Surname copy

700

Ching
Ellis
Nelson
Gehan
Selfridge
Hyman

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

NOV 17 1955

Mr. Edgar B. Butts, Vice-President
Nelly Uranium Corporation
Box 86
Grants, New Mexico

Re: Docket No. DMEA-3806 (Uranium)
Silver Spur Mine
McKinley County, New Mexico

Dear Mr. Butts:

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

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

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

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

Sincerely yours,

C. O. Mittendorf

Administrator

MChing/gla
11-14-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700 Mr. Ching
DMEA Field Team, Region III (2)

R.C.S.

DOCKET COPY

Ching
Ellis
Nelson

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

November 14, 1955

Summary of Proposed Project

Object: Denial of application for an exploration project.

Docket No.: DMEA-3886

Commodity: Uranium

Applicant: Holly Uranium Corporation
Post Office Box 86
Grants, New Mexico

Property: All of Section 31, T. 14 N., R. 10 W., N.M.P.M. McKinley County, New Mexico. Known as the Silver Spur Mine. Applicant is the Purchaser of the Sublease on the property.

Date of application: June 27, 1955.

Amount of application: $160,129.77

Work Proposed: Test by rotary drilling the upper portion of the Morrison formation (Brushy Basin) and the overlying Dakota sandstone for uranium deposits, the work to be done in three stages.

Stage I consists of 79 holes totaling 26,240 feet with average depth of 332 feet. The drill pattern consists of 7 lines of holes spaced 800 feet apart, with the holes in each line spaced 400 feet apart. Ten cored holes are to be drilled through the Westwater Canyon member and the remaining 69 non-core holes are to be bottomed at the top of the Westwater Canyon member.

Stage II consists of 130 holes totaling 41,600 feet, spaced on 200-foot centers, and is to be based on results of Stage I.

Stage III consists of 150 holes totaling 49,920 feet, spaced on 100 and 50-foot centers, and is to be based on results of the preceding drilling.

Work Proposed (Cont'd)

Estimated Cost:

Independent contract drilling	
117,760 ft. @ $1.19 (#218 794)	$139,892.00
Bulldozing 75 hrs. @ $12.50	937.50
Supervision and labor	8,049.14
Other costs	8,251.13
Contingencies	3,000.00
Total	$160,129.77
Government participation @ 75%	$120,097.33

Field Team Report:

October, 1955 - Howard F. Albee, USGS
GlenWalker, USBM

Rocks exposed on the subject property are the Brushy Basin member of the Morrison formation, the Dakota Sandstone, and the Mancos shale. Production from the property is reported as about 1,100 tons of 0.20% U_3O_8 ore extracted from seven or more small, scattered deposits along the Dakota rim. At the time of making the application ~~the~~ Later, target for exploration was in the Brushy Basin. Applicant wished to drill through the Westwater sandstone because of significant discoveries in that horizon in the Ambrosia Lake area about 5 miles to the northeast.

Many large ore bodies have been found in the Grants district, but none of significant size have been found in the immediate vicinity of the subject property. The Poison Canyon area ore bodies are about 7 miles southwest of the property. The Haystack area mines are about 4 miles south, but they are in the Todilto limestone which is too deep to explore on the subject property. The Dakota mine, 3miles to the east, produced about 600 tons of ore prior to July, 1954, from the Brushy Basin. A group of small mines, 6 miles to the northwest have produced several hundred tons of ore from the Brushy Basin and the Dakota formations.

Seventy-seven rotary drill holes have been drilled on the property. Only four went deeper than the Dakota and of these one is reported to have penetrated the Westwater, but no information is available on this hole.

Available information does not show that favorable sands are present in the Brushy Basin or that the Westwater is favorable for ore deposits. The nearest outcrop of Westwater is predominantly yellowish -- orange to light brown in contrast to the altered yellowish-gray sandstone found near mineralized deposits.

It is believed that drilling under these circumstances would represent prospecting. It is suggested that the applicant drill five core holes through the Westwater for its own account as a preliminary step to further Government consideration of an exploration project.

The Field Team (Traver and Harshman) recommend that the application be denied without prejudice. It does not favor holding the application in abeyance while Applicant does more work.

Commodity Group Comments:

Geological Survey - W. D. Williams
T. H. Kiilsgaard - November 7, 1955

Although small production has come from the property from the Dakota formation, the deposits in the Dakota sands on the property are too small and scattered to justify exploration. Deposits in the Westwater Canyon member, on the other hand, may be large; but nothing is known of the Westwater on the property. Agrees with the Field Team that the application should be denied without prejudice.

Bureau of Mines - John E. Crawford - November 9, 1955.

Discussed the report of examination with the AEC representative. While some production has come from small rim deposits in the Dakota sandstone, there has been no production from, nor prospect drilling in, the Poison Canyon and Westwater Canyon formations on the property, and the potentialities of the latter as ore-bearing formations are unknown. Agrees with the Field Team that the application should be denied without prejudice.

Rare and Miscellaneous Metals Division - Michael Ching,
November 14, 1955.

The potential of the general area surrounding the subject property is good. Small deposits have been proven in the Dakota formation and large depositshave been found in the Poison Canyon and Westwater Canyon formations. However, the known large deposits in the latter formations are 5 or more miles distant and no information is available on these formations within the subject property. It is concluded that this is a good prospect but not enough specific information is available to make it eligible for an exploration project.

Conclusions and Recommendations:

Potentially large deposits may be found in this general area but the subject property requires some preliminary work to prove its potentiality. It is recommended that the application be denied without prejudice.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

Q.P.

November 14, 1955

Summary of Proposed Project

Object: Denial of application for an exploration project.

Docket No.: DMEA-3886

Commodity: Uranium

Applicant: Holly Uranium Corporation
Post Office Box 86
Grants, New Mexico

Property: All of Section 31, T. 14 N., R. 10 W., N.M.P.M. McKinley County, New Mexico. Known as the Silver Spur Mine. Applicant is the Purchaser of the Sublease on the property.

Date of application: June 27, 1955.

Amount of application: $160,129.77

Work Proposed: Test by rotary drilling the upper portion of the Morrison formation (Brushy Basin) and the overlying Dakota sandstone for uranium deposits, the work to be done in three stages.

Stage I consists of 79 holes totaling 26,240 feet with average depth of 332 feet. The drill pattern consists of 7 lines of holes spaced 800 feet apart, with the holes in each line spaced 400 feet apart. Ten cored holes are to be drilled through the Westwater Canyon member and the remaining 69 non-core holes are to be bottomed at the top of the Westwater Canyon member.

Stage II consists of 130 holes totaling 41,600 feet, spaced on 200-foot centers, and is to be based on results of Stage I.

Stage III consists of 150 holes totaling 49,920 feet, spaced on 100 and 50-foot centers, and is to be based on results of the preceding drilling.

ork
Proposed
(Cont'd)

Estimated Cost:

Independent contract drilling 117,760 ft. @ $1.19	$139,892.00
Bulldozing 75 hrs. @ $12.50	937.50
Supervision and labor	8,049.14
Other costs	8,251.13
Contingencies	3,000.00
Total	$160,129.77
Government participation @ 75%	$120,097.33

Field Team
Report:

October, 1955 - Howard F. Albee, USGS
Glen Walker, USBM

Rocks exposed on the subject property are the Brushy Basin member of the Morrison formation, the Dakota Sandstone, and the Mancos shale. Production from the property is reported as about 1,100 tons of 0.20% U_3O_8 ore extracted from seven or more small, scattered deposits along the Dakota rim. At the time of making the application the target for exploration was in the Brushy Basin. Later Applicant wished to drill through the Westwater sandstone because of significant discoveries in that horizon in the Ambrosia Lake area about 5 miles to the northeast.

Many large ore bodies have been found in the Grants district, but none of significant size have been found in the immediate vicinity of the subject property. The Poison Canyon area ore bodies are about 7 miles southwest of the property. The Haystack area mines are about 4 miles south, but they are in the Todilto limestone which is too deep to explore on the subject property. The Dakota mine, 3 miles to the east, produced about 600 tons of ore prior to July, 1954, from the Brushy Basin. A group of small mines, 6 miles to the northwest have produced several hundred tons of ore from the Brushy Basin and the Dakota formations.

Seventy-seven rotary drill holes have been drilled on the property. Only four went deeper than the Dakota and of these one is reported to have penetrated the Westwater, but no information is available on this hole.

Available information does not show that favorable sands are present in the Brushy Basin or that the Westwater is favorable for ore deposits. The nearest outcrop of Westwater is predominantly yellowish -- orange to light brown in contrast to the altered yellowish-gray sandstone found near mineralized deposits.

It is believed that drilling under these circumstances would represent prospecting. It is suggested that the applicant drill five core holes through the Westwater for its own account as a preliminary step to further Government consideration of an exploration project.

The Field Team (Traver and Harshman) recommend that the application be denied without prejudice. It does not favor holding the application in abeyance while Applicant does more work.

Commodity Group Comments:

Geological Survey - W. D. Williams
T. H. Kiilsgaard - November 7, 1955

Although small production has come from the property from the Dakota formation, the deposits in the Dakota sands on the property are too small and scattered to justify exploration. Deposits in the Westwater Canyon member, on the other hand, may be large; but nothing is known of the Westwater on the property. Agrees with the Field Team that the application should be denied without prejudice.

Bureau of Mines - John E. Crawford - November 9, 1955.

Discussed the report of examination with the AEC representative. While some production has come from small rim deposits in the Dakota sandstone, there has been no production from, nor prospect drilling in, the Poison Canyon and Westwater Canyon formations on the property, and the potentialities of the latter as ore-bearing formations are unknown. Agrees with the Field Team that the application should be denied without prejudice.

Rare and Miscellaneous Metals Division - Michael Ching,
November 14, 1955.

The potential of the general area surrounding the subject property is good. Small deposits have been proven in the Dakota formation and large depositshave been found in the Poison Canyon and Westwater Canyon formations. However, the known large deposits in the latter formations are 5 or more miles distant and no information is available on these formations within the subject property. It is concluded that this is a good prospect but not enough specific information is available to make it eligible for an exploration project.

Conclusions and Recommendations:

Potentially large deposits may be found in this general area but the subject property requires some preliminary work to prove its potentiality. It is recommended that the application be denied without prejudice.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

MChing/gla
11-14-55
cc to: Admr.'s Reading File
Operating Committee
Docket(original)
Code 700
Mr. Ching

11/10/55 gla

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

RECEIVED
NOV 1 0 1955

November 9, 1955

Memorandum

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

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket No. 3886, Holly Uranium Corp., McKinley County, New Mexico

I have reviewed the report of examination, DMEA Docket 3886, dated October 26 and received in this office November 3. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

While the Field Team reports that Holly Uranium Corp. has produced some uranium ore from several small rim deposits in the Dakota sandstone, there has been no production from the Poison Canyon and the Westwater Canyon formations. The applicant has not conducted any prospect drilling of the Poison Canyon and the Westwater Canyon strata, which do not outcrop on the property and their potentialities as ore-bearing formations are unknown. Therefore, the field examiners have concluded that the application for assistance to explore the Poison Canyon and Westwater Canyon formations is comprised of prospecting work rather than exploration, and they suggest that the application be held in abeyance until the Holly Uranium Corp. puts down at least 5 holes to determine the favorability of the subject formations.

The Field Team, however, requests that the application, based on information presented, be denied without prejudice, and that the applicant be informed that he may reapply for assistance if and when his prospecting work determines the subject formations are geologically favorable for the deposition of uranium therein.

We agree with the Field Team that it is more logical to deny the application without prejudice than to hold it in abeyance for an indeterminate period and suggest that the DMEA act accordingly.

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

John E. Crawford

John E. Crawford

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

November 9, 1955

Memorandum

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

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket No. 3886, Holly Uranium Corp., McKinley County, New Mexico

I have reviewed the report of examination, DMEA Docket 3886, dated October 26 and received in this office November 3. I have also discussed it with Joseph O. Hested, Washington representative of the Atomic Energy Commission.

While the Field Team reports that Holly Uranium Corp. has produced some uranium ore from several small rim deposits in the Dakota sandstone, there has been no production from the Poison Canyon and the Westwater Canyon formations. The applicant has not conducted any prospect drilling of the Poison Canyon and the Westwater Canyon strata, which do not outcrop on the property and their potentialities as ore-bearing formations are unknown. Therefore, the field examiners have concluded that the application for assistance to explore the Poison Canyon and Westwater Canyon formations is comprised of prospecting work rather than exploration, and they suggest that the application be held in abeyance until the Holly Uranium Corp. puts down at least 5 holes to determine the favorability of the subject formations.

The Field Team, however, requests that the application, based on information presented, be denied without prejudice, and that the applicant be informed that he may reapply for assistance if and when his prospecting work determines the subject formations are geologically favorable for the deposition of uranium therein.

We agree with the Field Team that it is more logical to deny the application without prejudice than to hold it in abeyance for an indeterminate period and suggest that the DMEA act accordingly.

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

John E. Crawford

11-8-55 ijm

IN REPLY REFER TO:

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

RECEIVED
NOV - 8 1955

November 7, 1955

Memorandum

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

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

Subject: Review of Field Team Report, DMEA 3886, Holly Uranium Corporation, Silver Spur claims, McKinley County, New Mexico.

The report of field examination points out that the objective of the proposed exploration is to find uranium ore in the Westwater Canyon member of the Morrison formation. The Morrison formation is covered and does not crop out on the — ? property.

Although small production has come from the property from the Dakota formation, the deposits in the Dakota sands on the property are too small and scattered to justify exploration. Deposits in the Westwater Canyon member, on the other hand, may be large; but nothing is known of the Westwater on the property.

I agree with the Field Team that the application should be denied without prejudice until more work on the property shows that DMEA participation in exploration expenditures would be appropriate. Holding the application in abeyance until the applicant completes more work is not desirable as the applicant may take several months to do more work or may never do it at all.

T. A. Kiloguard
for: W. P. Williams

IN REPLY REFER TO:

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

RECEIVED
NOV - 8 1955

November 7, 1955

Memorandum

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

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

Subject: Review of Field Team Report, DMEA 3886, Holly Uranium Corporation, Silver Spur claims, McKinley County, New Mexico.

The report of field examination points out that the objective of the proposed exploration is to find uranium ore in the Westwater Canyon member of the Morrison formation. The Morrison formation is covered and does not crop out on the property.

Although small production has come from the property from the Dakota formation, the deposits in the Dakota sands on the property are too small and scattered to justify exploration. Deposits in the Westwater Canyon member, on the other hand, may be large; but nothing is known of the Westwater on the property.

I agree with the Field Team that the application should be denied without prejudice until more work on the property shows that DMEA participation in exploration expenditures would be appropriate. Holding the application in abeyance until the applicant completes more work is not desirable as the applicant may take several months to do more work or may never do it at all.

WPWilliams:iml
G-11/7/55

W. P. Williams

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

10

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

RECEIVED OCT 31 1955

October 26, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination, DMEA Docket 3886 (Uranium), Holly Uranium Corporation, Sec. 31, T. 14 N., R. 10 W., McKinley County, New Mexico

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

The examiners conclude there is no evidence at this time that the Brushy Basin or Westwater Canyon members of the Morrison formation, which probably underlie the claims, are favorable for the occurrence of uranium ore deposits.

We recommend that the application be denied without prejudice. If, at some later date, the applicant has data available for appraising the ore potential of the strata to be explored, a new application would receive proper consideration.

W. M. Traver
W. M. Traver

E. H. Hornbrook
E. H. Hornbrook

Enclosures

11-4-55

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

RECEIVED
OCT 21 1955

IN REPLY REFER TO:
DMEA
Date Rec'd.
OCT 25 1955
BUREAU OF MINES
Denver, Colorado

October 20, 1955

TRANSMITTED
OCT 26 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Hershman
John F. Shaw

Subject: DMEA Docket 3886 (Uranium), Molly Uranium Corporation, McKinley ~~Sanete~~ County, New Mexico

Enclosed are the original and nine copies of a joint examination report by R. F. Albee, U. S. Geological Survey, and Glen Walker, U. S. Bureau of Mines, covering their examination of the subject property.

The applicant proposes a 3-stage program of exploration for uranium ore in the Brushy Basin and Westwater Canyon members of the Morrison Formation. The program consists of 359 core and non-core holes totaling 117,760 feet of drilling. The estimated total cost of the project is $160,189.77, Government participation 75 percent.

The examiners conclude that there is no evidence that the Brushy Basin or Westwater Canyon members of the Morrison formation, which probably underlie the claims, are favorable for the occurrence of uranium ore deposits. They recommend that the application be held in abeyance until the applicant drills at least five holes on the property to determine the ore potential of the Brushy Basin and Westwater Canyon strata. It may be as much as six months before this drilling can be completed.

We do not concur with this recommendation, and based on the unknown character of the potential ore horizons beneath the claims, we recommend that the application be denied without prejudice. The applicant should be informed that when data are available for appraising the ore potential of the strata to be explored, a new application may be submitted for consideration by DMEA.

E. N. Hershman
E. N. Hershman
Member, Field Team

11-4-55

John F. Shaw
John F. Shaw
Supervising Mining Engineer

Enclosures (10)
EHershman:arh

RECEIVED
OCT 31 1955

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

October 12, 1955

Memorandum

TRANSMITTED
OCT 26 1955

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

From: D. D. Haynes for J. W. Hasler

Subject: DMEA 3886, Holly Uranium Corporation, sec. 31, T. 14 N., R. 10 W., N.M.P.M., McKinley County, New Mexico

Transmitted herewith is the draft of a joint report by H. F. Albee and Glen Walker, covering a field examination of the above-referenced property. We are returning herewith the brochure covering this application and 12 copies of figure 2.

The subject property lies in an area which has had considerable production from the Dakota sandstone, but to date no production has come from the Poison Canyon sandstone or the Westwater Canyon sandstone.

As there are no known ore bodies within four to five miles of the subject property and no exploratory drilling has been done through the Poison Canyon or Westwater Sandstone members in this vicinity, it was decided that any exploration undertaken would be of a prospecting nature.

Therefore, it was suggested that the applicant core drill at least five holes through the Westwater sandstone. It is believed the data from these cored holes will be sufficient to evaluate the property with respect to further exploration. The company's representative voiced approval of the suggestion, but pointed out that it would be some time before the drilling could be completed.

11-4-55

It is recommended that this application be held in abeyance until the company presents more definite information on the underlying ore horizons, which will be obtained from these core holes.

D. D. Haynes
D. D. Haynes
Geologist

DDH/mlr

Enclosures

UNITED STATES DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINING TEAM
REGION III

DMEA 5886

Rally Uranium Corporation, Grants, New Mexico

Sec. 33, T. 14 N., R. 10 W., NMPM

McKinley County, New Mexico

Uranium

Geologic Report
by
Howard F. Albee

Engineering Report
by
Glen Walker

October 1955

11-4-55

RECEIVED
OCT 31 1955

CONTENTS

	Page
Summary and introduction	1
Acknowledgments	2
Location, topography, and physical features	2
History, production, and ownership	3
Geology and ore deposits	4
Minable ore reserves	7
Present status	7
Project proposals	8
Conclusions	8
Recommendations	9

ILLUSTRATIONS

Figure		Follows page
1	Location map, Bally Uranium Corporation, Section 31, T. 14 N., R. 10 W., N.M.P.M., McKinley County, New Mexico	2
2	Geologic map of Section 31, T. 14 N., R. 10 W. and vicinity, Bally Uranium Corporation, McKinley County, New Mexico	4

DMRA 3886
HOLLY URANIUM CORPORATION
GRANTS, NEW MEXICO

SUMMARY AND INTRODUCTION

The Holly Uranium Corporation, Grants, New Mexico, requested assistance in exploration for uranium ore on sec. 31, T. 14 N., R. 10 W., N.M.P.M., McKinley County, New Mexico.

