STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

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

DATE: June 18, 1953

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

SUBJECT: Final Field Team Report, DMEA Docket 2977(uranium) Mrs. Edith M. Jackson and children, applicants, Benson, Ariz.; Two Car - Golondrina claim group, Sec. 12 and adjoining sections, T. 11 S., R. 25 E., Graham Co., Ariz.

Review and Comment

I have reviewed the Field Team Report of examination of the property identified in the subject above and discussed it with H. D. Keiser, U. S. Bureau of Mines member, Uranium Commodity Committee. As a result of an examination the geologist examiner found essentially the same amount and distribution of uranium minerals as noted by H. C. Granger (U. S. Geol. Survey Trace Elements Inv. Rept. 219, January 1951, unpublished). He concludes that at no place are uranium minerals concentrated in significant amount and that it is improbable that exploration would result in discovery of significant amounts of radioactive materials.

Recommendation

I concur in the recommendation of the Field Team that Government assistance for exploration be denied.

Arthur P. Butler, Jr.

Copy to: E. Wm. Ellis (2)

IN REPLY REFER TO:

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

E. Wm. Ellis, DMEA Member
Uranium Commodity Committee
Arthur P. Butler, Jr., USGS Member
Uranium Commodity Committee
Final Field Team Report, DMEA Docket 2977(uranium) Mrs. Edith M. Jackson and children, applicants, Benson, Ariz.; Two Car - Golondrina claim group, Sec. 12 and adjoining sections, T. 11 S., R. 25 E., Graham Co., Ariz.

June 18, 1953

Review and Comment

I have reviewed the Field Team Report of examination of the property identified in the subject above and discussed it with H. D. Keiser, U. S. Bureau of Mines member, Uranium Commodity Committee. As a result of an examination the geologist examiner found essentially the same amount and distribution of uranium minerals as noted by H. C. Granger (U. S. Geol. Survey Trace Elements Inv. Rept. 219, January 1951, unpublished). He concludes that at no place are uranium minerals concentrated in significant amount and that it is improbable that exploration would result in discovery of significant amounts of radioactive materials.

Recommendation

I concur in the recommendation of the Field Team that Government assistance for exploration be denied.

Copy to: E. Wm. Ellis (2)

IN REPLY REFER TO:

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

E. Wm. Ellis, DMEA Member
Uranium Commodity Committee
Arthur P. Butler, Jr., USGS Member
Uranium Commodity Committee

June 18, 1953

Final Field Team Report, DMEA Docket 2977(uranium) Mrs. Edith M. Jackson and children, applicants, Benson, Ariz.; Two Car - Golondrina claim group, Sec. 12 and adjoining sections, T. 11 S., R. 25 E., Graham Co., Ariz.

Review and Comment

I have reviewed the Field Team Report of examination of the property identified in the subject above and discussed it with H. D. Keiser, U. S. Bureau of Mines member, Uranium Commodity Committee. As a result of an examination the geologist examiner found essentially the same amount and distribution of uranium minerals as noted by H. C. Granger (U. S. Geol. Survey Trace Elements Inv. Rept. 219, January 1951, unpublished). He concludes that at no place are uranium minerals concentrated in significant amount and that it is improbable that exploration would result in discovery of significant amounts of radioactive materials.

Recommendation

I concur in the recommendation of the Field Team that Government assistance for exploration be denied.

Copy to: E. Wm. Ellis (2)

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

June 15, 1953

Memorandum

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

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

Subject: Final Report, DMEA Docket 2977, La Golondrina Mine, Matt and Joe Lee, Graham County, Arizona.

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

It is recommended that the report be approved, and that the application for an exploration loan be denied.

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

H. D. Keiser

H. D. Keiser

OFFICE OF THE DIRECTOR

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

June 15, 1953

Memorandum

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

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

Subject: Final Report, DMEA Docket 2977, La Golondrina Mine, Matt and Joe Lee, Graham County, Arizona.

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

It is recommended that the report be approved, and that the application for an exploration loan be denied.

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

Signed

H. D. Keiser

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

224 New Customhouse
Denver 2, Colorado

June 1, 1953.

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 200

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2977 (Uranium), La Golondrina Mine, Matt and Joe Lee, Graham County, Arizona.

