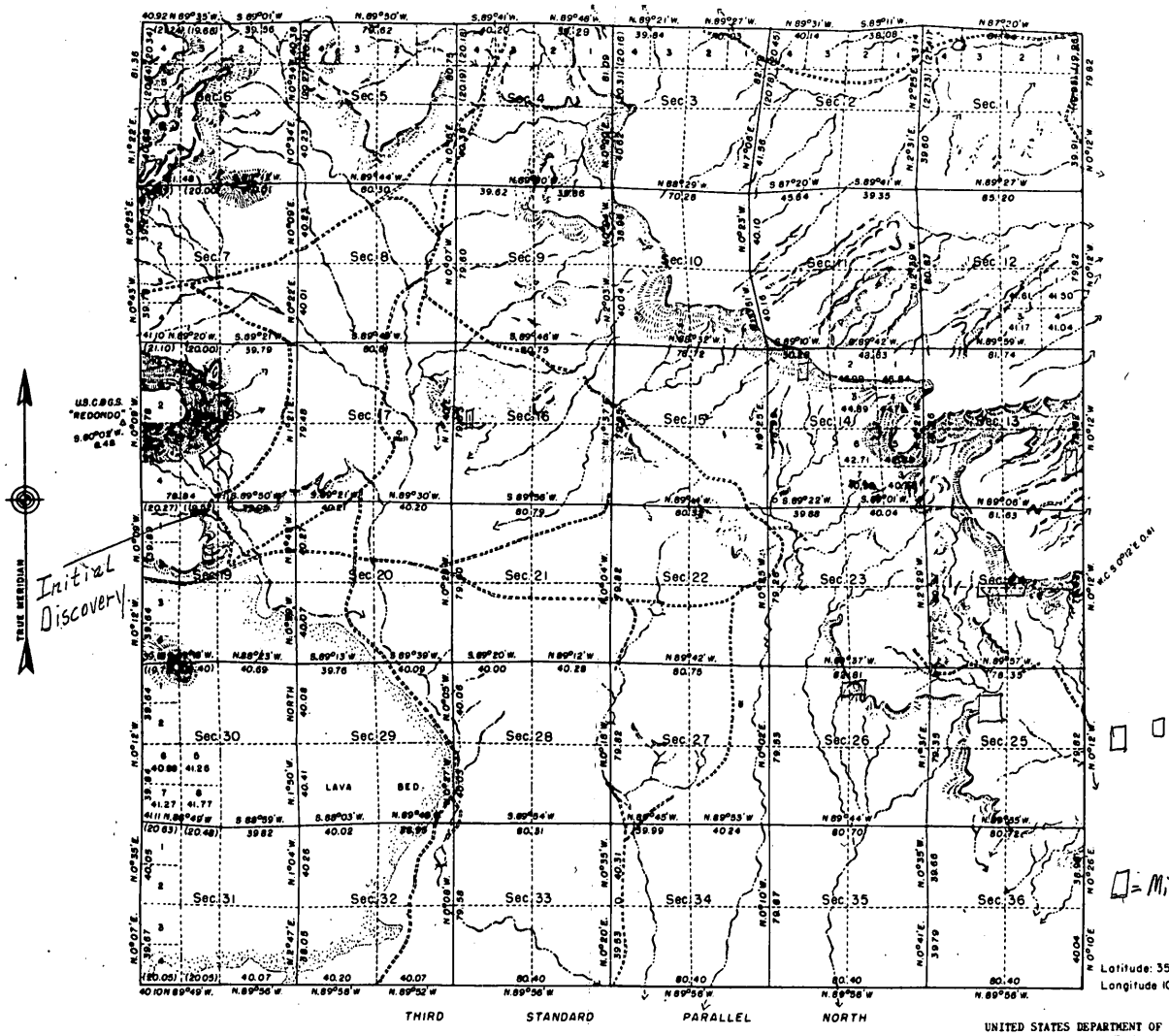
Attached Sheet No. 5

Attached Sheet No. 5 - Continued
to
D.M.E.A. Form
M.F. - 103

ORIGINAL

TOWNSHIP No.13 NORTH, RANGE No.10 WEST OF THE NEW MEXICO PRINCIPAL MERIDIAN, NEW MEXICO

Dependent Resurvey



This plat represents a retracement and reestablishment of the original township boundary and subdivisional lines designed to restore the corners in their original locations according to the best available evidence. The lottings and areas are as shown on the plat approved November 25, 1873, except as new areas are shown hereon.

□ = Mines or known deposits.

Latitude: 35°18'18"N.
Longitude 107°50'21.5"W.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Washington, D. C., February 7, 1952

Resurvey of the Third Standard Parallel North through R. 10 W., and of the north, east, and west boundaries and subdivisional lines, executed by Wendell G. Hall February 14 to April 26, 1951, under Special Instructions for Group 528 New Mexico dated January 19, 1951.

10 0 10 20 40 80
Scale in Chains

Area Resurveyed: 23,109.33 Acres

This plat is strictly conformable to the approved field notes, and the survey, having been correctly executed in accordance with the requirements of law and the regulations of this Bureau, is hereby accepted.