The applicant proposed drilling 599 dry rotary core and non-core holes totaling 117,760 feet. This work was to be done in three stages, the first consisted of 79 holes for a total of 26,240 feet. Ten of these holes were to be cored through the Dakota, Brushy Basin, and Westwater Canyon strata. The first stage holes were located in seven rows 800 feet apart with holes 400 feet apart staggered in the rows. In the second stage it was estimated that 130 non-core holes totaling 41,600 feet would be necessary to delineate favorable areas found in stage I. These holes were to be placed on 200-foot centers about favorable stage I holes. Stage III consisted of 150 non-core holes totaling 49,920 feet, the location of which were 50 to 100 feet from mineralized holes found during stages I and II. It was estimated the project would cost $160,139.77, or $1.36 per foot, which is a reasonable figure.

An examination was made of the property on August 23, 1955, by a Region III examining team composed of E. F. Albee, USGS, and Glen Walker, USBM.

Because the applicant could not produce sufficient evidence that the potential host rocks exist on his property, it was suggested, and he concurred, that at least five core holes be drilled, at the expense of the applicant, through the Westwater Canyon member of the Jurassic Morrison formation.

It is recommended that this application be held in abeyance until the suggested prospect drilling is completed and evaluated. This period may be six months due to previous commitments and the increased demand for drilling equipment in the district.

ACKNOWLEDGMENTS

W. A. Carlson, geologist for Rally Uranium Corp., guided the examining team and provided pertinent information. R. Thaden and E. Ostling, USGS field geologists, aided the examination with information and opinions. The Atomic Energy Commission was consulted during the course of the field examination.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The property, locally known as the Silver Spur, lies in sec. 31, T. 14 N., R. 10 W., N.M.P.M., about 9 miles east and north of Prewitt, New Mexico, the nearest town (fig. 1). The Anaconda Copper Mining Company's uranium mill and buying station is in Bluewater, New Mexico, about 15 miles south of the property. Albuquerque, the principal supply point in New Mexico, is about 90 miles east of Bluewater over U. S. Highway 66 or the Santa Fe Railroad.

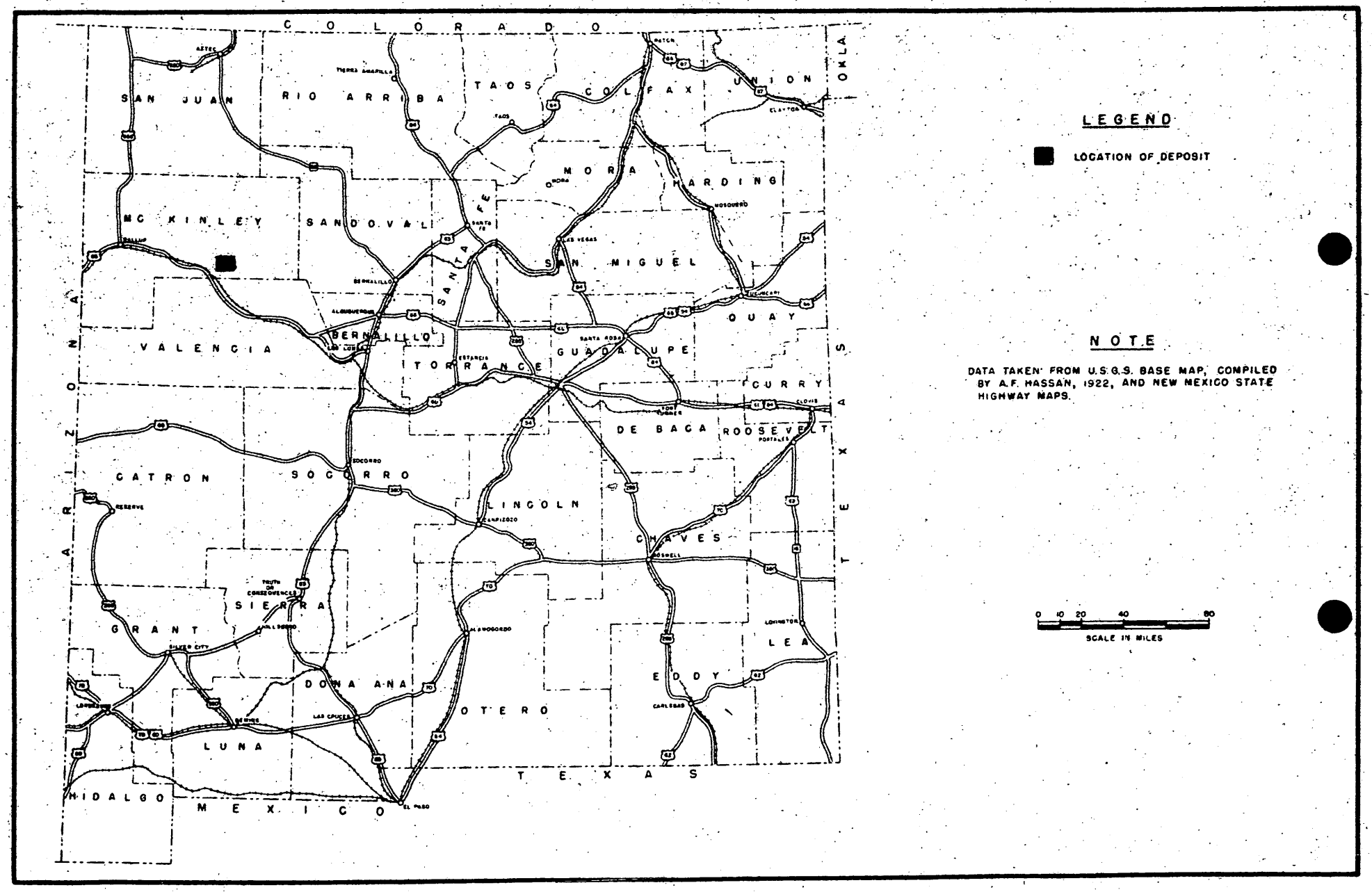


FIGURE 1. LOCATION MAP, HOLLY URANIUM CORPORATION, SECTION 31, T. 14 N., R. 10 W., N.M.P.M. McKINLEY COUNTY, NEW MEXICO. DMEA 3886

The topography is that of the usual mesa, relatively flat but locally rolling. The relief is not abrupt except along the south side of the property where the Dakota and upper Brushy Basin form a bluff about 150 feet high.

Much of the property is covered by a thick growth of pinon and cedar that does not attain sizes sufficient for mine use.

The climate is semi-arid to arid marked by extremes in temperature and precipitation during both summer and winter. Very little lost time is experienced by surface operations in either season, however.

Water for any use would have to be hauled from Prewitt or Bluewater over fair roads and trails.

Power for any type operation would have to be furnished by internal combustion engines.

Common and unskilled labor is reasonably plentiful, but experienced underground miners are very few in the district.

HISTORY, PRODUCTION, AND OWNERSHIP

The property was originally used for grazing; the uranium ore mining rights were conveyed by a lease from Annie May Berryhill to Lawrence Hibine and Duane Berryhill in November 1953, who, in turn, gave a sublease to Four Corners Exploration Company, who finally sold their interests to Kelly Uranium Corporation.

There is reported to have been a uranium ore production of about 1,100 tons from at least seven scattered small deposits along the Cretaceous Dakota rim. The grade of this material is reported to be

about 0.20 percent U_3O_8. There has been no production from either the Poison Canyon or the Westwater Canyon strata of the Jurassic Morrison. These rocks do not crop out on the property and they have not been prospected by drilling.

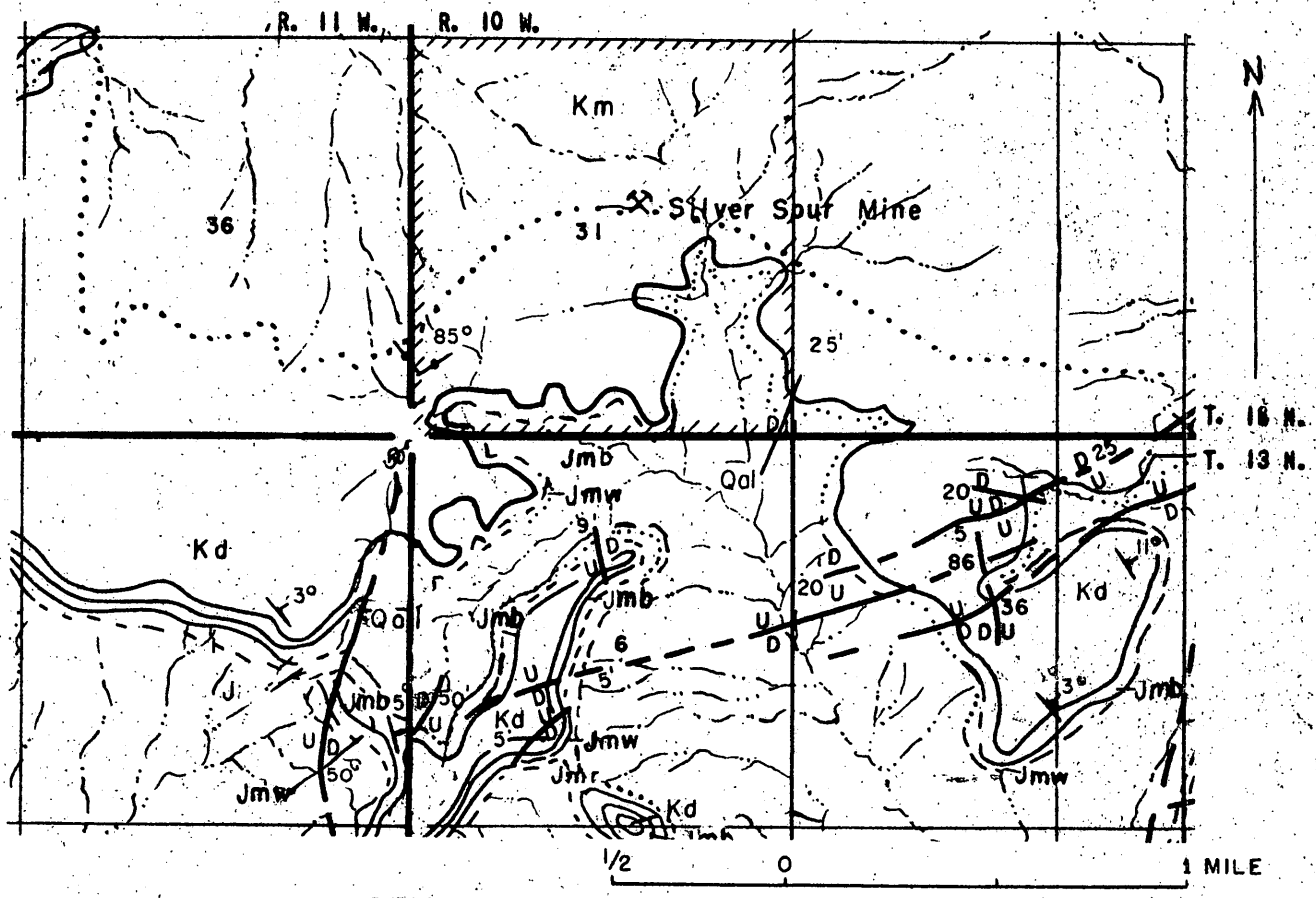
GEOLOGY AND ORE DEPOSITS

The subject section of land (sec. 31, T. 14 N., R. 10 W., N.M.P.M., McKinley County, New Mexico) is on the northwest edge of the Zuni uplift. Except locally where disturbed by faults, all the rocks strike about N. 60° W., which is the trend of the Zuni uplift, and dip about 2-1/2° to the northeast.

The rocks exposed on the subject area are, from oldest to youngest, the Brushy Basin member of the Jurassic Morrison formation, the Cretaceous Dakota sandstone, and the Cretaceous Mancos shale (fig. 2).

The Brushy Basin is composed of gray and green, soft, gypsiferous mudstone sporadically interbedded with lenses of crossbedded, coarse-grained to conglomeratic sandstone. It weathers to form a steep slope littered with huge talus blocks of Dakota sandstone. The Brushy Basin and the underlying Westwater sandstone commonly intertongue.

The Dakota sandstone unconformably overlies the Morrison formation. It is usually a gray to buff, medium-grained, cliff-forming sandstone. The lower portion, however, commonly is composed of dark gray and green shale and some carbonaceous shale or coal. The base of the lowest carboniferous shale, where present, is accepted as the base of the Dakota. The Dakota in this area ranges from 70 feet to 85 feet thick.



EXPLANATION

Qal	QUATERNARY ALLUVIUM
Km	CRETACEOUS MANCOS SHALE
Kd	CRETACEOUS DAKOTA SANDSTONE
Jmb	BRUSHY BASIN MEMBER OF THE JURASSIC MORRISON FORMATION
Jmw	WESTWATER SANDSTONE MEMBER OF THE JURASSIC MORRISON FORMATION
Jmr	RECAPTURE SHALE MEMBER OF THE JURASSIC MORRISON FORMATION
	FORMATION CONTACT
	FORMATION CONTACT INFERRED
	FORMATION CONTACT IN DOUBT
85°	STRIKE AND DIP OF BEDS
U D 5'	FAULT, SHOWING AMOUNT OF DISPLACEMENT
	STRIKE AND DIP OF JOINTS

Note: BASE FROM AEC GEOLOGIC MAP OF BLUEWATER AREA

Figure 2. GEOLOGIC MAP OF SECTION 31, T. 14 N., R. 10 W. AND VICINITY, HOLLY URANIUM CORPORATION, MCKINLEY COUNTY, NEW MEXICO

A thin veneer of Cretaceous Mancos shale overlies the Dakota on the subject section of land. The Mancos shale ranges from 0 to 90 feet thick.

Ore deposits in the Grants area have been found in the Todilto limestone, the Westwater sandstone member of the Morrison, the Brushy Basin member of the Morrison, and the Dakota sandstone. The target for the applicant company, at the time of writing the application, was for ore deposits in the Brushy Basin. At the time of the field examination, the applicant's representative indicated a desire to drill through the Westwater sandstone because significant discoveries of uranium had been made in that horizon about 5 miles to the northeast.

The ore deposits reported in the Dakota sandstone on the subject property were small and scattered. The deposits produced from a few tons to about 100 tons averaging about 0.20 percent U_3O_8. The mineralization seems to have been most intense near bedding planes and joint surfaces, and closely associated with carbonaceous material and limonite stain.

The mined out pits in the Dakota indicate an alignment of about N. 30° E. for the ore deposits. This alignment is nearly parallel to a north-trending joint system (Gilbey, 1953). The Dakota deposits, however, are not the targets, as they are too small and few to justify an exploration program. Deposits at depth in the Brushy Basin or Westwater are at this time only hypothetical, and, of course, it is not known if the north-trending joint system parallels the elongation of the hypothetical targets.

Many large ore bodies are being mined in the Grants district, but none of significant size is being mined in the immediate vicinity of the subject land.

The Poison Canyon area ore bodies are about 7 miles southwest of the applicant's property. The Poison Canyon sandstone, which is in the Brushy Basin, converges into the Westwater in sec. 14, T. 13 N., R. 10 W., about 1 mile west of the Poison Canyon mines. The Haystack area mines are about 4 miles south, but they are in the Todilto limestone which is not considered for exploration in this application. It is too deep to explore for and to mine the size and shape of ore bodies that could be expected in the Todilto limestone.

The Ambrosia Lake area discoveries, recently made by Sabre Uranium and other companies, are about 5 miles northeast of the subject area. The ore bodies occur in the Westwater sandstone where it is greater than 150 feet in thickness. The Westwater is not exposed on the subject section of land, but from the nearest outcrops about a mile to the south it could be expected to range from 60 to 100 feet thick.

The Dakota mine, about 3 miles east of the applicant's property, produced about 600 tons of ore prior to July 1954 from a sand lense in the Brushy Basin member of the Morrison formation.

A group of small mines about 6 miles northwest, the Alta, Evelyn, and Francis mines, have produced several hundred tons of ore from the Brushy Basin and Dakota formations.

The examining team believes that any drilling done now on the subject property would be prospecting or wildcatting. It cannot be

shown that favorable sands are present in the Brushy Basin or that the Westwater is favorable for ore deposits. At the nearest outcrop the Westwater is predominantly yellowish-orange to light brown in contrast to the more favorably altered yellowish-grey sandstone near mineralized deposits.

The examining team suggested that the applicant drill five holes to be cored through the Westwater to test the area in general. If these holes showed a favorable host rock of sufficient thickness, the application may be resubmitted. The company representative indicated that the company would be willing to carry out such a procedure.

MINABLE ORE RESERVES

There are no known uranium ore reserves on the property.

PRESENT STATUS

An access road has been built to the property, and 77 dry rotary holes have been drilled. Only four of the holes went deeper than the Dakota and of those one is reported to have penetrated the Westwater but, unfortunately, there is no information available on this hole.

There have been seven small pits excavated in and near the Dakota rim from which the past production has been taken. Presently the property is inactive and there is no equipment of any kind on it.

PROJECT PROPOSALS

The applicant proposed drilling 339 holes totaling 117,760 feet, 19 of which were to be cored through the Dakota, Brushy Basin, and Westwater formations; the remainder were to be dry rotary holes with samples of the cuttings taken at 2-foot intervals throughout their depth.

The project was proposed in three stages; in the first, holes were in seven rows 800 feet apart and 400 feet apart in the row and staggered. The rows were planned to trend N. 15° W. to more nearly crosscut the general alignment of Dakota deposits. In stage II the arrangement was to drill on 200-foot centers in geologically favorable areas found in the first stage. Stage III was planned to partially delineate ore deposits encountered by the preceding work. The holes in this stage were to be 50 to 100 feet from mineralized ones.

It was estimated that the project would cost $160,129.77.

The examining team does not believe an exploration project should be considered until the preliminary coring suggested has been finished.

CONCLUSIONS

Because there is no definite information available as to the existence and general character of the Poison Canyon and Westwater Canyon strata on the property from which an appraisal of the probabilities could be made, it was suggested the applicant core at least five holes through the Westwater. It is believed the data from these

holes will be sufficient to evaluate the property with respect to further exploration. The company's representative voiced approval of the suggestion, but pointed out that it would be some time before action could be taken because of previous commitments and the present shortage of reliable drilling contractors in the district.

RECOMMENDATIONS

It is recommended that this application be held in abeyance until the company presents more definite information regarding the buried potential ore horizons on this property.

11/7/55 sign

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

RECEIVED
OCT 31 1955

October 26, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Joint Report of Examination, DMEA Docket 3886 (Uranium), Holly Uranium Corporation, Sec. 31, T. 14 N., R. 10 W., McKinley County, New Mexico

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

The examiners conclude there is no evidence at this time that the Brushy Basin or Westwater Canyon members of the Morrison formation, which probably underlie the claims, are favorable for the occurence of uranium ore deposits.

We recommend that the application be denied without prejudice. If, at some later date, the applicant has data available for appraising the ore potential of the strata to be explored, a new application would receive proper consideration.

W. M. Traver

E. N. Harshman

Enclosures

DMEA
11-4-55

IN REPLY REFER TO:
DMEA
Date Rec'd.

RECEIVED
OCT 31 1955

OCT 25 1955

BUREAU OF MINES
Denver, Colorado

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

October 20, 1955

Memorandum

TRANSMITTED

OCT 26 1955

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Hershman
John F. Shaw

Subject: DMEA Docket 3006 (Uranium), Mally Uranium Corporation, McKinley County, New Mexico

Enclosed are the original and nine copies of a joint examination report by R. F. Albee, U. S. Geological Survey, and Glen Walker, U. S. Bureau of Mines, covering their examination of the subject property.

The applicant proposes a 3-stage program of exploration for uranium ore in the Brushy Basin and Westwater Canyon members of the Morrison formation. The program consists of 359 core and non-core holes totaling 117,750 feet of drilling. The estimated total cost of the project is $160,189.77, Government participation 75 percent.

The examiners conclude that there is no evidence that the Brushy Basin or Westwater Canyon members of the Morrison formation, which probably underlie the claims, are favorable for the occurrence of uranium ore deposits. They recommend that the application be held in abeyance until the applicant drills at least five holes on the property to determine the ore potential of the Brushy Basin and Westwater Canyon strata. It may be as much as six months before this drilling can be completed.

We do not concur with this recommendation, and based on the unknown character of the potential ore horizons beneath the claims, we recommend that the application be denied without prejudice. The applicant should be informed that when data are available for appraising the ore potential of the strata to be explored, a new application may be submitted for consideration by DMEA.