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

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures

Defense Minerals Administration
JUN 5 1953

Reviewed by
DMEA OPERATING COMMITTEE
6-10-53
(date)

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

C O P Y

224 New Customhouse
Denver 2, Colorado

June 1, 1953

Mr. Matt V. Lee, Dragoon, Arizona

Mr. Joe H. Lee, Box 564, Benson, Arizona

Hilda C. Willis, 265 Bennett Avenue, Long Beach, California

Gladys G. Taylor, 249 Molino Avenue, Long Beach, California

Mrs. Edith M. Jackson, Box 564, Benson, Arizona

Re: Docket DMEA-2977

Dear Messrs. and Mesdames:

Reference is made to your application for Government aid on the La Golondrina Mine.

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

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

Very truly yours,

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

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

Reviewed by
DMEA OPERATING COMMITTEE
6-10-53
(date)

HMC:mm
cc: Administrator, DMEA
WRStorms
RFRobinson
CETowle
AHKoschmann (2)
Subject
Chron.

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

200 New Customhouse
Denver 2, Colorado

May 26, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2977, La Golondrina Mine, Graham County, Arizona. Uranium.

Enclosed are the original and 10 copies of the geological report by John N. Faick of the U. S. Geological Survey covering the above docket. It has been recommended that the loan be denied.

The U. S. Bureau of Mines did not participate in this examination, and, therefore, no Bureau report will be submitted.

The brochure is enclosed.

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

Enclosures (12)

JUN 3 1953

Reviewed by
DMEA OPERATING COMMITTEE
6-10-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P.O.Box 4126, University Station
Tucson 5, Arizona

May 21, 1953

Memorandum

To: Field Team, Region IV, Denver, Colorado
Through: A. N. Koschmann

From: Raymond F. Robinson, Tucson, Arizona

Subject: Docket DMEA ~~2199~~ 2977 (Uranium), La Golondrina Mine, Graham County, Arizona

Enclosed are the original and 10 copies of the report by John Faick of the U. S. Geological Survey on the subject docket. The Bureau of Mines did not participate in this examination and therefore no Bureau report will be submitted.

The examiner finds that radioactivity on the property is confined to erratically occurring lenses of pyromorphite in fractured volcanic rocks. The degree of radioactivity for the lenses as a whole is minute; however, some few narrow veinlets contain up to .66% U_3O_8.

It appears highly improbable that significant amounts of uranium will be found by a reasonable amount of exploration. The examiner recommends denial of this application, and I concur with his reported conclusions. The brochure is enclosed.

Raymond F. Robinson
Raymond F. Robinson
Acting District Supervisor
Arizona-New Mexico

Enclosures 12

Reviewed by
DMEA OPERATING COMMITTEE
6-10-53
(date)

LA GOLONDRINA MINE
GRAHAM COUNTY, ARIZONA
DMEA ~~2799~~ 2977

URANIUM

Geology

By
John N. Faick
Geologist, U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE

6-10-53
(date)

LA GOLONDRINA MINE
GRAHAM COUNTY, ARIZONA
DMEA 2799

URANIUM

CONTENTS

	Page
Summary, Conclusions, and Recommendations	
Introduction	1
Geology	2
Conclusions and Recommendations	6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Examination of the La Golondrina claims reveals that radioactive pyromorphite occurs in veinlets in fractured volcanic rocks, and is distributed throughout several unpatented claims. The radioactive pyromorphite occurs only in trace amounts; however, in some of the veinlets specimens were obtained that contained from 0.40 to 0.66 percent U_3O_8. By using the 0.2 scale of a precision portable counter a background count of 2 or 3 divisions was obtained, and some of the more radioactive zones yielded counts ranging from 5 to 10. Counts of about 10 divisions on the 2. scale were obtained on a few high grade specimens. Pyromorphite, or any other radioactive minerals were not found to be concentrated in significant amounts at any place, consequently it is difficult to propose a program of exploration.

It is highly improbable that exploration of the Two Car-Golondrina group of claims would result in the discovery of significant amounts of radioactive material; therefore, it is recommended that this application, DMEA 2977, be denied.

INTRODUCTION

The Two Car-Golondrina group of 21 unpatented claims was examined by this writer at the request of the Defense Minerals Exploration Administration as authorized by the Defense Production Act of 1950 as amended. Application has been made to DMEA for assistance in exploring for uranium, the total cost of the exploration project is estimated to cost about $20,000.