For the Director

William F. Rickards

Chief, Branch of Surveys

EMC

Topography within sections compiled from aerial photographs and coordinated with section line control obtained during the survey.

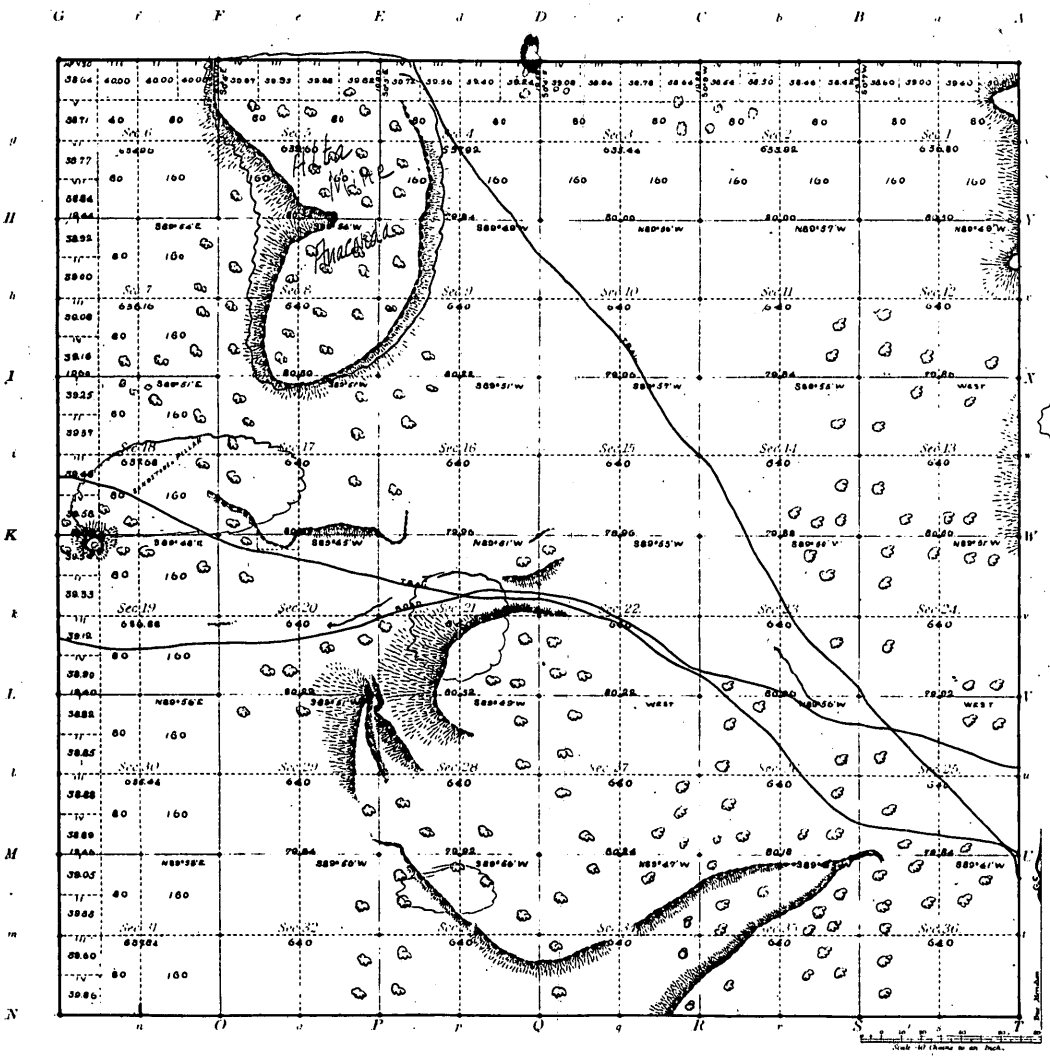
Sec. 2 -13N-11W., N.M.P.M.
Ira N. Sprecher, Applicant
306 So. 2nd St., Gallup, N.M.

DMBA-3225

Attached sheet No. 5 - Continued

Attached Sheet No. 5 - Second Continuation
to
D.M.E.A. Form
M.F. - 103

TOWNSHIP No. 14 NORTH RANGE No. 11 WEST OF THE NEW MEXICO PRINCIPAL MERIDIAN



Surveys Designated	By Whom Surveyed	Date	Amount of Surveys	When Entered	Magnetic Declination
Township lines	TAYLOR & POWELL	[illegible] 1881	M. Ch. Lk.	APRIL 1881	13°56' E. 13°55' E.
Subdivisions	TAYLOR & POWELL	[illegible] 1881	48 [illegible] 00	JUNE 17-28 1881	13°56' E. 13°55' E.

Total number of Acres 23008.94

The above Map of Township No. 14 North of Range No. 11 West of the Principal Meridian of New Mexico is strictly conformable to the field notes of the Survey thereof on file in this Office, which have been examined and approved.

Surveyor General's Office, Santa Fe, N.M. Sept 1st 1881

Henry M. Atkinson
Sur. Gen.

D-MEA-3225

Sec. 2 -13N-11W, N.M.P.M.
Ira N. Sprecher, Applicant
306 So. 2nd St., Gallup, N.M.

Attached Sheet No. 5 - Second Continuation