DMEA
11-4-55

E. N. Hershman
Member, Field Team

John F. Shaw
Supervising Mining Engineer

Enclosures (10)
EHHershman:arh

RECEIVED
OCT 3 1 1955
RECEIVED
OCT 14 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

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

October 12, 1955

TRANSMITTED
OCT 26 1955

Memorandum

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

From: D. D. Haynes for J. W. Hasler

Subject: DMEA 3886, Holly Uranium Corporation, sec. 31, T. 14 N., R. 10 W., N.M.P.M., McKinley County, New Mexico

Transmitted herewith is the draft of a joint report by H. F. Albee and Glen Walker, covering a field examination of the above-referenced property. We are returning herewith the brochure covering this application and 12 copies of figure 2.

The subject property lies in an area which has had considerable production from the Dakota sandstone, but to date no production has come from the Poison Canyon sandstone or the Westwater Canyon sandstone.

As there are no known ore bodies within four to five miles of the subject property and no exploratory drilling has been done through the Poison Canyon or Westwater Sandstone members in this vicinity, it was decided that any exploration undertaken would be of a prospecting nature.

Therefore, it was suggested that the applicant core drill at least five holes through the Westwater sandstone. It is believed the data from these cored holes will be sufficient to evaluate the property with respect to further exploration. The company's representative voiced approval of the suggestion, but pointed out that it would be some time before the drilling could be completed.

11-4-55

It is recommended that this application be held in abeyance until the company presents more definite information on the underlying ore horizons, which will be obtained from these core holes.

D. D. Haynes
D. D. Haynes
Geologist

DDH/mlr

Enclosures

RECEIVED
OCT 31 1955

UNITED STATES DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINING TEAM
REGION III

DMEA 3886

Holly Uranium Corporation, Grants, New Mexico

Sec. 31, T. 14 N., R. 10 W., NMPM

McKinley County, New Mexico

Uranium

Geologic Report
by
Howard F. Albee

Engineering Report
by
Glen Walker

October 1955

11-4-55

CONTENTS

	Page
Summary and introduction.	1
Acknowledgments	2
Location, topography, and physical features	2
History, production, and ownership.	3
Geology and ore deposits.	4
Minable ore reserves.	7
Present status.	7
Project proposals	8
Conclusions	8
Recommendations	9

ILLUSTRATIONS

Figure		Follows page
1	Location map, Holly Uranium Corporation, Section 31, T. 14 N., R. 10 W., N.M.P.M., McKinley County, New Mexico.	2
2	Geologic map of Section 31, T. 14 N., R. 10 W. and vicinity, Holly Uranium Corporation, McKinley County, New Mexico.	4

RECEIVED
OCT 3 1 1955

DMEA 3886
HOLLY URANIUM CORPORATION
GRANTS, NEW MEXICO

SUMMARY AND INTRODUCTION

The Holly Uranium Corporation, Grants, New Mexico, requested assistance in exploration for uranium ore on sec. 31, T. 14 N., R. 10 W., N.M.P.M., McKinley County, New Mexico.

The applicant proposed drilling 359 dry rotary core and non-core holes totaling 117,760 feet. This work was to be done in three stages, the first consisted of 79 holes for a total of 26,240 feet. Ten of these holes were to be cored through the Dakota, Brushy Basin, and Westwater Canyon strata. The first stage holes were located in seven rows 800 feet apart with holes 400 feet apart staggered in the rows. In the second stage it was estimated that 130 non-core holes totaling 41,600 feet would be necessary to delineate favorable areas found in stage I. These holes were to be placed on 200-foot centers about favorable stage I holes. Stage III consisted of 150 non-core holes totaling 49,920 feet, the location of which were 50 to 100 feet from mineralized holes found during stages I and II. It was estimated the project would cost $160,129.77, or $1.36 per foot, which is a reasonable figure.

An examination was made of the property on August 23, 1955, by a Region III examining team composed of H. F. Albee, USGS, and Glen Walker, USBM.

Because the applicant could not produce sufficient evidence that the potential host rocks exist on his property, it was suggested, and he concurred, that at least five core holes be drilled, at the expense of the applicant, through the Westwater Canyon member of the Jurassic Morrison formation.

It is recommended that this application be held in abeyance until the suggested prospect drilling is completed and evaluated. This period may be six months due to previous commitments and the increased demand for drilling equipment in the district.

ACKNOWLEDGMENTS

W. A. Carlson, geologist for Holly Uranium Corp., guided the examining team and provided pertinent information. R. Thaden and E. Ostling, USGS field geologists, aided the examination with information and opinions. The Atomic Energy Commission was consulted during the course of the field examination.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The property, locally known as the Silver Spur, lies in sec. 31, T. 14 N., R. 10 W., N.M.P.M., about 9 miles east and north of Prewitt, New Mexico, the nearest town (fig. 1). The Anaconda Copper Mining Company's uranium mill and buying station is in Bluewater, New Mexico, about 15 miles south of the property. Albuquerque, the principal supply point in New Mexico, is about 90 miles east of Bluewater over U. S. Highway 66 or the Santa Fe Railroad.

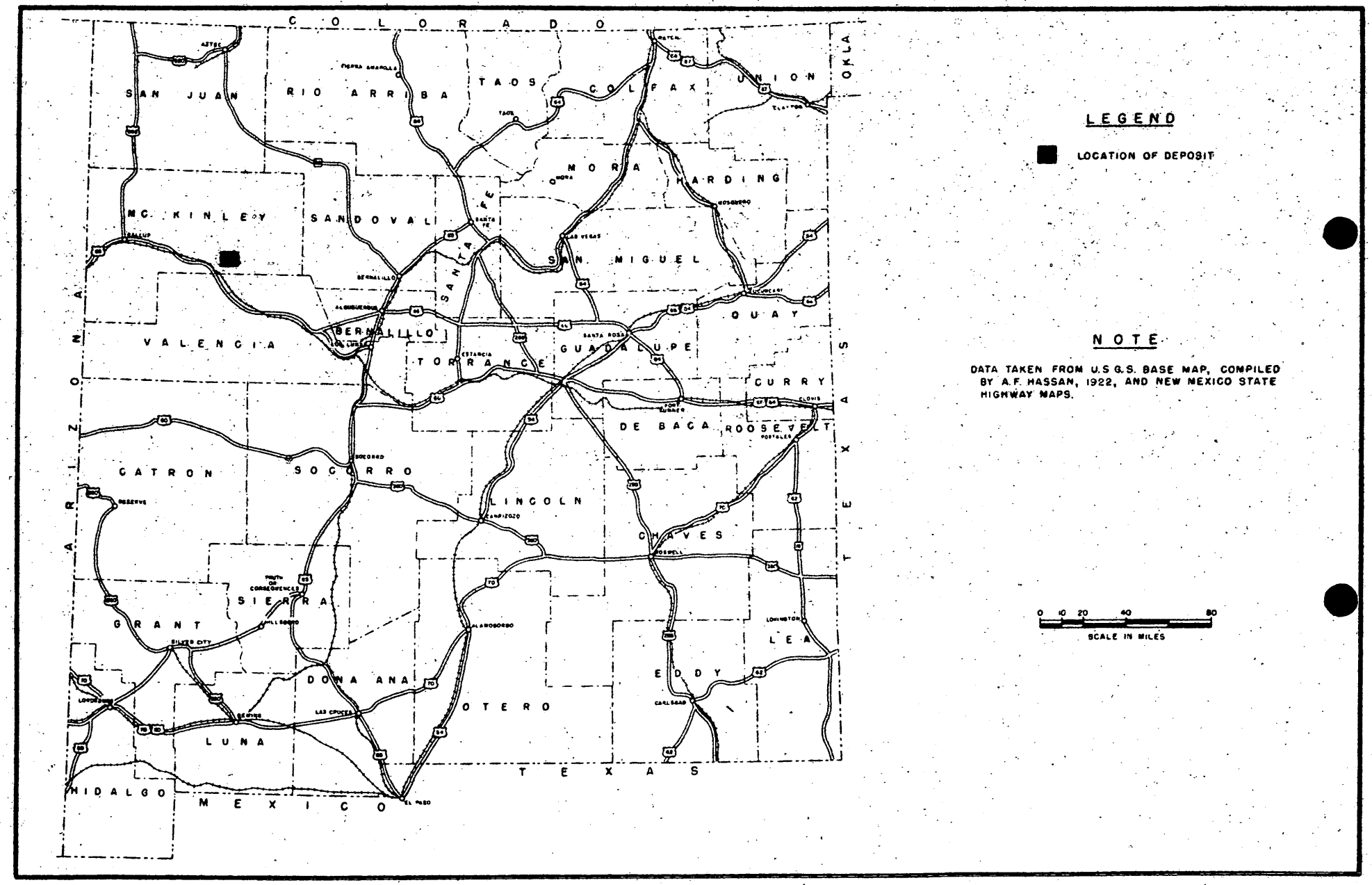


FIGURE 1. LOCATION MAP, HOLLY URANIUM CORPORATION, SECTION 31, T. 14 N., R. 10 W., N.M.P.M.
McKINLEY COUNTY, NEW MEXICO. DMEA 3886

The topography is that of the usual mesa, relatively flat but locally rolling. The relief is not abrupt except along the south side of the property where the Dakota and upper Brushy Basin form a bluff about 150 feet high.

Much of the property is covered by a thick growth of pinon and cedar that does not attain sizes sufficient for mine use.

The climate is semi-arid to arid marked by extremes in temperature and precipitation during both summer and winter. Very little lost time is experienced by surface operations in either season, however.

Water for any use would have to be hauled from Prewitt or Bluewater over fair roads and trails.

Power for any type operation would have to be furnished by internal combustion engines.

Common and unskilled labor is reasonably plentiful, but experienced underground miners are very few in the district.

HISTORY, PRODUCTION, AND OWNERSHIP

The property was originally used for grazing; the uranium ore mining rights were conveyed by a lease from Annie May Berryhill to Lawrence Elkins and Duane Berryhill in November 1953, who, in turn, gave a sublease to Four Corners Exploration Company, who finally sold their interests to Holly Uranium Corporation.

There is reported to have been a uranium ore production of about 1,100 tons from at least seven scattered small deposits along the Cretaceous Dakota rim. The grade of this material is reported to be

about 0.20 percent U_3O_8. There has been no production from either the Poison Canyon or the Westwater Canyon strata of the Jurassic Morrison. These rocks do not crop out on the property and they have not been prospected by drilling.

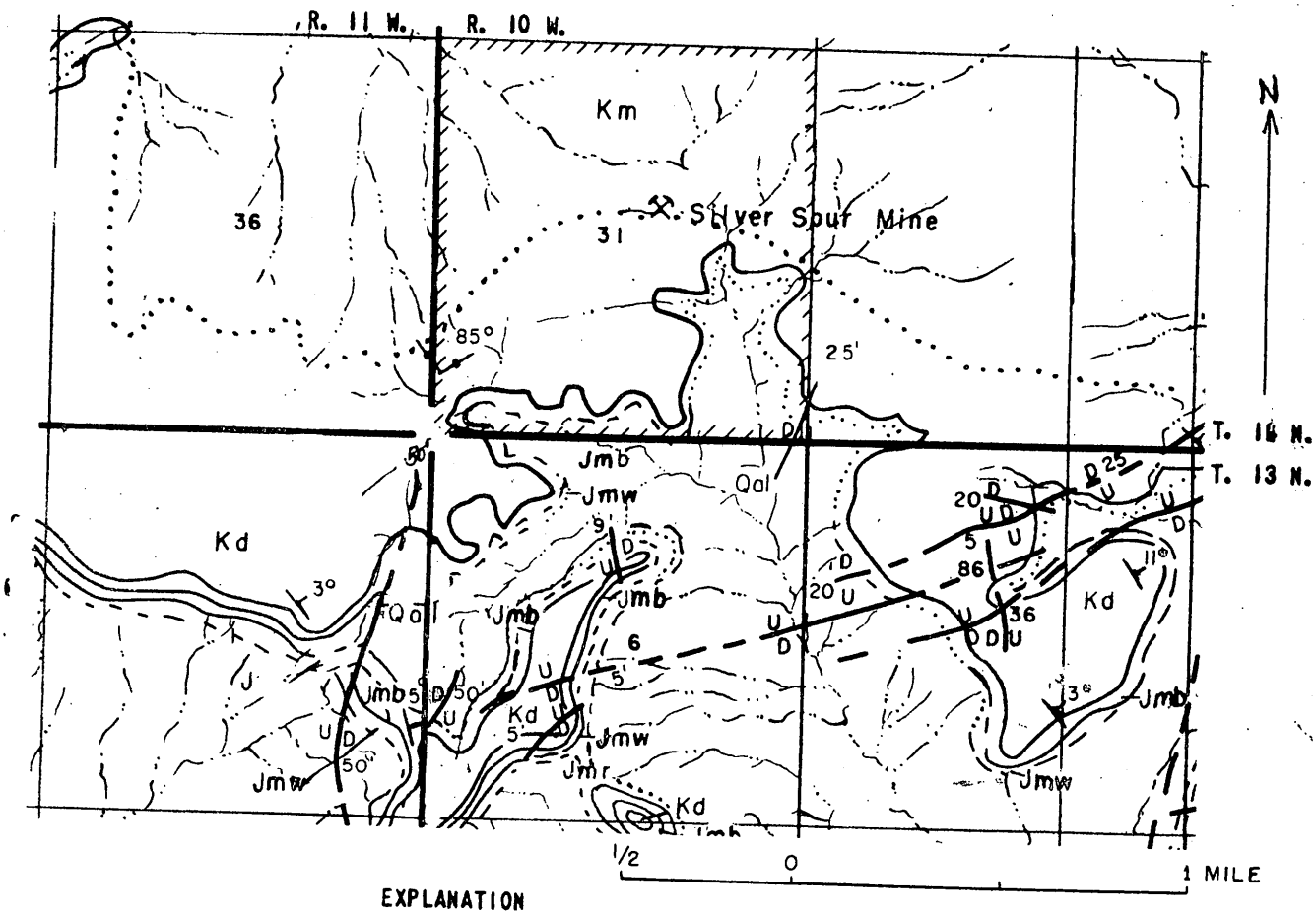
GEOLOGY AND ORE DEPOSITS

The subject section of land (sec. 31, T. 14 N., R. 10 W., N.M.P.M., McKinley County, New Mexico) is on the northwest edge of the Zuni uplift. Except locally where disturbed by faults, all the rocks strike about N. 60° W., which is the trend of the Zuni uplift, and dip about 2-1/2° to the northeast.

The rocks exposed on the subject area are, from oldest to youngest, the Brushy Basin member of the Jurassic Morrison formation, the Cretaceous Dakota sandstone, and the Cretaceous Mancos shale (fig. 2).

The Brushy Basin is composed of gray and green, soft, gypsiferous mudstone sporadically interbedded with lenses of crossbedded, coarse-grained to conglomeratic sandstone. It weathers to form a steep slope littered with huge talus blocks of Dakota sandstone. The Brushy Basin and the underlying Westwater sandstone commonly intertongue.

The Dakota sandstone unconformably overlies the Morrison formation. It is usually a gray to buff, medium-grained, cliff-forming sandstone. The lower portion, however, commonly is composed of dark gray and green shale and some carbonaceous shale or coal. The base of the lowest carboniferous shale, where present, is accepted as the base of the Dakota. The Dakota in this area ranges from 70 feet to 85 feet thick.



EXPLANATION

Qal	QUATERNARY ALLUVIUM
Km	CRETACEOUS MANCOS SHALE
Kd	CRETACEOUS DAKOTA SANDSTONE
Jmb	BRUSHY BASIN MEMBER OF THE JURASSIC MORRISON FORMATION
Jmw	WESTWATER SANDSTONE MEMBER OF THE JURASSIC MORRISON FORMATION
Jmr	RECAPTURE SHALE MEMBER OF THE JURASSIC MORRISON FORMATION
	FORMATION CONTACT
	FORMATION CONTACT INFERRED
	FORMATION CONTACT IN DOUBT
85°	STRIKE AND DIP OF BEDS
U D 5'	FAULT, SHOWING AMOUNT OF DISPLACEMENT
	STRIKE AND DIP OF JOINTS

Note: BASE FROM AEC GEOLOGIC MAP OF BLUEWATER AREA

Figure 2. GEOLOGIC MAP OF SECTION 31, T. 14 N., R. 10 W. AND VICINITY, HOLLY URANIUM CORPORATION, MCKINLEY COUNTY, NEW MEXICO

A thin veneer of Cretaceous Mancos shale overlies the Dakota on the subject section of land. The Mancos shale ranges from 0 to 90 feet thick.

Ore deposits in the Grants area have been found in the Todilto limestone, the Westwater sandstone member of the Morrison, the Brushy Basin member of the Morrison, and the Dakota sandstone. The target for the applicant company, at the time of writing the application, was for ore deposits in the Brushy Basin. At the time of the field examination, the applicant's representative indicated a desire to drill through the Westwater sandstone because significant discoveries of uranium had been made in that horizon about 5 miles to the northeast.

The ore deposits reported in the Dakota sandstone on the subject property were small and scattered. The deposits produced from a few tons to about 100 tons averaging about 0.20 percent U_3O_8. The mineralization seems to have been most intense near bedding planes and joint surfaces, and closely associated with carbonaceous material and limonite stain.

The mined out pits in the Dakota indicate an alignment of about N. 30° E. for the ore deposits. This alignment is nearly parallel to a north-trending joint system (Gilkey, 1953). The Dakota deposits, however, are not the targets, as they are too small and few to justify an exploration program. Deposits at depth in the Brushy Basin or Westwater are at this time only hypothetical, and, of course, it is not known if the north-trending joint system parallels the elongation of the hypothetical targets.

Many large ore bodies are being mined in the Grants district, but none of significant size is being mined in the immediate vicinity of the subject land.

The Poison Canyon area ore bodies areabout 7 miles southwest of the applicant's property. The Poison Canyon sandstone, which is in the Brushy Basin, converges into the Westwater in sec. 14, T. 13 N., R. 10 W., about 1 mile west of the Poison Canyon mines. The Haystack area mines are about 4 miles south, but they are in the Todilto limestone which is not considered for exploration in this application. It is too deep to explore for and to mine the size and shape of ore bodies that could be expected in the Todilto limestone.

The Ambrosia Lake area discoveries, recently made by Sabre Uranium and other companies, are about 5 miles northeast of the subject area. The ore bodies occur in the Westwater sandstone where it is greater than 150 feet in thickness. The Westwater is not exposed on the subject section of land, but from the nearest outcrops about a mile to the south it could be expected to range from 60 to 100 feet thick.

The Dakota mine, about 3 miles east of the applicant's property, produced about 600 tons of ore prior to July 1954 from a sand lense in the Brushy Basin member of the Morrison formation.

A group of small mines about 6 miles northwest, the Alta, Evelyn, and Francis mines, have produced several hundred tons of ore from the Brushy Basin and Dakota formations.

The examining team believes that any drilling done now on the subject property would be prospecting or wildcatting. It cannot be

shown that favorable sands are present in the Brushy Basin or that the Westwater is favorable for ore deposits. At the nearest outcrop the Westwater is predominantly yellowish-orange to light brown in contrast to the more favorably altered yellowish-gray sandstone near mineralized deposits.

The examining team suggested that the applicant drill five holes to be cored through the Westwater to test the area in general. If these holes showed a favorable host rock of sufficient thickness, the application may be resubmitted. The company representative indicated that the company would be willing to carry out such a procedure.

MINABLE ORE RESERVES

There are no known uranium ore reserves on the property.

PRESENT STATUS

An access road has been built to the property, and 77 dry rotary holes have been drilled. Only four of the holes went deeper than the Dakota and of these one is reported to have penetrated the Westwater but, unfortunately, there is no information available on this hole.

There have been seven small pits excavated in and near the Dakota rim from which the past production has been taken. Rresently the property is inactive and there is no equipment of any kind on it.