The Two Car-Golondrina group of claims is owned jointly by the applicants, Mrs. Edith M. Jackson, Box 564, Benson, Arizona, and by her sons and daughters. The property is managed by the sons, Matt V. Lee, Dragoon, Arizona and by Joe H. Lee, 126 West Ohio Street, Tucson, Arizona.

The claims are located in the Pinaleno Mountains, Graham County, Arizona, in an area which is in the northwest corner of the Fisher Hills quadrangle map, and in the southeast corner of the Mt. Graham quadrangle. The property is partly in Sec. 12, T. 11 S., R. 25 E., and lies partly in adjacent sections. A topographic ridge divides the group of claims into two parts, a southern part situated in Owl Canyon, which drains to the southeast, and a northern part which lies in the Little Cottonwood Canyon, which drains northwestward.

The property has previously been examined by the Atomic Energy Commission[1/] and by the Geological Survey.[2/]

1/ Wright, R. J., Reconnaissance of Certain Uranium Deposits in Arizona, A.E.C. Technical Information Service RMO 679, p. 13, Dec. 1950.

2/ Granger, Harry C., An Occurrence of Radioactive Pyromorphite, Golondrina Claims, Graham County, Arizona, Trace Elements Memorandum Report 219, U. S. Geol. Survey, pp. 1-3, Jan. 1951.

Many years ago the copper prospects on the property were examined by R. L. Blanchard.[3/] Most of the copper mineralization is reported by the applicant to be concentrated in the northern part of the claims, and the lead mineralization, including radioactive pyromorphite is most abundant in the southern part of the claims.

GEOLOGY

The Two Car-Golondrina group of claims was originally located in 1915 for the purpose of prospecting traces of copper-lead-silver ores. Prospecting and development work done since the original locations were made has resulted in shipments of a few tons of copper-silver ore. Exploration and development workings consist of a few small open cuts and a couple of shallow shafts and short adits.

The area is underlain by medium grained granite and by Tertiary volcanics, most of which are rhyolite and andesite flows and agglomerates. The volcanic rocks in many places are slightly fractured and brecciated, suggesting mild readjustment to district-wide forces, but very little evidence of definite faulting or shearing was observed by this writer. It is reported by the applicant that dikes and faults are exposed in the area included within several of the northernmost claims, but this area was not visited by the writer because it is not known to contain radioactive materials. The field examination was confined to the part of the claims for which exploration is proposed and special attention was given to the zones in which the greatest concentrations of radioactive materials are known to occur.

3/ Blanchard, R. L., Unpublished private report in possession of Mrs. Edith M. Jackson, Benson, Arizona.

The radioactive material on the Two Car-Golondrina property consists of pyromorphite,[4] a lead chlorophosphate of secondary or supergene origin. It occurs as dark yellow to reddish orange mineral in the form of small crystals and powdery material. It is present as thin films or coatings on the walls of fractures and cavities, and in a few places it forms small irregular discontinuous veins. All of the pyromorphite seen by this writer is confined to fractures in the volcanic rocks, and none was observed in the granite or along the contact between the volcanic rocks and the granite. The radioactivity is due to U_3O_8 which is reported to be chemically combined with the pyromorphite, but the content of U_3O_8 in this mineral varies considerably from specimen to specimen.

The most radioactive material seen by this writer was in a discovery cut on No. 11 (?) claim which, according to the applicant, is the locality where R. J. Wright[5] found the greatest radioactivity. A few small concentrations of radioactive pyromorphite were exposed in this discovery cut. The largest concentration that was observed was in a vein in the west wall of this discovery cut and the section of the vein exposed was about 2 inches thick and 18 inches long and the vein dips slightly to the southwest. In the south face of the same discovery cut is exposed another small vein of similar material. This vein fills slightly dipping irregular fractures and is only about $\frac{1}{4}$ inch thick and 2 feet long in the exposed part.

Two samples of the best material available were collected for analysis by the Tucson office of the U. S. Bureau of Mines. Results of these samples are as follows:

4/ Identification by LaMar G. Evans, U.S.Bureau of Mines, Tucson, Arizona

5/ Op. cit., p. 13.