PROJECT PROPOSALS

The applicant proposed drilling 359 holes totaling 117,760 feet, 10 of which were to be cored through the Dakota, Brushy Basin, and Westwater formations; the remainder were to be dry rotary holes with samples of the cuttings taken at 2-foot intervals throughout their depth.

The project was proposed in three stages; in the first, holes were in seven rows 800 feet apart and 400 feet apart in the row and staggered. The rows were planned to trend N. 15° W. to more nearly crosscut the general alignment of Dakota deposits. In stage II the arrangement was to drill on 200-foot centers in geologically favorable areas found in the first stage. Stage III was planned to partially delineate ore deposits encountered by the preceding work. The holes in this stage were to be 50 to 100 feet from mineralized ones.

It was estimated that the project would cost $160,129.77.

The examining team does not believe an exploration project should be considered until the preliminary coring suggested has been finished.

CONCLUSIONS

Because there is no definite information available as to the existence and general character of the Poison Canyon and Westwater Canyon strata on the property from which an appraisal of the probabilities could be made, it was suggested the applicant core at least five holes through the Westwater. It is believed the data from these

holes will be sufficient to evaluate the property with respect to further exploration. The company's representative voiced approval of the suggestion, but pointed out that it would be some time before action could be taken because of previous commitments and the present shortage of reliable drilling contractors in the district.

RECOMMENDATIONS

It is recommended that this application be held in abeyance until the company presents more definite information regarding the buried potential ore horizons on this property.

8-4-55
RM

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

RECEIVED
AUG - 4 1955

224 New Customhouse
Denver 2, Colorado

July 29, 1955

Memorandum

To: J. F. Shaw (2) w/Brochure
J. W. Hasler

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3306 (Uranium), Molly Uranium Corporation, Silver Spur mine, McKinley County, New Mexico

Enclosed is the subject application in the amount of $160,129.77.

A field examination and suitable report are required.

Attached is a copy for your information of a letter from the Chairman of the Operating Committee and memoranda from the Uranium Commodity Committee.

W. M. Traver

W. M. Traver

Enclosures

HMC:sr

cc Subject
Chairman Op. Comm. (2)
Harshman
Chron

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

RECEIVED
AUG - 4 1955

224 New Customhouse
Denver 2, Colorado

July 29, 1955

Memorandum

To: J. F. Shaw (2) w/Brochure
J. W. Hasler

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3086 (Uranium), Holly Uranium Corporation, Silver Spur mine, McKinley County, New Mexico

Enclosed is the subject application in the amount of $160,129.77.

A field examination and suitable report are required.

Attached is a copy for your information of a letter from the Chairman of the Operating Committee and memoranda from the Uranium Commodity Committee.

W. M. Traver

W. M. Traver

Enclosures

HMC:sr

cc Subject
Chairman Op. Comm. (2)
Harshman
Chron

700

Surname copy

Ching
Ellis
Geehan
Kulsgaard
Martin
Johnson

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

JUL 25 1955

Mr. Edgar F. Dutts, Vice-President
Holly Uranium Corporation
Post Office Box 86
Grants, New Mexico

Re: Docket No. DMEA-3886 (Uranium)
Silver Spur Mine
McKinley County, New Mexico

Dear Mr. Dutts:

The application for assistance in exploring the subject property in McKinley County, New Mexico, under the captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred to the Executive Officer of Region III at the following address:

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

The Regional Office will contact you in regard to your project if additional information is required.

Sincerely yours,

C. O. Mittendorf

Administrator

MChing/gla
7-21-55
cc to: Admr.'s Reading File
Docket
Code 700
Mr. Ching
DMEA Field Team, Region III (2)

R.S.

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

Surname copy

Ching
Ellis
Martin
Ferguson

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

JUL 2 5 1955

Re: Docket No. DMEA-3886 (Uranium)
Holly Uranium Corporation
Silver Spur Mine
McKinley County, New Mexico

Dear Mr. Traver:

The subject application is being referred to you for investigation, a field examination if warranted, and recommendation. A copy of the application was retained by your office.

Enclosed are two copies each of comments and recommendations by John E. Crawford and Thor H. Kiilsgaard of the Uranium Commodity Committee, dated July 11 and July 18, 1955, respectively.

In the event a contract is recommended, an Owner's Consent to Lien would be required from each of the following:

1. Annie May Berryhill - Owner and Lessor
2. Duane Berryhill and wife) Sublessors
   Lawrence Elkins and wife)
3. Four Corners Exploration Co. - Seller.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee (24B)

Enclosures

APPROVED:

/s/ Robert W. Geehan (24B)
Member, Bureau of Mines

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

MChing/gla
7-21-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Ching

R.C.G.

7/19/55 gla

IN REPLY REFER TO:

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

July 18, 1955

Memorandum

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

From: Thor H. Kiilsgaard, U. S. Geological Survey

Subject: Review of application, Holly Uranium Corporation, Silver Spur mine, McKinley County, New Mexico, DMEA Docket 3886.

The applicant proposes to explore the Silver Spur mine, Section 31, T. 14 N., R. 10 W., McKinley County, New Mexico, by a 3-phase drilling program, the drilling footage to aggregate 117,760 feet and the estimated cost to be $160,129.77.

Section 31 is on the northeast flank of the Zuni uplift. The greater part of the section is overlain by the Mancos shale which ranges in thickness from a featheredge, at the southern edge of the outcrop, to 90 feet in the northeast corner of the section. Underlying the Mancos is the Dakota sandstone, which ranges from 70 to 85 feet in thickness. Below the Dakota is the Brushy Basin member of the Morrison formation. Regional dip of the formations is to the northeast at angles of 2 to $2\frac{1}{2}$ degrees. The proposed program will explore the Dakota formation and the underlying Brushy Basin member. Some of the proposed holes will drill through the Westwater Canyon member underlying the Brushy Basin. Average depth of holes in Stage I is 332 feet.

The map attached to the application shows that 77 holes have previously been drilled in section 31. Of these, it is reported that 55 of the holes bottomed at the Dakota-Brushy Basin contact and that 51 of the holes cut uranium mineralization. In addition, the property has been explored by several open cuts which have produced a total of 973 tons of ore from which has been extracted 4,094 pounds of U_3O_8. This uranium production does not include that taken from 50 tons of ore shipped during May 1955, and of which the uranium content is not known. All production has been from the Dakota sandstone, although two holes have encountered uranium mineralization in the Brushy Basin member.

On the strength of the production record and the number of holes that have intersected uranium, the property has considerable merit. It may be, however, overly ambitious to drill out the entire

section on the basis of information now in hand. Perhaps more should be learned of mineral trends and size of deposits within the section before such a large program is undertaken.

It is recommended that the application be forwarded to the field for a Field Team report. Field examiners should check the core logs of all holes previously drilled on the section to determine if the reported uranium mineralization is sufficient to warrant further drilling. They might also check on the reported joint trend of N. 30° E. and its parallelism to known ore deposits, and to the reported parallelism to ore deposits referred to under Item 6, Point 4 in the application. Such trends could have a direct bearing on the location of the proposed fences of holes. If a contract is recommended it is suggested that a more modified project be proposed, unless field examination should prove the applicant's program to be warranted.

Thor H. Kiilsgaard

Thor H. Kiilsgaard

IN REPLY REFER TO:

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

July 18, 1955

Memorandum

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

From: Thor N. Killingstad, U. S. Geological Survey

Subject: Review of application, Kelly Uranium Corporation, Silver Spur mine, McKinley County, New Mexico, DMEA Docket 3886.

The applicant proposes to explore the Silver Spur mine, Section 31, T. 14 N., R. 10 W., McKinley County, New Mexico, by a 3-phase drilling program, the drilling footage to aggregate 117,760 feet and the estimated cost to be $160,129.77.

Section 31 is on the northeast flank of the Zuni uplift. The greater part of the section is overlain by the Mancos shale which ranges in thickness from a featheredge, at the southern edge of the outcrop, to 90 feet in the northeast corner of the section. Underlying the Mancos is the Dakota sandstone, which ranges from 70 to 85 feet in thickness. Below the Dakota is the Brushy Basin member of the Morrison formation. Regional dip of the formations is to the northeast at angles of 2 to 4½ degrees. The proposed program will explore the Dakota formation and the underlying Brushy Basin member. Some of the proposed holes will drill through the Westwater Canyon member underlying the Brushy Basin. Average depth of holes in Stage I is 332 feet.

The map attached to the application shows that 77 holes have previously been drilled in section 31. Of these, it is reported that 55 of the holes bottomed at the Dakota-Brushy Basin contact and that 51 of the holes cut uranium mineralization. In addition, the property has been explored by several open cuts which have produced a total of 973 tons of ore from which has been extracted 4,094 pounds of U_3O_8. This uranium production does not include that taken from 50 tons of ore shipped during May 1955, and of which the uranium content is not known. All production has been from the Dakota sandstone, although two holes have encountered uranium mineralization in the Brushy Basin member.

On the strength of the production record and the number of holes that have intersected uranium, the property has considerable merit. It may be, however, overly ambitious to drill out the entire

section on the basis of information now in hand. Perhaps more should be learned of mineral trends and size of deposits within the section before such a large program is undertaken.

It is recommended that the application be forwarded to the field for a Field Team report. Field examiners should check the core logs of all holes previously drilled on the section to determine if the reported uranium mineralization is sufficient to warrant further drilling. They might also check on the reported joint trend of N. 30° E. and its parallelism to known ore deposits, and to the reported parallelism to ore deposits referred to under Item 6, Point 4 in the application. Such trends could have a direct bearing on the location of the proposed fences of holes. If a contract is recommended it is suggested that a more modified project be proposed, unless field examination should prove the applicant's program to be warranted.

Thor H. Kiilsgaard

THKiilsgaard:iml
G-7/18/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Nested, 3210

7/12/55 gla

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

RECEIVED
JUL 12 1955

July 11, 1955

Memorandum

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

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Application for assistance, DMEA Docket 3886, Holly Uranium Corporation, McKinley County, New Mexico

I have reviewed the attached application for assistance, Holly Uranium Corporation, DMEA Docket 3886; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We suggest that the application be referred to the Field Team for examination and report, and that the Field Team be requested to consult with Ernest R. Gordon, Atomic Energy Commission, Grand Junction, Colorado.

John E. Crawford
John E. Crawford

Attachment

July 5, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

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

DMEA-3886 Holly Uranium Corporation

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

Holly Uranium Corp.
Box 86
Grants, New Mexico

July 5, 1955
Subject: DMEA-3886
Re: Exploration Assistance
Silver Spur Mining Property

Gentlemen:

The receipt of your application dated June 27, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3886 and referred to the Rare and Miscellaneous Metals Division.

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

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

RECEIVED
JUL - 5 1955

224 New Customhouse
Denver 2, Colorado

June 30, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Uranium Application of the Holly Uranium Corporation on Sec. 31, T-14-N, R-10-W, McKinley County, New Mexico

Enclosed are three copies of the subject application in the amount of $160,129.77.

It is noted that the forms MF-103 include nothing but the signature and date. A review of the application shows that a written agreement has been made for the Four Corners Exploration Company, who hold the sub-lease, to perform all exploratory drilling at an agreed cost. This cost may or may not be agreeable to DMEA.

One copy of the application is being retained in our file.

W. M. Traver

W. M. Traver

Enclosures

DMEA
Date Rec'd.
JUN 30 1955
BUREAU OF MINES
Denver, Colorado

Grants, New Mexico
June 27, 1955

RECEIVED
JUL - 5 1955

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

Dear Mr. King:

Four copies of an application for DMEA assistance in exploring section 31, T. 14 N., R. 10 W., N.M.P.M. for uranium ore bodies are attached. Please note my signature on each of the four application forms (MF-103).

Information regarding property description and nature of exploration program together with cost estimates are described on separate sheets.

Sincerely,

Edgar B. Butts

Edgar B. Butts, Vice-president
Holly Uranium Corporation

EBB/crp

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DMEA
Date Rec'd.
JUN 30 1955

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

RECEIVED
JUL - 5 1955
BUREAU OF MINES
Denver, Colorado

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. 3886
Metal or Mineral Uranium
Date Received 7-5-55
Estimated Cost $160,129.77
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: _____

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

.....

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☐ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated June 27, 1955

Holly Uranium Corporation
(Applicant)

By E B Butts

Edgar B. Butts

Vice-president

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

RECEIVED
JUL - 5 1955

DMEA Point 1

(a) Holly Uranium Corporation
Post Office Box 86
Grants, New Mexico

(b) Holly Uranium Corporation
Incorporated in State of Delaware

(c) Mr. S. B. Harris, Jr., President
122 East 42nd Street
New York 17, New York

Mr. Edgar B. Butts, Vice-president
Post Office Box 86
Grants, New Mexico

Mr. L. R. Chambers, Secretary-Treasurer
122 East 42nd Street
New York 17, New York

(d) Corporation

DMEA Point 3

(a) All of section 31, T. 14 N., R. 10 W., N. M. P. M., McKinley County, New Mexico

(b) Silver Spur Mining property

(c) Lessee

(d) Copy of Lease attached

(e) Lessee

(f) Patented land

DMEA Point 4

(a) Mineralized Dakota sandstone rim exposures, first observed in 1952 by Laurence Elkins and Duane Berryhill, were subsequently bulldozed by the parties in an effort to determine extent and character of uranium mineralization. Rim-stripping was followed by wagon-drilling behind the mineralized outcrops and a number of small ore bodies were developed. Shallow pits were stripped (figure 1) and about 1,000 tons of commercial grade ore extracted and shipped to the U. S. Atomic Energy Commission ore-buying stations at Bluewater and Shiprock, New Mexico.

Four Corners Exploration Company of Grants, New Mexico, initiated rotary drilling early in 1954 in the vicinity of the open pits and encountered additional ore-grade mineralization in the Dakota sandstone, and one of two holes drilled into the Morrison formation encountered mineralization in the Brushy Basin member.

In December, 1954, and January, 1955, 4,458 feet of rotary drilling was completed by Holly Uranium Corporation immediately to the southwest of the stripped area. Fifty-five holes were bottomed at the Dakota sandstone-Morrison formation contact. Fifty-one of the 59 holes cut uranium mineralization. On May 1, 1955, Holly Uranium Corporation initiated stripping operations at a mineralized Dakota sandstone outcrop in the southwest ¼ of the section. On June 4, 50 tons of ore were shipped to the Anaconda-operated mill at Bluewater, New Mexico. Seven holes were drilled about 100 feet behind the outcrop encountering only weak mineralization. Mining operations are continuing.

Holly has recently established elevations and horizontal control across the section. Two holes were drilled in May, 1955, into the Westwater Canyon member of the Morrison formation for stratigraphic and structural information.

The stripped area and drill holes are readily accessible from dirt roads which traverse across the section.

Point 4

(b) Production from section 31, T. 14 N., R. 10 W. (Silver Spur Mine) has been limited to the Dakota sandstone. Production to date includes 873 tons containing 3,494 pounds of U_3O_8 shipped to the Anaconda-operated mill at Bluewater, New Mexico, and about 50 tons containing 600 pounds of U_3O_8 shipped to the U. S. Atomic Energy Commission ore-buying station at Shiprock, New Mexico. Mining was resumed May 1, 1955, and 50 tons of ore were shipped to the Anaconda-operated mill on June 4th.

DMEA Point 4, continued

Recent drilling to the southwest of the stripped area shows presence of additional uranium mineralization and small ore deposits in the Dakota sandstone.

Point 4

(c) Section 31, T. 14 N., R. 10 W., is situated on the northeast flank of the Zuni Uplift. Outcropping rock units are the upper portion of the Brushy Basin member of the Morrison formation of Jurassic age and the Dakota sandstone and Mancos shale of upper Cretaceous age. Brushy Basin mudstone and sandstone lenses are exposed only on the eroded valley slopes along the southern margin of the section (figure 1). The Dakota sandstone and a thin veneer of Mancos shale form the gently, north-sloping, low relief surface that constitutes the remainder of the section. Vegetation on the back slopes consists of grasses and patches of juniper and pinon pine.

Correlation of rim observations and of subsurface drilling information from section 31 and adjacent sections indicate the dip of the rocks to be 2° to 2½° N. 27° E. A number of northeast to northwest-trending faults with displacements of 20 feet or less cut the Dakota sandstone outcrops along the south margin of the section. Drilling may show presence of other faults with greater displacements. Faulting is intense in sections adjacent to section 31.

Examination of drill hole cuttings in section 31, T. 14 N., R. 11 W., and study of columnar sections measured along rim exposures in section 35, T. 13 N., R. 11 W., section 31, T. 14 N., R. 10 W., section 1, T. 13 N., R. 11 W., and sections 5, 6, and 19, T. 13 N., R. 10 W. reveal the Dakota sandstone to average 70 feet to 85 feet in thickness with the backslopes mantled by gray-brown shales and thin-bedded, fine-grained sandstones of the Mancos formation ranging from a featheredge to 60 feet in thickness. It is estimated that the Mancos formation is about 90 feet thick in the extreme northeast portion of section 31.

Five holes drilled in section 36, T. 14 N., R. 11 W. bottomed in the Brushy Basin and Westwater Canyon members of the Morrison formation. Information derived from the cuttings together with information obtained from the measured columnar sections show considerable variations in stratigraphic position and thickness of Brushy Basin sandstone units implying lensing and grading with mudstone units and also with the underlying Westwater Canyon sandstone. Rapid pinchouts of the Brushy Basin sandstone units

DMEA Point 4, continued

can be expected throughout section 31. Thicknesses of the sandstone lenses range up to 60 feet in the drill holes and measured sections. Sandstone textures varied from fine-grained to very coarse with local conglomerate lenses. Carbon trash was observed in a number of measured sections.

Yellow secondary uranium mineralization (identified as meta-tyuyamunite) was first observed in Dakota sandstone outcroppings in the south ½ section 31. Development work (rim-stripping) and rotary drilling behind the rim indicated presence of small, commercial deposits. Stripping operations reveal that the ore in commonly confined to a medium-to coarse-grained, limonite-stained, well-sorted sandstone with only minor amounts of cross-stratification, and present 10 feet to 50 feet above the base of the formation. The uranium mineralization is commonly associated with bedding planes containing carbon debris and with joint surfaces. Dissemination of uranium into the sandstone is more apparent near bedding planes and joint surfaces. Intense limonite coloration is associated with the uranium deposits. Plotting of known ore and mineral deposits shows parallelism to a secondary joint trend (N. 30° E.).

Only a very limited portion of Dakota sandstone has been explored for uranium potential, and no exploration has been initiated in the Morrison formation.

Exploration for uranium deposits in the Morrison formation in section 31, T. 14 N., R. 10 W. is felt warranted because of

1. Presence of uranium ore deposits in the overlying Dakota sandstone.

2. Rapid lateral variations in sandstone thickness and texture of Brushy Basin units as determined from rim observations and examinations of drill hole cuttings.

3. Presence of lithologic characteristics associated with sandstone uranium deposits in adjacent areas (carbon debris; medium-to coarse-grained sandstone textures; mudstone lenses, splits, and galls; cross-straticication; local strong limonite coloration).

4. High intensity of fracturing observed in Dakota sandstone.

5. Proximity to intense faulting in adjacent section.

DMEA Point 4, continued

6. Strong parallelism of uranium deposits in section 19, T. 13 N., R. 10 W., section 31, T. 14 N., R. 10 W. (Silver Spur) and Dysart well area (section 11, T. 14 N., R. 10 W.) to the northeast-trending deposits in Poison Canyon-San Mateo Valley area (T. 13 N., R. 9 and 10 W.).

Point 4

(d) The proposed drilling area, section 31, T. 14 N., R. 10 W., is situated within the Grants Mining District approximately 25 miles, by highway and secondary roads, northwest to Grants, New Mexico. Access to the property is obtained by following U. S. Highway 66 1.8 miles southeast from Prewitt, New Mexico, then turning northeast traversing 5 miles on dirt road leading to Haystack Butte and to the large limestone mining operation of Haystack Mountain Development Company, and then continuing north on dirt road for an additional 4 miles to the stripping area on the section. The Anaconda-operated uranium mill at Bluewater, New Mexico, is 9 miles south of section 31.

Point 4

(e) Technical and semi-technical personnel including one geologist, one engineer, and 2 field assistants will be supplied by Holly Uranium Corporation.

Materials in the form of 2 rotary drill rigs and other drilling supplies will be supplied by the contractor. Supplies and equipment necessary for sampling and radiometric logging will be furnished by Holly Uranium Corporation.

Water necessary for drilling operations can be obtained at the Anaconda Copper Mining Company uranium mill site approximately 9 miles south of section 31.

DMEA Point 5

(a) Uranium-bearing minerals

Point 5

(b) The proposed exploration program in section 31, T. 14 N., R. 10 W. will test, by drilling, the upper portion of the Morrison formation and the Dakota sandstone for uranium deposits. Drilling is suggested in three phases.

Phase I

Seven drill lines trending N. 15° W. and spaced 600 feet apart have been superimposed across the section. Initial drill hole spacing within the drill rows will be 400 feet

DMA Point 5, continued

with the holes staggered on adjacent drill lines to better explore ground with a minimum number of holes (Figure 1). The N. 15° E. trend of the drill rows was selected to better intercept an assumed easterly trend of the Morrison formation sediments, and the N. 30° E. trend of the ore deposits in the Dakota sandstone.

Phase I will require seventy-nine holes totaling 26,240 feet. Average hole depth will be 332 feet. Ten core holes will be drilled at the onset of exploration (nos. 1-4, 1-17, 1-24, 1-28, 1-44, 1-55, 1-59, 1-63, 1-69, and 1-78) Figure 1. The Dakota sandstone and Brushy Basin and Westwater Canyon members of the Morrison formation will be cored to determine lithology and lithofacie changes across the section and also to serve as a sound basis for correlation with the rotary drill holes. The remaining 69 holes will bottom in top of the Westwater Canyon member of the Morrison formation about 200 feet below the base of the Dakota sandstone.

Phase II

Phase II drilling will concentrate in areas showing highest degree of geologic favorability (intraformational sandstone channels, hydrocarbon residue, carbon debris, limonite coloration, pyrite, and uranium mineralization) as determined by Phase I drilling. It is estimated that 20 per cent of holes drilled in Phase I will cut geologically favorable ground and/or mineralization. Such areas, along and between drill rows, will be investigated with holes plotted on 200 foot centers. Eight holes per area with maximum of 130 holes totaling 41,600 feet will be required.

Phase III

Uranium mineralization encountered in the Dakota sandstone and/or Morrison formation by Phase II drilling will be offset on 100 foot and 50 foot centers. It is estimated that 20 per cent of the holes drilled in Phase II will penetrate uranium mineralization. A maximum of 6 holes will be drilled per mineralized hole discovered in Phase II. A maximum of 150 holes totaling 49,920 feet will be drilled in Phase III. This represents a maximum estimate based on very favorable results with drilling depths calculated to mineralized horizons in the Morrison formation. It is very probable that the total footage described will not be realized if earlier results are negative and mineralization is restricted to the Dakota sandstone.

DMEA Point 5, continued

Total maximum footage for the project will be 117,760 feet requiring 359 holes. Drilling depths will range between 130 feet and 565 feet. The project can be terminated or revised after completion of Phase I. The actual number of holes drilled will range between 79 and 359, the number dependent upon amount of success in locating ore deposits.

With the exception of 10 holes that will be cored in Phase I, rotary drilling using air and water (with drilling mud) as the circulating media will be employed in drilling throughout phases I, II, and III. It is suggested that air be used as the initial mode of circulation reverting to water and drilling mud only if horizons in the Morrison formation become moist or if sands are too loose for adequate circulation by air. Two test holes in the north one-half of the section indicated the possibility of encountering both above-mentioned conditions. Cuttings will be collected (2 foot intervals Phases I and II and one foot intervals Phase III) through the mineralized horizons as determined by counter placed in stream of cuttings.

All holes drilled in phases I, II, and III will be logged by a radiometric logging unit and a permanent record of the intensity of radiation will be procured and retained.

Provisions can be made to core Morrison horizons if sampling techniques described prove unacceptable or impractical.

Point 5

(c) The work will start within 30 days and be completed within 8 months from the date of an exploration project contract. Two drilling rigs will be assigned to the the project.

Point 5

(d) Since November 1, 1954, Holly Uranium Corporation has been engaged in geologic exploration, development, and mining operations in the Grants, New Mexico area. The Corporation currently is mining and shipping uranium ore from the Morrison formation at the Mesa Top Mine in section 20, T. 13 N., R. 9 W., from the Todilto limestone at the Flat Top Mine in section 30, T. 13 N., R. 9 W., and from the Dakota sandstone at the Silver Spur property (section 31, T. 14 N., R. 10 W.).

Mr. William A. Carlson, who will have direct supervision of the exploration program, served as a geologist with the U. S. Atomic Energy Commission, Grand Junction Operations Office, prior to his affiliation with Holly Uranium Corporation. While employed with the Commission, Mr. Carlson supervised reconnaissance and exploration drilling projects in Colorado, Utah, and New Mexico.

DMEA Point 5, continued

Mr. Paul E. Melancon, Director of Exploration and Development for Holly Uranium Corporation, was employed as district geologist by the U. S. Atomic Energy Commission, Grand Junction Operations Office, and as General Manager of Lea Exploration, Inc. of Grants, New Mexico, prior to his affiliation with Holly Uranium Corporation.

DMEA Point 6

(a) Holly Uranium Corporation entered into an agreement dated December 24, 1954, with Four Corners Exploration Company of Grants, New Mexico, to perform all exploratory drilling on the Silver Spur property, section 31, T. 14 N., R. 10 W., at the following price schedule.

Rotary-Plug

0-100 feet	$0.50 per foot
100-200 feet	$1.00 per foot
200-300 feet	$1.50 per foot
300-400 feet	$2.00 per foot*
400-500 feet	$2.50 per foot*
500-600 feet	$3.00 per foot*

$0.35 per foot additional will be charged where samples are required.

* Not included in agreement of December 24, 1954.

Rotary-Core

0-400 feet	$3.00 per foot
Below 400 feet	$5.00 per foot*

* Not included in agreement of December 24, 1954.

DMEX Point 6, continued

(a) Independent Contracts

Footage and Cost Distribution

Phase I Drilling

Rotary-Core

Depth Interval	Total Feet	Unit Cost	Interval Cost	
0-100 Feet	500	$3.00	$ 1,500.00	
100-200 Feet	900	$3.00	$ 2,700.00	
200-300 Feet	1000	$3.00	$ 3,000.00	
300-400 Feet	974	$3.00	$ 2,922.00	
400-500 Feet	410	$5.00	$ 2,050.00	
500-600 Feet	65	$5.00	$ 325.00	
	3,849		$12,497.00	$12,497.00

Rotary-Non Core

Depth Interval	Total Feet	Unit Cost	Interval Cost	
0-100 Feet	7404	$0.50	$ 3,702.00	
100-200 Feet	6895	$1.00	$ 6,895.00	
200-300 Feet	5590	$1.50	$ 8,335.00	
200-400 Feet	2192	$2.00	$ 4,384.00	
400-500 Feet	300	$2.50	$ 750.00	
500-600 Feet	10	$3.00	$ 30.00	
	22,391		$24,146.00	
	26,240 (total)			
Samples	690'	$0.35	$ 241.50	
			$24,387.50	$24,387.50

Total drilling and field sampling costs, Phase I $36,884.50

DMEA Point 6, continued

(a) Independent Contracts continued

Phase II Drilling

Rotary-Non Core

Depth Interval	Total Feet	Unit Cost	Interval Cost
0-100 Feet	13,007	$0.50	$ 6,503.50
100-200 Feet	12,836	$1.00	$12,836.00
200-300 Feet	10,857	$1.50	$16,285.50
300-400 Feet	4,800	$2.00	$ 9,600.00
400-500 Feet	100	$2.50	$ 250.00
	41,600		$45,475.00
Samples	1,950'	$0.35	$ 682.50

Total drilling and field sampling costs, Phase II.....$46,157.50 $46,157.50

Phase III Drilling

Rotary-Non Core

Depth Interval	Total Feet	Unit Cost	Interval Cost
0-100 Feet	15,008	$0.50	$ 7,504.00
100-200 Feet	14,837	$1.00	$14,837.00
200-300 Feet	12,857	$1.50	$19,285.50
300-400 Feet	7,218	$2.00	$14,436.00
	49,920		$56,062.50
Samples	2,250'	$0.35	$ 787.50
			$56,850.00

Total drilling and field sampling costs, Phase III $56,850.00

Total maximum footage, phases I, II, and III .....117,760.0 Feet

Total maximum drilling and sampling costs, phases I, II and III...$139,892.00

75 hours of bull-dozing at rate of $12.50 per hour required to prepare drill sites and access drill roads.....$ 937.50

Total Independent Contracts.....$140,829.50

DMEA Point 6

(b) Supervision

William A. Carlson, Geologist and Project Supervisor
Salary $625.00 per month
75 per cent of time devoted to project
Maximum salary $3750.00*

Edward Frear, Project Surveyor
Salary $583.32 per month
25 per cent of time devoted to project
Maximum salary $1166.64*

Joe Q. Babb, Project Sampler
Wage rate $1.80 per hour
100 per cent of time devoted to project
Maximum salary $2520.00*

Nick Gallegos, Helper
Wage rate $1.75 per hour
25 per cent of time devoted to project
Maximum salary ..... $ 612.50*

Salary total $8,049.14*

* Salaries based upon 8 month duration of project assuming 15,000 feet of drilling per month (2 rigs).

DMEA Point 6

(c) None

Point 6

(d) Rental and operating fee of

3 Babbel counters
1 reel and probe
1 Jones splitter
1 Laboratory pulverizer
1 Nuclear Radiometric Scaler

at $5.00 per day ..... $ 880.00

Vehicle transportation from Grants, New Mexico to section 31.

52 miles round trip per car, 2 cars, $0.07 per mile,
176 days maximum $1,281.28

DMEA Point 6, continued

(e) None

Point 6

(f) None

Point 6

(g) Nuclear Radiometric Scaler $1.00 per sample, 1,000 samples $1,000.00
Chemical assays $2.85 per sample $1,000.00
Counter repair and maintainence $20.00 per month ..... $ 160.00
New Mexico School Tax 2% independent contracts $2,802.97
Workmen's compensation, payroll taxes, liability insurance 1,126.88

Total $6,089.85

Point 6

(h) Contingencies ..... $ 3,000.00
Total maximum cost of project $160,129.77*

DMEA Point 7

(a) Yes

Point 7

(b) Holly Uranium Corporation is prepared and able to pay by money 25 per cent of gross cost of project.

* Total cost of project is based upon very favorable results and may not be realized.

PURCHASE CONTRACT

RECEIVED
JUL - 5 1956

THIS CONTRACT, made this 14th day of December, 1954, between HOLLY URANIUM CORPORATION, a corporation organized and existing under the laws of the State of Delaware and qualified as a foreign corporation under the laws of the State of New Mexico, as PURCHASER, and FOUR CORNERS EXPLORATION COMPANY, a partnership composed of F. OL MANOL AND IRVING RAPAPORT, as SELLER,

WITNESSETH:

WHEREAS the Seller is the Sublessee under a certain Sublease dated December 1, 1954, wherein Duane Berryhill and Nelda Louise Berryhill, his wife, and Lawrence Elkins and Edith L. Elkins, his wife, are Sublessors, wherein Seller has subleased from said Sublessors the right to prospect for, to mine, sell and market uranium-bearing ores in, on and under the following described lands situate in McKinley County, New Mexico, to-wit:

All of Section 31, Township 14 North, Range 10 West, N.M.P.M., and

WHERREAS Purchaser is desirous of acquiring all of the interest of Seller in said Sublease,

NOW, THEREFORE, IT IS AGREED as follows:

1. Seller has coincidentally herewith assigned to Purchaser all of its right, title and interest in and to the said Sublease hereinabove described, in consideration of the agreement of Purchaser to pay to Seller the sum of Seventy-Five Thousand Dollars ($75,000.00) as follows:

(a) Five Thousand Dollars ($5,000.00) deposit heretofore paid by Purchaser to Seller, receipt of which is hereby acknowledged by Seller.

(b) Fifteen Thousand Dollars ($15,000.00) payable upon execution of this Contract by the parties.

(c) Twenty-Seven Thousand Five Hundred Dollars ($27,500.00) on or before November 20th, 1956.

(d) The balance of Twenty-Seven Thousand Five Hundred Dollars ($27,500.00) on or before November 20th, 1957.

Deferred payments on the said purchase price shall bear no interest until the maturity date thereof, but shall bear interest thereafter at Six (6%) Percent per annum until paid.

2. The Purchaser agrees to comply with all the provisions of the Original Lease on the premises by and between Annie May Berryhill as Lessor and Duane Berryhill and Lawrence Elkins as Lessees, said Lease being dated November 30th, 1953; and amendment thereto dated December 1, 1954; and Purchaser further agrees to comply with all the provisions of the Sublease between said Duane Berryhill and Nolda Louise Berryhill, his wife, and Lawrence Elkins and Edith L. Elkins, his wife, as Sublessors, and Seller as Sublessee, said Sublease being dated December 1, 1954. In the event of default by Purchaser as to any any provisions of said Original Lease and Sublease, and in the event of failure by Purchaser to cure such default Twenty (20) days after notice of such default shall be given to Purchaser as provided by the terms of said Lease and Sublease; or in the event of default by Purchaser in payment of any installments due under this Contract, and in the event Purchaser shall remain in default in

making the payments provided for in this Contract Twenty (20) Days after notice of default mailed to Purchaser by registered mail at Purchaser's registered office in the State of New York, the Seller may at its option terminate this agreement and retain all sums theretofore paid as rental for the use of said premises, and all rights of the Purchaser in the premises hereinabove described shall thereupon cease and terminate. An affidavit of default delivered to the Escrow Agent hereinafter designated by the Seller shall constitute authorization to the said Escrow Agent to deliver to the Seller a Re-Assignment of the Sublease to the premises hereinabove described.

3. It is understood and agreed that in the event Purchaser extracts and removes from the premises hereinabove described uranium and vanadium ores of "Mine Value of Ore", as defined in the said Sublease dated December 1, 1954, including bonuses, of a value in excess of Two Hundred Thousand ($200,000.00) Dollars prior to November 20th, 1956, Purchaser shall be unconditionally obligated to make the payment of Twenty-Seven Thousand Five Hundred ($27,500.00) Dollars as provided in Paragraph 1(c) of this Contract; and in the event Purchaser extracts and removes from the premises hereinabove described "Mine Value of Ore" as defined in said Sublease, including bonuses, in excess of Four Hundred Thousand ($400,000.00) Dollars prior to November 20th, 1957, Purchaser shall be unconditionally obligated to make the payment of Twenty-Seven Thousand Five Hundred ($27,500.00) Dollars provided in Paragraph 1(d) hereof; provided, however, that in the event Purchaser does not extract and remove ore of the values hereinabove mentioned on or before the dates hereinabove mentioned, Seller's sale remedy in the event of default by

Purchaser shall be to enforce the forfeiture provisions of Pragraph 2 of this Contract.

4. It is understood and agreed that coincidental herewith Purchaser has executed a good and sufficient Re-Assignment of Sublease on the above-described premises to Purchaser, which said Re-Assignment, together with a copy of this Contract and a copy of said Sublease, shall be placed in escrow with First National Bank of Albuquerque, New Mexico, as hereby designated and appointed Escrow Agent, said Re-Assignment to be delivered by the Escrow Agent to the Purchaser upon full compliance on the part of Purchaser of all the conditions of this Contract; or in the event of default by Purchaser, said Re-Assignment shall be delivered by the Escrow Agent to the Seller, as provided in the Escrow Letter herein.

ESCROW LETTER

To First National Bank

Albuquerque, New Mexico

In re the Assignment under Contract by Four Corners Exploration Company, a partnership, Grants, New Mexico, to Holly Uranium Corporation, 122 East 42nd Street, New York 17, New York, of the Sublease hereinabove described, we hand you herewith the following papers to be placed in escrow, to-wit:

Copy of Original Lease and Amendment thereto, Annie May Berryhill to Duane Berryhill and Lawrence Elkins, dated November 30th, 1953.

Copy of Sublease, Duane Berryhill and wife and Lawrence Elkins and wife to Four Corners Exploration Company, dated December 1, 1954.

Copy of Assignment of the said Sublease dated December 14, 1954.

Re-Assignment of said Sublease.

We also hereby appoint you Escrow Agent hereunder and direct you as such Escrow Agent to collect the payments required to be paid by Purchaser, as provided in said Contract, and to place the monies so collected to the credit of Seller at Box 116, Grants, New Mexico.

In the event Purchaser shall default in making the payments set forth in the within Contract or in payment of the minimum rentals or royalties to Original Lessor and Sublessors, as provided in the said Original Lease and Sublease, and in the event, further, that Purchaser shall remain in default for a period of Twenty (20) Days after notice in writing of such default has been given to Purchaser by registered mail, as hereinabove provided, you are directed to deliver back to the Seller all of the above mentioned papers. Affidavit of the Seller as to such default on the part of the Purchaser and proof by Seller that notice by registered mail has been given to Purchaser at its registered office in the State of New York shall constitute authority for you to deliver back to Seller all of the above mentioned papers.

Upon compliance with the terms of said Contract on the part of the Purchaser, you are directed to deliver all of the above mentioned papers to the Purchaser.

WITNESS the hands and seals of the parties this 14th day of December, 1954.

ATTEST:

S/ A. H. McRae
Assistant Secretary

HOLLY URANIUM CORPORATION

By S/ S. B. Harris, Jr.

PURCHASER

STATE OF NEW MEXICO)
(ss.
COUNTY OF BERNALILLO)

On this 14th day of December, 1954, becore me personally appeared Irving Rapaport and F. O. Manol, members of the partnership of Four Corners Exploration Company, to me known to be the persons described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and dded.

WITNESS my hand and seal on this the day and year first above written.

S/ Robert Nordhaus
Notary Public

My Commission Expires:

December 11, 1957

FORT SCOTT NATIONAL BANK

S/ Irving Lagsort

S/ F. O. Hanol

S/ [illegible]

We hereby accept the appointment and designation of Escrow Agent herein and acknowledge receipt of the above mentioned papers.

_____

By _____

STATE OF NEW MEXICO)
(ss.
COUNTY OF BERNALILLO)

On this 14th day of December, 1954, before me personally appeared S. B. Harris, Jr., to me personally known, who being by me duly sworn, did say that he is President of FORT CHAMBER CORPORATION, a corporation organized under the laws of the State of Delaware, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation, by authority of its Board of Directors, and said S. B. Harris, Jr. acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS my hand and seal on this the day and year first above written.

S/ Robert Nordhaus
Notary Public

My commission expires,
December 11, 1957

L E A S E

THIS AGREEMENT made and entered into this 30th day of November, 1953, by and between ANNIE MAY BERRYHILL, hereinafter called the Lessor and DUANE BERRYHILL and LAWRENCE ELKINS, hereinafter called the Lessees.

WITNESSETH:

WHEREAS, the Lessor is the owner of uranium mineral ores in, on, and under the following described land, situated in McKinley County, New Mexico, to-wit:

TOWNSHIP 14 NORTH, RANGE 10 WEST, NMPM, SEC. 31 ALL;

WHEREAS, Lessees desire to lease and obtain the right to mine and market said uranium ores.

NOW THEREFORE THE PARTIES AGREE AS FOLLOWS:

(1) For the sum of $1.00 and other valuable considerations hereby acknowledge received, the Lessor, Leases, lots, and demises unto Lessees their successors and assigns, the right to prospect for and to mine, sell, and market any and all uranium bearing ore, in, on, and under the above described land for so long as the minimum sum of : Twelve hundred (1,200) Dollars per year in royalty or rental is paid to the Lessor. Payment of the aforementioned sum may be made in equal monthly installments. Payment shall commence one year from this date.