Description	Radiometric Analysis	Chemical Analysis
High grade specimen material of vein exposed in west wall of cut	0.26	0.221
Area 12 x 24 inches in face of cut, which includes section of irregular vein $\frac{1}{4}$ by 24 inches	0.01	0.008

Samples of the ore had been submitted by the applicant in July and August, 1950, to the U. S. Bureau of Mines, Tucson, Arizona, for mineralogical identification and interpretation. The minerals were concentrated by panning and the following results were obtained on the panned concentrate.

Sample Reference No.	Percent of U_3O_8 in Concentrate
UP 550	0.66
UP 600	0.40
UP 293	0.59

In this field examination a precision portable counter, manufactured by Nuclear Instrument and Chemical Corporation, was used. This yielded background counts of from 1.5 to 3.5 divisions on the 0.2 scale and counts of 5 or 6 divisions were obtained in many places that were slightly radioactive. In a few places counts as high as 10 divisions were obtained on the 0.2 scale. Use of the 2 scale was required only in the discovery cut on claim No. 11 (?), where specimens were obtained that yielded counts as high as 10 divisions on the 2 scale.

In the largest open cut on the claims, a cut about 50 feet long and 10 feet wide, counts ranging from about 5 to 8 divisions on the 0.2 scale were obtained. At this locality trace amounts of pyrite, chalcopyrite, chalcocite, and malachite were observed on the dump, and yellowish stains,

films, and coatings, thought to be mixtures of pyromorphite and limonite are found on the dump and in fractures in the volcanic rocks.

A dike extending southerly from the northern part of the group of claims was examined where the dike crosses the low ridge that divides the property into north and south parts. The dike was not radioactive where examined with the counter; however, a few places along the ridge revealed radioactivity in the porphyritic volcanic rocks of the same order of intensity as was found in many other places in the claims. Along the ridge background counts of from 2 to 4 divisions were obtained, and in a few small areas counts as high as 7 or 8 divisions were obtained on the 0.2 scale.

Field evidence and the above assays are interpreted by this writer to indicate that uranium ore does not occur in significant quantities, and the relatively weak response of the counter to the radioactivity is interpreted as indicating that only trace amounts of U_3O_8 are present. The rock contains such small quantities of U_3O_8 that mining and processing it is not feasible.

The writer was unable to obtain evidence of radioactivity of sufficient intensity to justify further prospecting, and geologic structures like mineralized faults, folds, or favorable beds upon which radioactive minerals might be concentrated could not be found. Because of the lack of evidence of concentrations of radioactive minerals, it is impossible to establish an exploration program that could reasonably be expected to result in the discovery of significant amounts of pyromorphite.

CONCLUSIONS AND RECOMMENDATIONS

Small quantities of radioactive pyromorphite are distributed throughout several of the Two-Car-Golondrina unpatented claims but at no place is it concentrated in significant amounts. Exploration of the property cannot be justified with the available data.

It is highly improbable that exploration of the Two Car-La Golondrina group of claims would result in the discovery of significant amounts of radioactive material; therefore, it is recommended that this application, DMEA 2977, be denied.

6/15/53 gh

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

C O P Y

224 New Customhouse
Denver 2, Colorado

June 1, 1953.

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 200

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2977 (Uranium), La Golondrina Mine, Matt and Joe Lee, Graham County, Arizona.

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

s/ W. H. KING
W. H. King

A. H. KOSCHMANN
A. H. Koschmann

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
6-10-53
(date)

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

C O P Y

224 New Customhouse
Denver 2, Colorado

June 1, 1953

Mr. Matt V. Lee, Dragoon, Arizona

Mr. Joe H. Lee, Box 564, Benson, Arizona

Hilda C. Willis, 265 Bennett Avenue, Long Beach, California

Gladys G. Taylor, 249 Molino Avenue, Long Beach, California

Mrs. Edith M. Jackson, Box 564, Benson, Arizona

Re: Docket DMEA-2977

Dear Messrs. and Mesdames:

Reference is made to your application for Government aid on the La Golondrina Mine.

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

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

Very truly yours,

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

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

Reviewed by
DMEA OPERATING COMMITTEE
6-10-53
(date)

HMC:[redacted]
cc: Administrator, DMEA
WRStorms
RFRobinson
CETowle
AHKoschmann (2)
Subject
Chron.

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

200 New Customhouse
Denver 2, Colorado

May 26, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2977, La Golondrina Mine, Graham County, Arizona. Uranium.

Enclosed are the original and 10 copies of the geological report by John N. Feick of the U. S. Geological Survey covering the above docket. It has been recommended that the loan be denied.