(2) Lessees agree to pay Lessor a royalty of 12½% of the gross proceeds of and from all uranium ores mined and obtained from and under said land during the period of this lease, said payments to be made monthly as new ores may be extracted from said land and disposed of by the Lessees. Gross proceeds are defined as money derived from the sale of uranium bearing

ores and includes the base price, any bonuses, any premiums, and any haulage allowances. Development allowances are specifically excluded from royalty payments. Monies received by the Lessor from this 12½% royalty shall apply against the guaranteed minimum advance royalty or rental referred to in the preceding paragraph. All ore mined shall be sold within two months of the time it is mined.

(3) Lessees agree to keep true records and accounts of all such uranium ores that may be taken away from said land and to render periodic accountings to Lessor thereof: Lessees to bear all expenses of every kind and nature whatsoever in connection therewith; and Lessees further agree to hold Lessor harmless from any claim or demand of any nature whatsoever because or on account of any activity or thing arising out of this lease agreement.

(4) It is agreed and understood that the Lessor does not own the surface of said property, having sold and conveyed the surface rights thereof; and further that they do not own all of the other minerals in and under said land, and that this lease covers only the uranium bearing ores. It is further agreed that Lessees, their successors and assigns, shall make arrangements with the owners of the surface to pay said owners for whatever damage is caused to the surface of the ground by reason of the mining activities carried on under this lease.

(5) This document makes void the previous lease dated January 9, 1952, between the parties hereto.

Should the Lessees apply for governmental assistance for the exploration and development of said land under the Defense Minerals Exploration Act or a similar program, the Lessor consents to sign the documents necessary for the secural of this aid.

IN WITNESS WHEREOF the parties have set their hands and seals on this the day and year first above written.

s/ Annie May Berryhill
Annie May Berryhill, Lessor

s/ Duane Berryhill
Duane Berryhill, Lessee

s/ Lawrence Elkins
Lawrence Elkins, Lessee

STATE OF NEW MEXICO)
(
COUNTY OF BERNALILLO)

On this 30th day of November, 1953, before me personally appeared ANNIE MAY BERRYHILL to me known to be the person described in and who executed the foregoing instrument and acknowledge that they executed the same as their free act and dded.

WITNESS my hand and seal on this the day and year last above written.

(SEAL)

s/ Tracy A. Sheley
Notary Public

My commission expires: Nov. 24, 1956.

STATE OF NEW MEXICO)
(
COUNTY OF VALENCIA)

On this 30th day of November, 1953, before me personally appeared DUANE BERRYHILL and LAWRENCE ELKINS to me known to be the persons described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

WITNESS my hand and seal on this the day and year last above written.

(Notarial Seal)

s/ C. V. Hale, Jr.
Notary Public

My commission expires: 9-10-55

CORRECTION LEASE

RECEIVED
JUL - 5 1955

THIS AGREEMENT, made this _____ day of _____, 1954, by and between DUANE BERRYHILL and _____ BERRYHILL, his wife, and LAWRENCE ELKINS and _____ ELKINS, his wife, as SUBLESSORS, and FOUR CORNERS EXPLORATION COMPANY, a partnership, whose members are F. O. MANOL and IRVING RAPAPORT, hereinafter sometimes called SUBLESSEE,

WITNESSETH:

THAT WHEREAS Sublessors heretofore and on November 30th, 1953, leased from Annie May Berryhill, hereinafter somethimes called Lessor, the rights to prospect for, to mine, sell and market uranium-bearing ores in, on and under the following described lands situate in McKinley County, New Mexico, to-wit:

All of Section 31, Township 14 North, Range 10 West, N.M.P.M.,

the said lease being referred to hereinafter as the Original Lease, and,

WHEREAS the parties to this instrument heretofore and on November 30th, 1953, entered into a Lease Agreement and a Supplement thereto wherein the Sublessors leased to Sublessee the rights to prospect for and to mine, sell and market uranium-bearing ores in, on and under the above described lands, and

WHEREAS it is desired to execute a Correction Agreement and Sublease which shall supersede and cancel the said Lease Agreement and Supplement dated November 30th, 1953, between the parties hereto.

NOW, THEREFORE, IT IS AGREED:

1. That the Sublessors for the sum of One Dollar ($1.00) and other

considerations, receipt of which is hereby acknowledged, have leased, let and demised and do by these presents lease, let and demise unto Sublessee, its successors and assigns, the right to prospect for and to mine, mill and market any and all uranium-bearing ores in, on and under the above described lands for so long as Sublessee shall pay, in addition to the minimum royalty or rental provided for in said Original Lease, wherein Andy Ray Berryhill was lessor, a minimum royalty or rental to Sublessors of One Thousand Two Hundred Dollars ($1,200.00) per year, payable in equal monthly installments, commencing November 30th, 1954. Sublessee, its successors and assigns, shall be privileged to pay all rentals or royalties provided for in the Original Lease, and shall furnish to Sublessors from time to time such evidence of payment to the Original Lessor of the minimum royalty or rental as may be required by Sublessors.

2. Sublessee agrees to pay to Sublessors a royalty on the ores from the sale of all uranium ores mined and obtained in, from and under the above described lands for the duration of this Sublease, based on the Mine Value of Ore as hereinafter defined, the amount thereof to be determined according to the Graduated Scale of Percentages hereinafter set forth in Subsection (a) of this paragraph; provided, however, that there shall be deducted from monthly royalty payments due Sublessors under the terms of this paragraph the amount of all rentals and royalties, minimum and percentage, paid by Sublessee to the owner of the said Original Lease on the premises and not previously credited to Sublessee under the terms of this paragraph; and provided, further, there shall be applied against the amount of monthly royalty payment due Sublessors the total of minimum rentals theretofore paid by Sublessee and not credited to Sublessee

under the terms of this paragraph; and provided, further, that percentage royalties paid by Sublessee under this paragraph, in excess of the minimum rentals provided for in Paragraph 1 hereof, shall apply against future minimum rentals which otherwise would become due.

(a) GRADUATED SCALE OF PERCENTAGE ROYALTIES

ORE LESS THAN TWENTY(20) FEET FROM THE SURFACE OF THE GROUND

ROYALTY	MINE VALUE OF ORE
19½%	$00.00 to $20.00
20%	$20.00 to $30.00
21%	$30.00 to $40.00
22%	$40.00 to $50.00
23%	$50.00 to $60.00
24%	$60.00 to $70.00
25%	$70.00 to $80.00
26%	$80.00 to $90.00
27%	$90.00 and above

ORE MORE THAN TWENTY (20) FEET FROM THE SURFACE OF THE GROUND

ROYALTY	MINE VALUE OF ORE
17½%	$00.00 to $20.00
18%	$20.00 to $30.00
19%	$30.00 to $40.00
20%	$40.00 to $50.00
21%	$50.00 to $60.00
22%	$60.00 to $70.00
23%	$70.00 to $80.00
24%	$80.00 to $90.00
25%	$90.00 and above

(b) MINE VALUE OF ORE is hereby defined as the proceeds received from the sale of ore, including in the base price of uranium and vanadium any premiums and any haulage allowances. Bonuses derived from the sale of ore shall not be included in the Mine Value of Ore. Royalties on bonuses shall be computed according to the above Graduated Scale of Percentages separately from computations of royalties on mine value of ore,

and said royalties on bonuses shall be paid separately according to the above Graduated Scale of Percentages; (it being the intention of the parties that the percentage of royalty applicable to any shipment of ore, and based on Mine Value of Ore as herein defined, shall not be increased by adding to said Mine Value of Ore the amount of any such bonus). Development allowances are specifically excluded from royalty payments. Payments of royalty shall be made monthly as new ores may be extracted from said lands and disposed of by the Sublessee.

3. The Sublessee agrees to keep true records and accounts of all such uranium ores that may be taken away from said land and to render periodic accountings to Sublessors thereof; the Sublessee is to bear all expenses of every kind and nature whatsoever because or on account of any activity or thing arizing out of this Lease Agreement. All ore shall be sold within two months of the time it is mined.

4. It is agreed and understood that Sublessors do not own the surface of said property, having sold and conveyed the surface rights thereof; and further that they do not own all of other minerals in and under said land, and that this Sublease covers only the uranium-bearing ores. It is further agreed that Sublessee, its successors and assigns, shall make arrangements with the owners of the surface to pay said owners for whatever damage is caused to the surface of the ground by reason of the mining activities carried on under this Lease. The Sublessee shall exert care to keep all cattlegates closed or shall construct proper cattle-guards to replace them.

5. Should the Sublessee apply for governmental assistance for the exploration and development of said land under the Defense Minerals Exploration Act or a similar program, the Sublessors consent to sign the documents necessary for the securing of this aid.

6. This Agreement shall be binding and inure to the benefit of the heirs, executors, administrators and assigns of the parties hereto.

7. The Lease and Supplement, dated November 30th, 1953, between Duane Berryhill and Lawrence Elkins, as Lessees, leasing to Sublessee herein the above described lands, shall henceforth be of no further force and effect.

8. All rental and royalty payments shall be made to Sublessors at _____, or at such other address as may be designated by Sublessors by notice in writing to Sublessee. In the event Sublessee shall fail to pay the minimum rentals provided for in the Original Lease and in this Sublease as the same shall become due, and shall remain in default of such payment Thirty (30) Days after notice of such default is mail to Sublessee by registered mail at _____, or to such other persons and at such other addresses as may be designated from time to time by Sublessee, its successors or assigns, by notice to Sublessors in writing at Sublessor's address designated as provided herein, then Sublessors may at their option terminate this Sublease and all of the rights of Sublessee thereunder.

IN WITNESS WHEREOF the parties have set their hands and seals on this the day and year first above written.

_____

_____

_____

_____

SUBLESSORS

FOUR CORNERS EXPLORATION COMPANY

_____

_____

SUBLESSEE

STATE OF NEW MEXICO)
(ss.
COUNTY OF _____)

On this _____ day of _____, 1954, before me personally appeared _____ _____, to me known to be the persons described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

WITNESS my hand and seal on this the day and year last above written.

_____
Notary Public

My commission expires:

_____

STATE OF NEW MEXICO)
(ss.
COUNTY OF _____)

On this _____ day of _____, 1954, before me personally appeared _____

_____,

to me known to be the persons described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

WITNESS my hand and seal on this the day and year last above written.

_____
Notary Public

My commission expires:

_____

RECEIVED
JUL - 5 1955

AMENDMENT OF LEASE

THIS AGREEMENT, made this _____ day of _____,1954, by and between ANNIE MAY BERRYHILL, a widow, as LESSOR, and DUANE BERRYHILL and LAWRENCE ELKINS, as LESSEES,

WITNESSETH:

WHEREAS Lessor heretofore and on November 30th, 1953, leased to Lessees the rights to prospect for, to mine, sell and market any and all uranium-bearing ores in, on and under the following described lands situate in McKinley County, New Mexico, to-wit:

All of section 31, Township 14 North,
Range 10 West, N.M.P.M., and

WHEREAS the parties desire to amend said Lease Agreement dated November 30th, 1953, to provide a manner of designating the address to which rentals and notices shall be sent, and to clarify certain other provisions of said Lease,

NOW, THEREFORE, IT IS AGREED:

1. All rental and royalty payments shall be made to Lessor at _____, or at such other address as may be designated by Lessor by notice in writing to Lessees, their successors or assigns.

2. In the event Lessees shall fail to pay the minimum rentals provided for in the said Lease as the same shall become due, and shall remain in default of such payment Thirty (30) Days after notice of such default is mailed to Lessees by registered mail at _____, or to such other persons and at such other addresses as may be designated from time to time by Lessees, their successors and assigns, by notice in

writing to Lessor, then Lessor may at her option terminate this Lease and all of the rights of Lessees thereunder.

3. The said Lease and this Amendment thereto shall be binding upon the heirs, executors, administrators and assigns of the parties.

4. The terms and provisions of the Original Lease dated November 30th, 1953, between the parties hereto shall otherwise remain in full force and effect.

IN WITNESS WHEREOF THE parties have set their hands and seals on this the day and year first above written.

_____

LESSOR

_____

_____

LESSEES

STATE OF NEW MEXICO)
(ss.
COUNTY OF _____)

On this _____ day of _____, 1954, before me personally appeared ANNIE MAY BERRYHILL, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that she executed the same as her free act and deed.

WITNESS my hand and seal on this the day and year last above written.

_____

Notary Public

My commission expires:

STATE OF NEW MEXICO)
(ss.
COUNTY OF _____)

On this _____ day of _____, 1954, before me personally appeared DUANE BERRYHILL and LAWRENCE ELKINS, to me known to be the persons described in and who executed the same as their free act and deed.

WITNESS my hand and seal on this the day and year last above written.

_____
Notary Public

My commission expires:

_____

Albuquerque, New Mexico
24 December 1954

RECEIVED
JUL - 5 1955

Four Corners Exploration Company
Grants
New Mexico

Gentlemen:

This letter will confirm our agreement with respect to exploratory drilling on the properties which we have purchased form you, being

Section 31, Township 14 North, Range 10 West,
N.M.P.M., McKinley County, New Mexico,

and on which we have taken an assignment of a sublease from Duane Berryhill and wife and Lawrence Elkins and wife, as follows:

All drilling to be performed on this property shall be done by you under the following price schedule:

0 to 100 feet in depth at $0.50 per foot
100 to 200 feet in depth at $1.00 per foot
200-to 300 feet in depth at $1.50 per foot

Drilling at depths below 300 feet shall be at a price negotiated by the parties.

$0.35 per foot additional shall be charged where samples are required.

Coring shall be performed at a rate of $3.00 per foot to a depth of 400 feet where required.

Very truly yours

HOLLY URANIUM CORPORATION

By S/ S. B. Harris, Jr.
President

ATTEST:

S/ L. R. Chambers
Secretary

ACCEPTED:
FOUR CORNERS EXPLORATION COMPANY

By S/ Irving Rapaport
Partner

S/ F. O. Manol
Partner

Cruz

DMEA
Date Rec'd
JUN 30 1955
BUREAU OF MINES
Denver, Colorado

Grants, New Mexico
June 27, 1955

RECEIVED
JUL - 5 1955

Mr. R. B. King, Executive Officer
DMEA Field Team, Region IV
224 New Customhouse
Denver 2, Colorado

Dear Mr. King:

Four copies of an application for DMEA assistance in exploring section 31, T. 14 N., R. 10 W., N.M.P.M. for uranium ore bodies are attached. Please note my signature on each of the four application forms (MF-103).

Information regarding property description and nature of exploration program together with cost estimates are described on separate sheets.

Sincerely,

E B Butts

Edgar B. Butts, Vice-president
Holly Uranium Corporation

EBB/crp

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved
Budget Bureau No. 42-R10351.2

DMEA
Rec'd
JUN 30 1955
BUREAU OF MINES
Denver, Colorado

RECEIVED
JUL - 5 1955

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

Not to be filled in by applicant.

Docket No. 3886
~~Metal~~ or Mineral Uranium
Date Received 7-5-55
Estimated Cost $160,129.77
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: _____

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

.....

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☐ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated June 27, 1955

Holly Uranium Corporation
(Applicant)

By E B Butts

Edgar B. Butts

Vice-president

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

RECEIVED
JUL - 5 1958

UMA Point 1

(a) Holly Uranium Corporation
Post Office Box 86
Grants, New Mexico

(b) Holly Uranium Corporation
Incorporated in State of Delaware

(c) Mr. S. B. Harris, Jr., President
122 East 42nd Street
New York 17, New York

Mr. Edgar H. Ahlers, Vice-president
Post Office Box 86
Grants, New Mexico

Mr. L. R. Chambers, Secretary-Treasurer
122 East 42nd Street
New York 17, New York

(d) Corporation

UMA Point 3

(a) All of section 31, T. 14 N., R. 10 W., N. M. P. M., McKinley County, New Mexico

(b) Silver Spur Mining property

(c) Lessee

(d) Copy of Lease attached

(e) Lessee

(f) Patented land

DMEA Point 4

(a) Mineralized Dakota sandstone rim exposures, first observed in 1952 by Laurence Elkins and Duane Berryhill, were subsequently bulldozed by the parties in an effort to determine extent and character of uranium mineralization. Rim-stripping was followed by wagon-drilling behind the mineralized outcrops and a number of small ore bodies were developed. Shallow pits were stripped (figure 1) and about 1,000 tons of commercial grade ore extracted and shipped to the U. S. Atomic Energy Commission ore-buying stations at Bluewater and Shiprock, New Mexico.

Four Corners Exploration Company of Grants, New Mexico, initiated rotary drilling early in 1954 in the vicinity of the open pits and encountered additional ore-grade mineralization in the Dakota sandstone, and one of two holes drilled into the Morrison formation encountered mineralization in the Brushy Basin member.

In December, 1954, and January, 1955, 4,458 feet of rotary drilling was completed by Holly Uranium Corporation immediately to the southwest of the stripped area. Fifty-five holes were bottomed at the Dakota sandstone-Morrison formation contact. Fifty-one of the 59 holes cut uranium mineralization. On May 1, 1955, Holly Uranium Corporation initiated stripping operations at a mineralized Dakota sandstone outcrop in the southwest $\frac{1}{4}$ of the section. On June 4, 50 tons of ore were shipped to the Anaconda-operated mill at Bluewater, New Mexico. Seven holes were drilled about 100 feet behind the outcrop encountering only weak mineralization. Mining operations are continuing.

Holly has recently established elevations and horizontal control across the section. Two holes were drilled in May, 1955, into the Westwater Canyon member of the Morrison formation for stratigraphic and structural information.

The stripped area and drill holes are readily accessible from dirt roads which traverse across the section.

Point 4

(b) Production from section 31, T. 14 N., R. 10 W. (Silver Spur Mine) has been limited to the Dakota sandstone. Production to date includes 873 tons containing 3,494 pounds of U_3O_8 shipped to the Anaconda-operated mill at Bluewater, New Mexico, and about 50 tons containing 600 pounds of U_3O_8 shipped to the U. S. Atomic Energy Commission ore-buying station at Shiprock, New Mexico. Mining was resumed May 1, 1955, and 50 tons of ore were shipped to the Anaconda-operated mill on June 4th.

DMEA Point 4, continued

Recent drilling to the southwest of the striped area shows presence of additional uranium mineralization and small ore deposits in the Dakota sandstone.

Point 4

(c) Section 31, T. 14 N., R. 10 W., is situated on the northeast flank of the Zuni Uplift. Outcropping rock units are the upper portion of the Brushy Basin member of the Morrison formation of Jurassic age and the Dakota sandstone and Mancos shale of upper Cretaceous age. Brushy Basin mudstone and sandstone lenses are exposed only on the steep valley slopes along the southern margin of the section (figure 1). The Dakota sandstone and a thin veneer of Mancos shale form the gently, north-sloping, low relief surface that constitutes the remainder of the section. Vegetation on the back slopes consists of grasses and patches of juniper and piñon pine.

Correlation of rim observations and of subsurface drilling information from section 31 and adjacent sections indicate the dip of the rocks to be 2° to 2½° N. 27° E. A number of northeast to northwest-trending faults with displacements of 20 feet or less cut the Dakota sandstone outcrops along the south margin of the section. Drilling may show presence of other faults with greater displacements. Faulting is intense in sections adjacent to section 31.

Examination of drill hole cuttings in section 31, T. 14 N., R. 11 W., and study of columnar sections measured along rim exposures in section 35, T. 13 N., R. 11 W., section 31, T. 14 N., R. 10 W., section 1, T. 13 N., R. 11 W., and sections 5, 6, and 19, T. 13 N., R. 10 W. reveal the Dakota sandstone to average 70 feet to 85 feet in thickness with the backslopes mantled by gray-brown shale and thin-bedded, fine-grained sandstones of the Mancos formation ranging from a featheredge to 60 feet in thickness. It is estimated that the Mancos formation is about 90 feet thick in the extreme northeast portion of section 31.

Five holes drilled in section 36, T. 14 N., R. 11 W., bottomed in the Brushy Basin and Westwater Canyon members of the Morrison formation. Information derived from the cuttings together with information obtained from the measured columnar sections show considerable variations in stratigraphic position and thickness of Brushy Basin sandstone units lying lensing and grading with mudstone units and also with the underlying Westwater Canyon sandstone. Rapid pinchouts of the Brushy Basin sandstone units

DMA Point 4, continued

can be expected throughout section 31. Thicknesses of the sandstone lenses range up to 60 feet in the drill holes and measured sections. Sandstone textures varied from fine-grained to very coarse with local conglomerate lenses. Carbon trash was observed in a number of measured sections.