The U. S. Bureau of Mines did not participate in this examination, and, therefore, no Bureau report will be submitted.

The brochure is enclosed.

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

Enclosures (12)

Reviewed by
DMEA OPERATING COMMITTEE

6-10-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O.Box 4126, University Station
Tucson 5, Arizona

May 21, 1953

Memorandum

To: Field Team, Region IV, Denver, Colorado
Through: A. H. Koschmann

From: Raymond F. Robinson, Tucson, Arizona

Subject: Docket DMEA ~~2799~~ 2977 (Uranium), La Colandrina Mine, Graham County, Arizona

Enclosed are the original and 10 copies of the report by John Faick of the U. S. Geological Survey on the subject docket. The Bureau of Mines did not participate in this examination and therefore no Bureau report will be submitted.

The examiner finds that radioactivity on the property is confined to erratically occurring lenses of pyromorphite in fractured volcanic rocks. The degree of radioactivity for the lenses as a whole is minute; however, some few narrow veinlets contain up to .66% U_3O_8.

It appears highly improbable that significant amounts of uranium will be found by a reasonable amount of exploration. The examiner recommends denial of this application, and I concur with his reported conclusions. The brochure is enclosed.

Raymond F. Robinson

Raymond F. Robinson
Acting District Supervisor
Arizona-New Mexico

Enclosures 12

Reviewed by
DMEA OPERATING COMMITTEE
6-10-53
(date)

LA COLOMBRINA MINE
GRAHAM COUNTY, ARIZONA
DMEA ~~2799~~
2977
URANIUM

Geology

By
John W. Faick
Geologist, U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
6-10-53
(date)

LA COLORADINA MINE
GRAHAM COUNTY, ARIZONA
DMA 2799

URANIUM

CONTENTS

	Page
Summary, Conclusions, and Recommendations	
Introduction	1
Geology	2
Conclusions and Recommendations	6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Examination of the La Galendrina claims reveals that radioactive pyromorphite occurs in veinlets in fractured volcanic rocks, and is distributed throughout several unpatented claims. The radioactive pyromorphite occurs only in trace amounts; however, in some of the veinlets specimens were obtained that contained from 0.40 to 0.66 percent U_3O_8. By using the 0.2 scale of a precision portable counter a background count of 2 or 3 divisions was obtained, and some of the more radioactive zones yielded counts ranging from 5 to 10. Counts of about 10 divisions on the 2. scale were obtained on a few high grade specimens. Pyromorphite, or any other radioactive minerals were not found to be concentrated in significant amounts at any place, consequently it is difficult to propose a program of exploration.

It is highly improbable that exploration of the Two Car-Galendrina group of claims would result in the discovery of significant amounts of radioactive material; therefore, it is recommended that this application, IMBA 2977, be denied.

INTRODUCTION

The Two Car-Colondrina group of 21 unpatented claims was examined by this writer at the request of the Defense Minerals Exploration Administration as authorized by the Defense Production Act of 1950 as amended. Application has been made to DMEA for assistance in exploring for uranium, the total cost of the exploration project is estimated to cost about $80,000.

The Two Car-Colondrina group of claims is owned jointly by the applicants, Mrs. Edith M. Jackson, Box 564, Benson, Arizona, and by her sons and daughters. The property is managed by the sons, Matt V. Lee, Dragoon, Arizona and by Joe H. Lee, 126 West Ohio Street, Tucson, Arizona.

The claims are located in the Pinaleno Mountains, Graham County, Arizona, in an area which is in the northwest corner of the Fisher Hills quadrangle map, and in the southeast corner of the Mt. Graham quadrangle. The property is partly in Sec. 12, T. 11 S., R. 25 E., and lies partly in adjacent sections. A topographic ridge divides the group of claims into two parts, a southern part situated in Owl Canyon, which drains to the southeast, and a northern part which lies in the Little Cottonwood Canyon, which drains northwestward.

The property has previously been examined by the Atomic Energy Commission[1] and by the Geological Survey.[2]

1/ Wright, R. J., Reconnaissance of Certain Uranium Deposits in Arizona, A.E.C. Technical Information Service RMO 679, p. 13, Dec. 1950.

2/ Granger, Harry C., An Occurrence of Radioactive Pyromorphite, Colondrina Claims, Graham County, Arizona, Trace Elements Memorandum Report 219, U. S. Geol. Survey, pp. 1-3, Jan. 1951.

Many years ago the copper prospects on the property were examined by R. L. Blanchard.[3] Most of the copper mineralization is reported by the applicant to be concentrated in the northern part of the claims, and the lead mineralization, including radioactive pyromorphite is most abundant in the southern part of the claims.

GEOLOGY

The Two Car-Colondrina group of claims was originally located in 1915 for the purpose of prospecting traces of copper-lead-silver ores. Prospecting and development work done since the original locations were made has resulted in shipments of a few tons of copper-silver ore. Exploration and development workings consist of a few small open cuts and a couple of shallow shafts and short adits.

The area is underlain by medium grained granite and by Tertiary volcanics, most of which are rhyolite and andesite flows and agglomerates. The volcanic rocks in many places are slightly fractured and brecciated, suggesting mild readjustment to district-wide forces, but very little evidence of definite faulting or shearing was observed by this writer. It is reported by the applicant that dikes and faults are exposed in the area included within several of the northernmost claims, but this area was not visited by the writer because it is not known to contain radioactive materials. The field examination was confined to the part of the claims for which exploration is proposed and special attention was given to the zones in which the greatest concentrations of radioactive materials are known to occur.

3/ Blanchard, R. L., Unpublished private report in possession of Mrs. Edith M. Jackson, Benson, Arizona.

The radioactive material on the Two Car-Golondrina property consists of pyromorphite,[4] a lead chlorophosphate of secondary or supergene origin. It occurs as dark yellow to reddish orange mineral in the form of small crystals and powdery material. It is present as thin films or coatings on the walls of fractures and cavities, and in a few places it forms small irregular discontinuous veins. All of the pyromorphite seen by this writer is confined to fractures in the volcanic rocks, and none was observed in the granite or along the contact between the volcanic rocks and the granite. The radioactivity is due to U_3O_8 which is reported to be chemically combined with the pyromorphite, but the content of U_3O_8 in this mineral varies considerably from specimen to specimen.

The most radioactive material seen by this writer was in a discovery cut on No. 11 (?) claim which, according to the applicant, is the locality where R. J. Wright[5] found the greatest radioactivity. A few small concentrations of radioactive pyromorphite were exposed in this discovery cut. The largest concentration that was observed was in a vein in the west wall of this discovery cut and the section of the vein exposed was about 2 inches thick and 18 inches long and the vein dips slightly to the southwest. In the south face of the same discovery cut is exposed another small vein of similar material. This vein fills slightly dipping irregular fractures and is only about ¼ inch thick and 2 feet long in the exposed part.

Two samples of the best material available were collected for analysis by the Tucson office of the U. S. Bureau of Mines. Results of these samples are as follows:

4/ Identification by Lellar G. Evans, U.S.Bureau of Mines, Tucson, Arizona

5/ Op. cit., p. 13.

Description	Radiometric Analysis	Chemical Analysis
High grade specimen material of vein exposed in west wall of cut	0.26	0.221
Area 12 x 24 inches in face of cut, which includes section of irregular vein ½ by 24 inches	0.01	0.006

Samples of the ore had been submitted by the applicant in July and August, 1950, to the U. S. Bureau of Mines, Tucson, Arizona, for mineralogical identification and interpretation. The minerals were concentrated by panning and the following results were obtained on the panned concentrate.

Sample Reference No.	Percent of U_3O_8 in Concentrate
UP 550	0.66
UP 600	0.40
UP 893	0.59

In this field examination a precision portable counter, manufactured by Nuclear Instrument and Chemical Corporation, was used. This yielded background counts of from 1.5 to 3.5 divisions on the 0.2 scale and counts of 5 or 6 divisions were obtained in many places that were slightly radioactive. In a few places counts as high as 10 divisions were obtained on the 0.2 scale. Use of the 2 scale was required only in the discovery cut on claim No. 11 (?), where specimens were obtained that yielded counts as high as 10 divisions on the 2 scale.

In the largest open cut on the claims, a cut about 50 feet long and 10 feet wide, counts ranging from about 5 to 8 divisions on the 0.2 scale were obtained. At this locality trace amounts of pyrite, chalcopyrite, chalcocite, and malachite were observed on the dump, and yellowish stains,

films, and coatings, thought to be mixtures of pyromorphite and limonite are found on the dump and in fractures in the volcanic rocks.