Yellow secondary uranium mineralization (identified as meta-tuyamunite) was first observed in Dakota sandstone outcroppings in the south½ section 31. Development work (rim-stripping) and rotary drilling behind the rim indicated presence of small, commercial deposits. Stripping operations reveal that the ore is commonly confined to a medium-to coarse-grained, limonite-stained, well-sorted sandstone with only minor amounts of cross-stratification, and present 10 feet to 50 feet above the base of the formation. The uranium mineralization is commonly associated with bedding planes containing carbon debris and with joint surfaces. Dissemination of uranium into the sandstone is more apparent near bedding planes and joint surfaces. Intense limonite coloration is associated with the uranium deposits. Plotting of known ore and mineral deposits shows parallelism to a secondary joint trend (N. 30° E.).

Only a very limited portion of Dakota sandstone has been explored for uranium potential, and no exploration has been initiated in the Morrison formation.

Exploration for uranium deposits in the Morrison formation in section 31, T. 14 N., R. 10 E. is felt warranted because of

1. Presence of uranium ore deposits in the overlying Dakota sandstone.

2. Marked lateral variations in sandstone thickness and texture of Brushy Basin units as determined from rim observations and examinations of drill hole cuttings.

3. Presence of lithologic characteristics associated with sandstone uranium deposits in adjacent areas (carbon debris; medium-to coarse-grained sandstone textures; mudstone lenses, splits, and balls; cross-stratification; local strong limonite coloration).

4. High intensity of fracturing observed in Dakota sandstone.

5. Proximity to intense faulting in adjacent section.

DMEA Point 4, continued

6. Strong parallelism of uranium deposits in section 19, T. 13 N., R. 10 W., section 31, T. 14 N., R. 10 W. (Silver Spur) and Dysart well area (section 11, T. 14 N., R. 10 W.) to the northeast-trending deposits in Poison Canyon-San Mateo Valley area (T. 13 N., R. 9 and 10 W.).

Point 4

(d) The proposed drilling area, section 31, T. 14 N., R. 10 W., is situated within the Grants Mining District approximately 25 miles, by highway and secondary roads, northwest to Grants, New Mexico. Access to the property is obtained by following U. S. Highway 66 1.8 miles southeast from Prewitt, New Mexico, then turning northeast traversing 5 miles on dirt road leading to Haystack Butte and to the large limestone mining operation of Haystack Mountain Development Company, and then continuing north on dirt road for an additional 4 miles to the stripping area on the section. The Anaconda-operated uranium mill at Bluewater, New Mexico, is 9 miles south of section 31.

Point 4

(e) Technical and semi-technical personnel including one geologist, one engineer, and 2 field assistants will be supplied by Holly Uranium Corporation.

Materials in the form of 2 rotary drill rigs and other drilling supplies will be supplied by the contractor. Supplies and equipment necessary for sampling and radiometric logging will be furnished by Holly Uranium Corporation.

Water necessary for drilling operations can be obtained at the Anaconda Copper Mining Company uranium mill site approximately 9 miles south of section 31.

DMEA Point 5

(a) Uranium-bearing minerals

Point 5

(b) The proposed exploration program in section 31, T. 14 N., R. 10 W. will test, by drilling, the upper portion of the Morrison formation and the Dakota sandstone for uranium deposits. Drilling is suggested in three phases.

Phase I

Seven drill lines trending N. 15° W. and spaced 800 feet apart have been superimposed across the section. Initial drill hole spacing within the drill rows will be 400 feet

Point 5, continued

with the holes staggered on adjacent drill lines to better explore ground with a minimum number of holes (Figure 1). The N. 15° E. trend of the drill rows was selected to better intercept an assumed easterly trend of the Morrison formation sediments, and the N. 30° E. trend of the cross-sections in the Dakota sandstone.

Phase I will require seventy-nine holes totaling 26,240 feet. Average hole depth will be 332 feet. Ten core holes will be drilled at the onset of exploration (nos. 1-4, 1-7, 1-22, 1-28, 1-44, 1-55, 1-59, 1-63, 1-69, and 1-73) Figure 1. The Dakota sandstone and Brushy Basin and Westwater Canyon members of the Morrison formation will be cored to determine lithology and lithofacie changes across the section and also to serve as a sound basis for correlation with the rotary drill holes. The remaining 69 holes will bottom in top of the Westwater Canyon member of the Morrison formation about 200 feet below the base of the Dakota sandstone.

Phase II

Phase II drilling will concentrate in areas showing highest degree of geologic favorability (intraformational sandstone channels, hydrocarbon residue, carbon debris, limonite coloration, pyrite, and uranium mineralization) as determined by Phase I drilling. It is estimated that 20 per cent of holes drilled in Phase I will cut geologically favorable ground and/or mineralization. Such areas, along and between drill rows, will be investigated with holes plotted on 200 foot centers. Eight holes per area with maximum of 130 holes totaling 41,600 feet will be required.

Phase III

Uranium mineralization encountered in the Dakota sandstone and/or Morrison formation by Phase II drilling will be offset on 100 foot and 50 foot centers. It is estimated that 20 per cent of the holes drilled in Phase II will penetrate uranium mineralization. A maximum of 5 holes will be drilled per mineralized hole discovered in Phase II. A maximum of 150 holes totaling 49,920 feet will be drilled in Phase III. This represents a maximum estimate based on very favorable results with drilling depths calculated to mineralized horizons in the Morrison formation. It is very probable that the total footage described will not be realized if earlier results are negative and mineralization is restricted to the Dakota sandstone.

DMEA Point 5, continued

Total maximum footage for the project will be 117,760 feet requiring 359 holes. Drilling depths will range between 130 feet and 565 feet. The project can be terminated or revised after completion of Phase 1. The actual number of holes drilled will range between 79 and 359, the number dependent upon amount of success in locating ore deposits.

With the exception of 10 holes that will be cored in Phase 1, rotary drilling using air and water (with drilling mud) as the circulating media will be employed in drilling throughout phases I, II, and III. It is suggested that air be used as the initial mode of circulation reverting to water and drilling mud only if horizons in the Morrison formation become moist or if sands are too loose for adequate circulation by air. The test holes in the north one-half of the section indicated the possibility of encountering both above-mentioned conditions. Cuttings will be collected (2 foot intervals Phases I and II and one foot intervals Phase III) through the mineralized horizons as determined by counter placed in stream of cuttings.

All holes drilled in phases I, II, and III will be logged by a radiometric logging unit and a permanent record of the intensity of radiation will be procured and retained.

Provisions can be made to core Morrison horizons if sampling techniques described prove unacceptable or impractical.

Point 5

(c) The work will start within 30 days and be completed within 8 months from the date of an exploration project contract. Two drilling rigs will be assigned to the the project.

Point 5

(d) Since November 1, 1954, Holly Uranium Corporation has been engaged in geologic exploration, development, and mining operations in the Grants, New Mexico area. The Corporation currently is mining and shipping uranium ore from the Morrison formation at the Mesa Top Mine in section 20, T. 12 N., R. 9 W., from the Todilto limestone at the Flat Top Mine in section 30, T. 13 N., R. 9 W., and from the Dakota sandstone at the Silver Spur property (section 31, T. 14 N., R. 10 W.).

Mr. William A. Carlson, who will have direct supervision of the exploration program, served as a geologist with the U. S. Atomic Energy Commission, Grand Junction Operations Office, prior to his affiliation with Holly Uranium Corporation. While employed with the Commission, Mr. Carlson supervised reconnaissance and exploration drilling projects in Colorado, Utah, and New Mexico.

DISA Point 5, continued

Mr. Paul L. Melancon, Director of Exploration and Development for Molly Uranium Corporation, was employed as district geologist by the U. S. Atomic Energy Commission, Grand Junction Operations Office, and as General Manager of Mesa Exploration, Inc. of Grants, New Mexico, prior to his affiliation with Molly Uranium Corporation.

DISA Point 6

(a) Molly Uranium Corporation entered into an agreement dated December 24, 1954, with Four Corners Exploration Company of Grants, New Mexico, to perform all exploratory drilling on the Silver Spur property, Section 31, T. 14 N., R. 10 W., at the following price schedule.

Rotary-Plug

0-100 feet	$0.50 per foot
100-200 feet	$1.00 per foot
200-300 feet	$1.50 per foot
300-400 feet	$2.00 per foot*
400-500 feet	$2.50 per foot*
500-600 feet	$3.00 per foot*

$0.35 per foot additional will be charged where samples are required.

* Not included in agreement of December 24, 1954.

Rotary-Core

0-400 feet	$3.00 per foot
Below 400 feet	$5.[illegible] per foot*

* Not included in agreement of December 24, 1954.

DMEA Point 6, continued

(a) Independent Contracts

Footage and Cost Distribution

Phase I Drilling

Rotary-Core

Depth Interval	Total Feet	Unit Cost	Interval Cost	
0-100 Feet	500	$3.00	$ 1,500.00	
100-200 Feet	900	$3.00	$ 2,700.00	
200-300 Feet	1000	$3.00	$ 3,000.00	
300-400 Feet	974	$3.00	$ 2,922.00	
400-500 Feet	410	$5.00	$ 2,050.00	
500-600 Feet	65	$5.00	$ 325.00	
	3,849		$12,497.00	$12,497.00

Rotary-Non Core

Depth Interval	Total Feet	Unit Cost	Interval Cost	
0-100 Feet	7404	$0.50	$ 3,702.00	
100-200 Feet	6395	$1.00	$ 6,395.00	
200-300 Feet	5590	$1.50	$ 8,385.00	
200-400 Feet	2192	$2.00	$ 4,384.00	
400-500 Feet	300	$2.50	$ 750.00	
500-600 Feet	10	$3.00	$ 30.00	
	22,391		$24,146.00	
	26,240 (total)			
Samples	690'	$0.35	$ 241.50	
			$24,387.50	$24,387.50

Total Drilling and field sampling costs, Phase I $36,884.50

DETAIL Point 6, continued

(a) Independent Contracts continued

Phase II Drilling

Rotary-Non Core

Depth Interval	Total Feet	Unit Cost	Interval Cost
0-100 Feet	13,007	$0.50	$ 6,503.50
100-200 Feet	12,636	$1.00	$12,636.00
200-300 Feet	10,857	$1.50	$16,285.50
300-400 Feet	4,800	$2.00	$ 9,600.00
400-500 Feet	100	$2.50	$ 250.00
	41,600		$45,475.00
Samples	1,950'	$0.35	$ 682.50

Total drilling and field sampling costs, Phase II.....$46,157.50 $46,157.50

Phase III Drilling

Rotary-Non Core

Depth Interval	Total Feet	Unit Cost	Interval Cost
0-100 Feet	15,008	$0.50	$ 7,504.00
100-200 Feet	14,837	$1.00	$14,837.00
200-300 Feet	12,857	$1.50	$19,285.50
300-400 Feet	7,218	$2.00	$14,436.00
	49,920		$56,062.50
Samples	2,250'	$0.35	$ 787.50
			$56,850.00

Total drilling and field sampling costs, Phase III $56,850.00

Total maximum footage, Phases I, II, and III .....117,760.0 Feet

Total maximum drilling and sampling costs, phases I, II and III...$139,892.00

75 hours of bull-dozing at rate of $12.50 per hour required to prepare drill sites and access drill roads.....$ 937.50

Total Independent Contracts.....$140,829.50

DMA Point 6

(b) Supervision

William A. Carlson, Geologist and Project Supervisor
Salary $625.00 per month
75 per cent of time devoted to project
Maximum salary $3750.00*

Edward Frea , Project Surveyor
Salary $583.32 per month
25 per cent of time devoted to project
Maximum salary $1166.64*

Joe L. Webb, Project Sampler
Wage rate $1.80 per hour
100 per cent of time devoted to project
Maximum salary $2520.00*

Mike Gallegos, Helper
Wage rate $1.75 per hour
25 per cent of time devoted to project
Maximum salary ..... $ 612.50*

Salary total $8,049.14*

* Salaries based upon 8 month duration of project assuming 15,000 feet of drilling per month (2 rigs).

DMA Point 6

(c) None

Point 6

(d) Rental and operating fees of

3 Babbel counters
1 reel and probe
1 Jones splitter
1 Laboratory pulverizer
1 Nuclear Radioactric Sealer

at $5.00 per day ..... $ 880.00

Vehicle transportation from Grants, New Mexico to section 31.

52 miles round trip per car, 2 cars, $0.07 per mile,
176 days maximum $1,281.28

DFA Point 6, continued

(e) None

Point 6

(f) None

Point 6

(g) Nuclear Radioelectric Dosimeter $1.00 per sample, 1,000 samples $1,000.00
Chemical assays $2.35 per sample $1,000.00
Counter repair and maintenance $20.00 per month ..... $ 160.00
New Mexico School Tax 2% independent contracts $2,802.97
Workmen's compensation, payroll taxes, liability insurance 1,126.38

Total $6,089.35

Point 6

(h) Contingencies ..... $ 3,000.00
Total maximum cost of project 160,129.77*

DFA Point 7

(a) Yes

Point 7

(b) Holly Sugar Corporation is interested and able to pay by [illegible] 25 per cent of gross cost of project.

* Total cost of project is based upon many irregular results and may not be realized.

RECEIVED
JUL - 5 1956

PURCHASE CONTRACT

THIS CONTRACT, made this 14th day of December, 1954, between HOLLY URANIUM CORPORATION, a corporation organized and existing under the laws of the State of Delaware and qualified as a foreign corporation under the laws of the State of New Mexico, as PURCHASER, and FOUR CORNERS EXPLORATION COMPANY, a partnership composed of F. O. MANOL AND IRVING MARGOT, as SELLER,

WITNESSETH:

WHEREAS the Seller is the Sublessee under a certain Sublease dated December 1, 1954, wherein Duane Berryhill and Nolda Louise Berryhill, his wife, and Lawrence Elkins and Edith L. Elkins, his wife, are Sublessors, wherein Seller has subleased from said Sublessors the right to prospect for, mining, mill and market uranium-bearing ores in, on and under the following described lands situate in McKinley County, New Mexico, to-wit:

All of Section 31, Township 14 North, Range 10 West, N.M.P.M., and

WHEREAS Purchaser is desirous of acquiring all of the interest of Seller in said Sublease,

NOW, THEREFORE, IT IS AGREED as follows:

1. Seller has coincidentally herewith assigned to Purchaser all of its right, title and interest in and to the said Sublease hereinabove described, in consideration of the agreement of Purchaser to pay to Seller the sum of Seventy-Five Thousand Dollars ($75,000.00) as follows:

(a) Five Thousand Dollars ($5,000.00) deposit heretofore paid by Purchaser to Seller, receipt of which is hereby acknowledged by Seller.

(b) Fifteen Thousand Dollars ($15,000.00) payable upon execution of this Contract by the parties.

(c) Twenty-Seven Thousand Five Hundred Dollars ($27,500.00) on or before November 20th, 1956.

(d) The balance of Twenty-Seven Thousand Five Hundred Dollars ($27,500.00) on or before November 20th, 1957.

Deferred payments on the said purchase price shall bear no interest until the maturity date thereof, but shall bear interest thereafter at Six (6%) Percent per annum until paid.

2. The Purchaser agrees to comply with all the provisions of the Original Lease of the premises by and between Annie May Berryhill as Lessor and Duane Berryhill and Lawrence Elkins as Lessees, said Lease being dated November 30th, 1953; and amendment thereto dated December 1, 1954; and Purchaser further agrees to comply with all the provisions of the Sublease between said Duane Berryhill and Melda Louise Berryhill, his wife, and Lawrence Elkins and Edith L. Elkins, his wife, as Sublessors, and Seller as Sublessee, said Sublease being dated December 1, 1954. In the event of default by Purchaser as to any any provisions of said Original Lease and Sublease, and in the event of failure by Purchaser to cure such default Twenty (20) days after notice of such default shall be given to Purchaser as provided by the terms of said Lease and Sublease; or in the event of default by Purchaser in payment of any installments due under this Contract, and in the event Purchaser shall remain in default in

making the payments provided for in this Contract Twenty (20) Days after notice of default mailed to Purchaser by registered mail at Purchaser's registered office in the State of New York, the Seller may at its option terminate this agreement and retain all sums theretofore paid as rental for the use of said premises, and all rights of the Purchaser in the premises hereinabove described shall thereupon cease and terminate. An affidavit of default delivered to the Escrow Agent hereinafter designated by the Seller shall constitute authorization to the said Escrow Agent to deliver to the Seller a Re-Assignment of the Sublease to the premises hereinabove described.

3. It is understood and agreed that in the event Purchaser extracts and removes from the premises hereinabove described uranium and vanadium ores of "Mine Value of Ore", as defined in the said Sublease dated December 1, 1954, including bonuses, of a value in excess of Two Hundred Thousand ($200,000.00) Dollars prior to November 20th, 1956, Purchaser shall be unconditionally obligated to make the payment of Twenty-Seven Thousand Five Hundred ($27,500.00) Dollars as provided in Paragraph 1(c) of this Contract; and in the event Purchaser extracts and removes from the premises hereinabove described "Mine Value of Ore" as defined in said Sublease, including bonuses, in excess of Four Hundred Thousand ($400,000.00) Dollars prior to November 20th, 1957, Purchaser shall be unconditionally obligated to make the payment of Twenty-Seven Thousand Five Hundred ($27,500.00) Dollars provided in Paragraph 1(d) hereof; provided, however, that in the event Purchaser does not extract and remove ore of the values hereinabove mentioned on or before the dates hereinabove mentioned, Seller's sole remedy in the event of default by

Purchaser shall be to enforce the forfeiture provisions of Paragraph 2 of this Contract.

4. It is understood and agreed that coincidental herewith Purchaser has executed a good and sufficient Re-Assignment of Sublease on the above-described premises to Purchaser, which said Re-Assignment, together with a copy of this Contract and a copy of said Sublease, shall be placed in escrow with First National Bank of Albuquerque, New Mexico, as hereby designated and appointed Escrow Agent, said Re-Assignment to be delivered by the Escrow Agent to the Purchaser upon full compliance on the part of Purchaser of all the conditions of this Contract; or in the event of default by Purchaser, said Re-Assignment shall be delivered by the Escrow Agent to the Seller, as provided in the Escrow Letter herein.

ESCROW LETTER

To First National Bank

Albuquerque, New Mexico

In re the Assignment under Contract by Four Corners Exploration Company, a Partnership, Grants, New Mexico, to Holly Uranium Corporation, 122 East 42nd Street, New York 17, New York, of the Sublease hereinabove described, we send you herewith the following papers to be placed in escrow, to-wit:

Copy of Original Lease and Amendment thereto, Annie Ray Berryhill to Duane Berryhill and Lawrence Elkins, dated November 30th, 1953.

Copy of Sublease, Duane Berryhill and wife and Lawrence Elkins and wife to Four Corners Exploration Company, dated December 1, 1954.

Copy of Assignment of the said Sublease dated December 14, 1954.

Re-Assignment of said Sublease.

We also hereby appoint you Escrow Agent hereunder and direct you as such Escrow Agent to collect the payments required to be paid by Purchaser, as provided in said Contract, and to place the monies so collected to the credit of Seller at Box 116, Grants, New Mexico.

In the event Purchaser shall default in making the payments set forth in the within Contract or in payment of the minimum rentals or royalties to Original Lessor and Sublessors, as provided in the said Original Lease and Sublease, and in the event, further, that Purchaser shall remain in default for a period of Twenty (20) Days after notice in writing of such default has been given to Purchaser by registered mail, and hereinabove provided, you are directed to deliver back to the Seller all of the above mentioned papers. Affidavit of the Seller as to such default on the part of the Purchaser and proof by Seller that notice by registered mail has been given to Purchaser at its registered office in the State of New York shall constitute authority for you to deliver back to Seller all of the above mentioned papers.

Upon compliance with the terms of said Contract on the part of the Purchaser, you are directed to deliver all of the above mentioned papers to the Purchaser.

WITNESS the hands and seals of the parties this 14th day of December, 1954.