A dike extending southerly from the northern part of the group of claims was examined where the dike crosses the low ridge that divides the property into north and south parts. The dike was not radioactive where examined with the counter; however, a few places along the ridge revealed radioactivity in the porphyritic volcanic rocks of the same order of intensity as was found in many other places in the claims. Along the ridge background counts of from 2 to 4 divisions were obtained, and in a few small areas counts as high as 7 or 8 divisions were obtained on the 0.2 scale.

Field evidence and the above assays are interpreted by this writer to indicate that uranium ore does not occur in significant quantities, and the relatively weak response of the counter to the radioactivity is interpreted as indicating that only trace amounts of U_3O_8 are present. The rock contains such small quantities of U_3O_8 that mining and processing it is not feasible.

The writer was unable to obtain evidence of radioactivity of sufficient intensity to justify further prospecting, and geologic structures like mineralized faults, folds, or favorable beds upon which radioactive minerals might be concentrated could not be found. Because of the lack of evidence of concentrations of radioactive minerals, it is impossible to establish an exploration program that could reasonably be expected to result in the discovery of significant amounts of pyromorphite.

CONCLUSIONS AND RECOMMENDATIONS

Small quantities of radioactive pyromorphite are distributed throughout several of the Two-Car-Colombrina ungatented claims but at no place is it concentrated in significant amounts. Exploration of the property cannot be justified with the available data.

It is highly improbable that exploration of the Two Car-La Colombrina group of claims would result in the discovery of significant amounts of radioactive material; therefore, it is recommended that this application, EMEA 2977, be denied.

6/8/53 - dl.

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

224 New Customhouse
Denver 2, Colorado

June 1, 1953

Mr. Matt V. Lee, Dragoon, Arizona

Mr. Joe H. Lee, Box 564, Benson, Arizona

Hilda C. Willis, 265 Bennett Avenue, Long Beach, California

Gladys G. Taylor, 249 Molino Avenue, Long Beach, California

Mrs. Edith M. Jackson, Box 564, Benson, Arizona

Re: Docket DMEA-2977

Dear Messrs. and Mesdames:

Reference is made to your application for Government aid on the La Golondrina Mine.

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

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

Very truly yours,

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

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

HMC:cwm

cc: Administrator, DMEA
WRStorms
RFRobinson
CETowle
AHKoschmann (2)
Subject
Chron.

C O P Y

3/2/53

Dear Mr. King:

Enclosed is an application in quadruplicate for a $20,000.00 loan on uranium, for diamond drilling. I have not enclosed a map as to location of D.D. Holes as this matter can be best arranged when engineers and Geologists are on the grounds. Tentatively have suggested a 50' offset drilling program mostly vertical but the pitch of the holes can be altered to give the greatest amount of information in this area.

Thanking you most kindly for your cooperation in this matter.

I remain

Sincerely yours,

/s/ M.V. Lee

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 13 1953

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

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

Not to be filled in by applicant

Docket No. DMEA-2977
Metal or Mineral
Date Received 4-13-53
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Matt. V. Lee, Dragoon Ariz., Joe H. Lee, Box 564, Benson, Ariz., Hilda C. Willis, 265 Bennett Ave., Long Beach, California, Gladys G. Taylor, 249 Molino Ave., Long Beach, Calif. Mrs. Edith M. Jackson, Box 564, Benson, Arizona.

(*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. Co-owners.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. none

(*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 Section 13 (?) T-11S, R-25E, consisting of the Two Car- Golondrina Group, in the County of Graham, Arizona, being claims 1 to 21 inc lusive, recorded in Record of Mines, Book 31, Pages 186 to 207 incl., Graham County Arizona.

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

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Owners, unpatented mining claims.

(*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. none.

(*e*) If you own the land, describe any liens or encumbrances on it No liens or encumbrances.

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. See 3 a above and 3 b.

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. No production.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. See Page #1 attached hereto

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See page #1 attached hereto

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power. Plenty of manpower is available as well as materials and supplies also water can be had. Power will have to be generated as diesel, etc.

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

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. See Page #1 hereto attached.

(*c*) The work will start within 10 days and be completed within 90 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See page #1 hereto attach

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: See p# 1

(*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.). Contract to R. F. Dannelley-(Tentative)

(*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. all labor except supervision

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

(*d*) *Operating equipment.*—Furnish an itemized list of all operating equipment intended to be used, 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. See estimated drilling contract hereto attached None

(*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. None None

(*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. None

(*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. See Robert F Dannelley estimated contract.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above. None.