ATTEST:

S/ A. H. McRae
Assistant Secretary

HOLLY URANIUM CORPORATION

By S/ S. D. Harris, Jr.
PRESIDENT

FOUR CORNERS EXPLORATION CO.

S/ Irving Rapaport

S/ F. O. Hanol

SELLER

RECEIVED
JUL - 5 1955

We hereby accept the appointment and designation of Escrow Agent herein and acknowledge receipt of the above mentioned papers.

By _____

STATE OF NEW MEXICO)
(ss.
COUNTY OF BERNALILLO)

On this 14th day of December, 1954, before me personally appeared S. B. Harris, Jr., to me personally known, who being by me duly sworn, did say that he is President of HOLLY URANIUM CORPORATION, a corporation organized under the laws of the State of Delaware, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation, by authority of its Board of Directors, and said S. B. Harris, Jr. acknowledged said instrument to be the free act and deed of said corporation.

WITNESS my hand and seal on this the day and year first above written.

S/ Robert Nordhaus
Notary Public

My commission expires:
December 11, 1957

STATE OF NEW MEXICO)
(ss.
COUNTY OF BERNALILLO)

On this 14th day of December, 1954, before me personally appeared Irving Rapaport and F. O. Hanel, members of the partnership of Four Corners Exploration Company, to me known to be the persons described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

WITNESS my hand and seal on this the day and year first above written.

S/ Robert Hardham
Notary Public

My Commission Expires:
December 11, 1957

L E A S E

THIS AGREEMENT made and entered into this 30th day of November, 1953, by and between ANNIE MAY BERRYHILL, hereinafter called the Lessor and DUANE BERRYHILL and LAWRENCE HIKING, hereinafter called the Lessees.

WITNESSETH:

WHEREAS, the Lessor is the owner of uranium mineral ores in, on, and under the following described land, situated in McKinley County, New Mexico, to-wit:

TOWNSHIP 14 NORTH, RANGE 10 WEST, N.M.P.M., SEC. 31 ALL;

WHEREAS, Lessees desire to lease and obtain the right to mine and market said uranium ores.

NOW THEREFORE THE PARTIES AGREE AS FOLLOWS:

(1) For the sum of $1.00 and other valuable considerations hereby acknowledge received, the Lessor, Leases, lets, and demises unto Lessees their successors and assigns, the right to prospect for and to mine, sell, and market any and all uranium bearing ore, in, on, and under the above described land for so long as the minimum sum of : Twelve hundred (1,200) Dollars per year in royalty or rental is paid to the Lessor. Payment of the aforementioned sum may be made in equal monthly installments. Payment shall commence one year from this date.

(2) Lessees agree to pay Lessor a royalty of 12½% of the gross proceeds of and from all uranium ores mined and obtained from and under said land during the period of this lease, said payments to be made monthly as new ores may be extracted from said land and disposed of by the Lessees. Gross proceeds are defined as money derived from the sale of uranium bearing

ores and includes the base price, any bonuses, any premiums, and any haulage allowances. Development allowances are specifically excluded from royalty payments. Monies received by the Lessor from this 12½% royalty shall apply against the guaranteed minimum advance royalty or rental referred to in the preceding paragraph. All ore mined shall be sold within two months of the time it is mined.

(3) Lessees agree to keep true records and accounts of all such uranium ores that may be taken away from said land and to render periodic accountings to Lessor thereof; Lessees to bear all expenses of every kind and nature whatsoever in connection therewith; and Lessees further agree to hold Lessor harmless from any claim or demand of any nature whatsoever because or on account of any activity or thing arising out of this lease agreement.

(4) It is agreed and understood that the Lessor does not own the surface of said property, having sold and conveyed the surface rights thereof; and further that they do not own all of the other minerals in and under said land, and that this lease covers only the uranium bearing ores. It is further agreed that Lessees, their successors and assigns, shall make arrangements with the owners of the surface to pay said owners for whatever damage is caused to the surface of the ground by reason of the mining activities carried on under this lease.

(5) This document makes void the previous lease dated January 9, 1952, between the parties hereto.

Should the Lessees apply for governmental assistance for the exploration and development of said land under the Defense Minerals Exploration Act or a similar program, the Lessor consents to sign the documents necessary for the secural of this aid.

IN WITNESS WHEREOF the parties have set their hands and seals on this the day and year first above written.

s/ Annie May Berryhill
Annie May Berryhill, Lessor

s/ Duane Berryhill
Duane Berryhill, Lessee

s/ Lawrence Elkins
Lawrence Elkins, Lessee

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

On this 30th day of November, 1953, before me personally appeared ANNIE MAY BERRYHILL to me known to be the person described in and who executed the foregoing instrument and acknowledge that they executed the same as their free act and deed.

WITNESS my hand and seal on this the day and year last above written.

(SEAL)

s/ Tracy A. Sheley
Notary Public

My commission expires: Nov. 24, 1956.

STATE OF NEW MEXICO)
)
COUNTY OF VALENCIA)

On this 30th day of November, 1953, before me personally appeared DUANE BERRYHILL and LAWRENCE ELKINS to me known to be the persons described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

WITNESS my hand and seal on this the day and year last above written.

(Notarial Seal)

s/ C. V. Hale, Jr.
Notary Public

My commission expires: 9-10-55

RECEIVED
JUL - 5 1955

CORRECTION LEASE

THIS AGREEMENT, made this _____ day of _____, 1954, by and between DUANE BERRYHILL and _____ BERRYHILL, his wife, and LAWRENCE WILKING and _____ WILKING, his wife, as SUBLESSORS, and FOUR CORNERS EXPLORATION COMPANY, a partnership, whose members are F. O. HANOL and IRVING BARACET, hereinafter sometimes called SUBLESSEE,

WITNESSETH:

THAT WHEREAS Sublessors heretofore and on November 30th, 1953, leased from Annie May Berryhill, hereinafter sometimes called Lessor, the rights to prospect for, to mine, sell and market uranium-bearing ores in, on and under the following described lands situate in McKinley County, New Mexico, to-wit:

All of Section 31, Township 14 North, Range 10 West, N.M.P.M.,

the said lease being referred to hereinafter as the Original Lease, and,

WHEREAS the parties to this instrument heretofore and on November 30th, 1953, entered into a Lease Agreement and a Supplement thereto wherein the Sublessors leased to Sublessee the rights to prospect for and to mine, sell and market uranium-bearing ores in, on and under the above described lands, and

WHEREAS it is desired to execute a Correction Agreement and Sublease which shall supersede and cancel the said Lease Agreement and Supplement dated November 30th, 1953, between the parties hereto.

NOW, THEREFORE, IT IS AGREED:

1. That the Sublessors for the sum of One Dollar ($1.00) and other

considerations, receipt of which is hereby acknowledged, have leased, let and demised and do by these presents lease, let and demise unto Sublessee, its successors and assigns, the right to prospect for and to mine, mill and market any and all uranium-bearing ores in, on and under the above described lands for so long as Sublessee shall pay, in addition to the minimum royalty or rental provided for in said Original Lease, wherein Annie May Berryhill was lessor, a minimum royalty or rental to Sublessors of One Thousand Two Hundred Dollars ($1,200.00) per year, payable in equal monthly installments, commencing November 30th, 1954. Sublessee, its successors and assigns, shall be privileged to pay all rentals and royalties provided for in the Original Lease, and shall furnish to Sublessors from time to time such evidence of payment to the Original Lessor of the minimum royalty or rental as may be required by Sublessors.

2. Sublessee agrees to pay to Sublessors a royalty on the proceeds from the sale of all uranium ores mined and obtained in, from and under the above described lands for the duration of this sublease, based on the Mine Value of Ore as hereinafter defined, the amount thereof to be determined according to the Graduated Scale of Percentages hereinafter set forth in Subsection (a) of this paragraph; provided, however, that there shall be deducted from monthly royalty payments due Sublessors under the terms of this paragraph the amount of all rentals and royalties, minimum and percentage, paid by Sublessee to the owner of the said Original Lease on the premises and not previously credited to Sublessee under the terms of this paragraph; and provided, further, there shall be applied against the amount of monthly royalty payments due Sublessors the total of minimum rentals theretofore paid by Sublessee and not credited to Sublessee

under the terms of this paragraph; and provided, further, that percentage royalties paid by Sublessee under this paragraph, in excess of the minimum rentals provided for in Paragraph 1 hereof, shall apply against future minimum rentals which otherwise would become due.

(a) GRADUATED SCALE OF PERCENTAGE ROYALTIES

ONE LESS THAN TWENTY(20) FEET FROM THE SURFACE OF THE GROUND

ROYALTY	MINE VALUE OF ORE
19½%	$00.00 to $20.00
20%	$20.00 to $30.00
21%	$30.00 to $40.00
22%	$40.00 to $50.00
23%	$50.00 to $60.00
24%	$60.00 to $70.00
25%	$70.00 to $80.00
26%	$80.00 to $90.00
27%	$90.00 and above

ONE MORE THAN TWENTY ($20) FEET FROM THE SURFACE OF THE GROUND

ROYALTY	MINE VALUE OF ORE
17½%	$00.00 to $20.00
18%	$20.00 to $30.00
19%	$30.00 to $40.00
20%	$40.00 to $50.00
21%	$50.00 to $60.00
22%	$60.00 to $70.00
23%	$70.00 to $80.00
24%	$80.00 to $90.00
25%	$90.00 and above

(b) MINE VALUE OF ORE is hereby defined as the proceeds received from the sale of ore, including in the base price of uranium and vanadium any premiums and any haulage allowances. Bonuses derived from the sale of ore shall not be included in the Mine Value of Ore. Royalties on bonuses shall be computed according to the above Graduated Scale of Percentages separately from computations of royalties on mine value of ore,

and said royalties on bonuses shall be paid separately according to the above Graduated Scale of Percentages; (it being the intention of the parties that the percentage of royalty applicable to any shipment of ore, and based on the Value of Ore as herein defined, shall not be increased by adding to said Sine Value of Ore the amount of any such bonus). Development allowances are specifically excluded from royalty payments. Payments of royalty shall be made monthly on new ores may be extracted from said lands and disposed of by the Sublessee.

3. The Sublessee agrees to keep true records and accounts of all such uranium ores that may be taken away from said land and to render periodic accountings to Sublessors thereof; the Sublessee is to bear all expenses of every kind and nature whatsoever because of or on account of any activity or thing arising out of this Lease Agreement. All ore shall be sold within two months of the time it is mined.

4. It is agreed and understood that Sublessors do not own the surface of said property, having sold and conveyed the surface rights thereof; and further that they do not own all of other minerals in and under said land, and that this Sublease covers only the uranium-bearing ores. It is further agreed that Sublessee, its successors and assigns, shall make arrangements with the owners of the surface to pay said owners for whatever damage is caused to the surface of the ground by reason of the mining activities carried on under this Lease. The Sublessee shall exert care to keep all cattlegates closed or shall construct proper cattle-guards to replace them.

5. Should the Sublessee apply for governmental assistance for the exploration and development of said land under the Defense Minerals Exploration Act or a similar program, the Sublessors consent to sign the documents necessary for the securing of this aid.

6. This Agreement shall be binding and inure to the benefit of the heirs, executors, administrators and assigns of the parties hereto.

7. The Lease and Supplement, dated November 30th, 1953, between Duane Berryhill and Lawrence Elkins, as Lessees, leasing to Sublessee herein the above described lands, shall henceforth be of no further force and effect.

8. All rental and royalty payments shall be made to Sublessors at _____, or at such other address as may be designated by Sublessors by notice in writing to Sublessee. In the event Sublessee shall fail to pay the minimum rentals provided for in the Original Lease and in this Sublease as the same shall become due, and shall remain in default of such payment Thirty (30) Days after notice of such default is mail to Sublessee by registered mail at _____, or to such other persons and at such other addresses as may be designated from time to time by Sublessee, its successors or assigns, by notice to Sublessors in writing at Sublessor's address designated as provided herein, then Sublessors may at their option terminate this Sublease and all of the rights of Sublessee thereunder.

IN WITNESS WHEREOF the parties have set their hands and seals on this the day and year first above written.

_____

_____

_____

_____

SUBLESSEE

FOUR CORNERS PIPELINE COMPANY

_____

_____

SUBLESSOR

STATE OF NEW MEXICO)
COUNTY OF _____) ss.

On this _____ day of _____, 1954, before me personally appeared _____, to me known to be the persons described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

WITNESS my hand and seal on this the day and year last above written.

_____
Notary Public

My commission expires:

_____

STATE OF NEW MEXICO)
(ss.
COUNTY OF _____)

On this _____ day of _____, 195_, before me personally appeared _____

_____,

to me known to be the persons described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

WITNESS my hand and seal on this the day and year last above written.

_____
Notary Public

My commission expires:

_____

AMENDMENT OF LEASE

RECEIVED
JUL - 5 1955

THIS AGREEMENT, made this _____ day of _____, 1954, by and between ANNIE MAY MERRYHILL, a widow, as LESSOR, and DUANE BERRY-HILL and LAWRENCE HIKING, as LESSEES,

WITNESSETH:

WHEREAS Lessor heretofore and on November 30th, 1953, leased to Lessees the rights to prospect for, to mine, sell and market any and all uranium-bearing ores in, on and under the following described lands situate in McKinley County, New Mexico, to-wit:

> All of section 31, Township 14 North, Range 10 West, N.M.P.M., and

WHEREAS the parties desire to amend said Lease Agreement dated November 30th, 1953, to provide a manner of designating the address to which rentals and notices shall be sent, and to clarify certain other provisions of said Lease,

NOW, THEREFORE, IT IS AGREED:

1. All rental and royalty payments shall be made to Lessor at _____, or at such other address as may be designated by Lessor by notice in writing to Lessees, their successors or assigns.

2. In the event Lessees shall fail to pay the minimum rentals provided for in the said Lease as the same shall become due, and shall remain in default of such payment Thirty (30) Days after notice of such default is mailed to Lessees by registered mail at _____, or to such other persons and at such other addresses as may be designated from time to time by Lessees, their successors and assigns, by notice in

writing to Lessor, then Lessor may at her option terminate this Lease and all of the rights of Lessees thereunder.

3. The said Lease and this Amendment thereto shall be binding upon the heirs, executors, administrators and assigns of the parties.

4. The terms and provisions of the Original Lease dated November 30th, 1953, between the parties hereto shall otherwise remain in full force and effect.

IN WITNESS WHEREOF THE parties have set their hands and seals on this the day and year first above written.

_____

LESSOR

_____

_____

LESSEES

STATE OF NEW MEXICO)
(ss.
COUNTY OF _____)

On this _____ day of _____, 1954, before me personally appeared ANNIE MAY BERRYHILL, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that she executed the same as her free act and deed.

WITNESS my hand and seal on this the day and year last above written.

_____

Notary Public

My commission expires:

STATE OF NEW MEXICO)
(ss.
COUNTY OF _____)

On this _____ day of _____, 1954, before me personally appeared DUANE BEREWHILL and LAWRENCE ELKINS, to me known to be the persons described in and who executed the same as their free act and deed.

WITNESS my hand and seal on this the day and year last above written.

_____
Notary Public

My commission expires:

_____

Albuquerque, New Mexico
24 December 1954

Four Corners Exploration Company
Grants
New Mexico

Gentlemen:

This letter will confirm our agreement with respect to exploratory drilling on the properties which we have purchased form you, being

Section 31, Township 14 North, Range 10 West,
N.M.P.M., McKinley County, New Mexico,

and on which we have taken an assignment of a sublease from Duane Berryhill and wife and Lawrence Elkins and wife, as follows:

All drilling to be performed on this property shall be done by you under the following price schedule:

0 to 100 feet in depth at $0.50 per foot
100 to 200 feet in depth at $1.00 per foot
200 to 300 feet in depth at $1.50 per foot

Drilling at depths below 300 feet shall be at a price negotiated by the parties.

$0.35 per foot additional shall be charged where samples are required.

Coring shall be performed at a rate of $3.00 per foot to a depth of 400 feet where required.

Very truly yours

HOLLY URANIUM CORPORATION

By S/ S. B. Harris, Jr.
President

ATTEST:

S/ L. R. Chambers
Secretary

ACCEPTED:
FOUR CORNERS EXPLORATION COMPANY

By S/ Irving Rapaport
Partner

S/ F. O. Manol
Partner

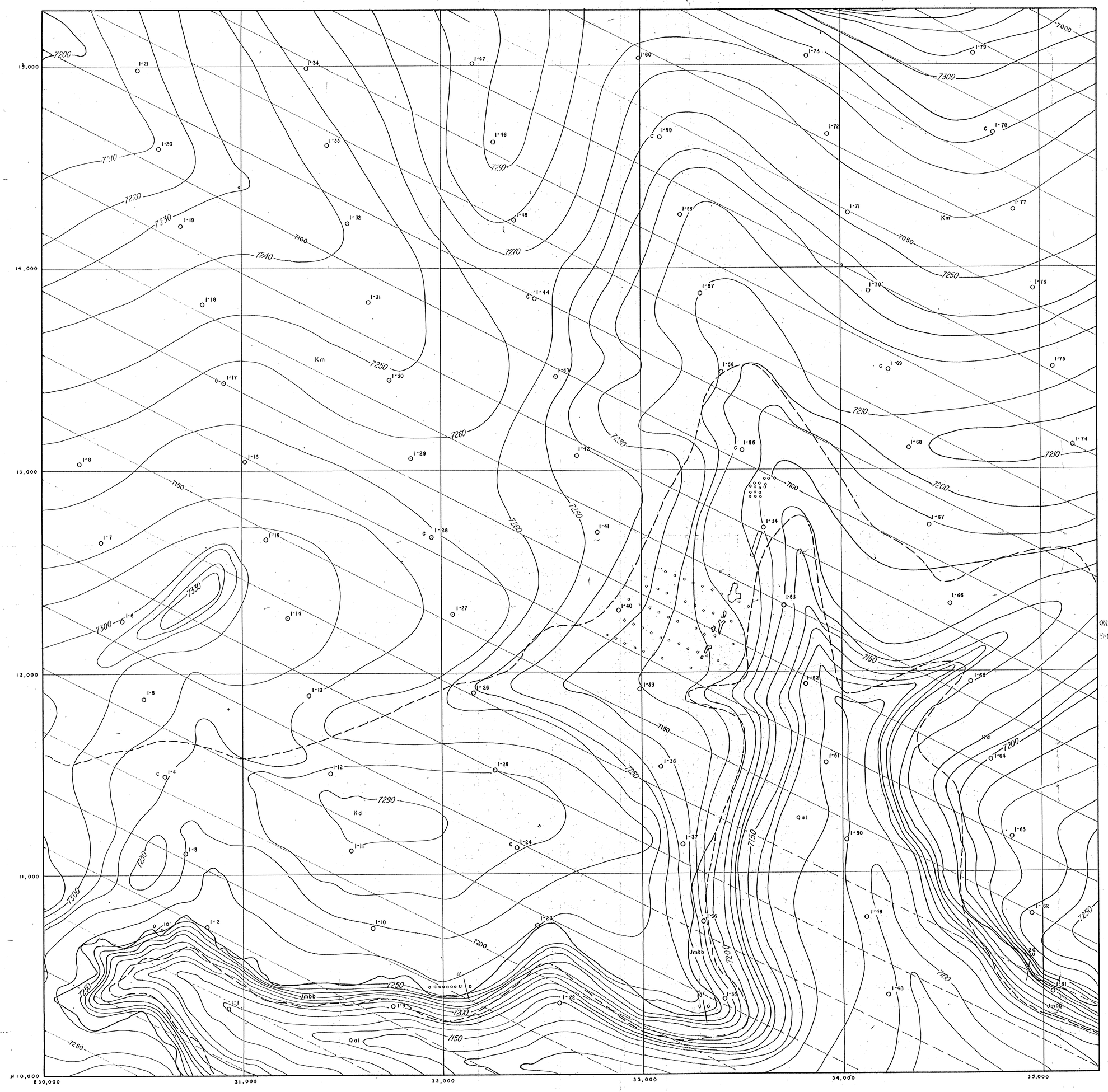


FIGURE 1

SECTION 31, T.14 N., R.10 W.