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

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

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

[X] Money [X] 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 March 30, 1953.

W O Fee
(Applicant)

By Jos H Fee
Hilda C Wells
Gladys G. Taylor
Edith M Jackson

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

#4. (a) Present Mining operations consist of a cut 30 feet long, a tunnel 50 feet and shallow cuts and a tunnel approximately 75 feet long with a Winze deep (Winze not accessible).

(c) See A. E. C. --RM0679 By Robert J. Wright in which he states (page 13- AEC book): This property has the indications of developing into a large Uranuim deposit and this opinion is borne out by the findings of the AEC, R. J. Wright and by Mr. R. L. Blanchard, Mining Engineer and Geologist and Prof. Carpenter of Wm. A Baher Organization in Chicago Ill., and from past experiences, we feel that this property has a great deal of merit and should be developed in as much as the U 308 is in a Pyromorphite which should a good value in secondary minerals - lead - Also, untill such time as diamond drilling expleres furthe r, it is reasonable to believe that the greatly leached condition of the surface and soft nature of the Porphyry present, would tend to indicate a concentration area at a depth so far not yet determined. We estimate that approximately $20,000.00 will put down 2 holes to primary zones (approximately 600 feet each - 1200 feet.); Also-- 3800 ft. of drilling on a 50 foot offset basis ove r the present out crop , along the entire broad shear zone. This will no doubt prove enough to plan further on a development or mining basis as the case may indicate.

(d) The project can be reached by a passable road six miles from paved highway 666. We are putting in a passable road to the actual workings. Willcox Arizona is approximately 25 miles, Safford Arizona is 30 miles, Luzina is a siding on the main line of the Southern Pacific R. R., about 12 miles from the property.

#5. (b) See #4 (d)- Main drilling to be over the broad Shear Zone with 2 holes to primary ore zones to give definite information as to the U308 being at this area and depth. According to the estimates as furnished (copy herewith included) average hole will be 200 ft. minnimum.

(d) The app.icants M. V. Lee and Joe H. Lee have been in mining over 30 years as foreman, Supts, managers, miners etc.

#6. Estimates of Cost: We submit a copy of estimated drilling cost etc. by Robert F. Dannelley of Superior, Arizona , Box 472.

CORE DRILLING PROPOSAL
By Robert F. Danneley
Box 472, Superior, Ariz.

Mr. M. V. Lee
Dragoon, Arizona.

Dear Mr. Lee:-

In response to our meeting on your property January 15, 1952 to discuss a core drilling program I am herein submitting a schedule on costs.

Items to be supplied by you:

1. Taking and keeping your sludge samples.
2. Removal and logging of cores from the core trough.
3. Permission to obtain drill water from a reservoir or well some 4 miles distant.
4. Drill locations to be leveled and dug to enable a setup on material in place, with understanding that it may be weathered.

Operating agreement by me:

1. The clearing of sludge from the hole at each 5 ft. intervals, unless you may desire it at longer intervals.
   We will take samples at any intervalof your choosing in event of a color change, or an apparent change in formation.

2. To plug drill to solid formation or at any time desired by you if core recovery is not continuous enough to give a proper balance between core and sludge quantities.
3. Core pulls to be at 10 ft. intervals or until blocked.
4. To maintain a correct drilling account as to hole number and daily depth.
   To mark the depth on each bottom piece of core if you se desire.
   To log each sludge sample by number and respective depth if desired.
5. To maintain 2 circuits of settling tanks for your sludge samples.
6. To supply you with compressed air for filtering your sludge samples should you use this method.
7. To haul water for the drilling operation.

Depth cost schedule:

1. Start hole with NX size to accommodate surface casing $5.00 per ft. (5 to 10 ft. usually required.)
2. 2 inch standard casing at .60 pr. ft. or you furnish it.
3. Settlingand cementing 2 inch casing at----------$1.50 pr. ft
4. Coring or plug drilling EX size surface to 200 ft. at $4.50 pr.ft.
5. Coring or plug drilling EX size 200 ft. to 300 ft. at $4.95 pr. ft
6. Coring or plug drilling EX size 300 ft. to 400 ft. at $5.44 pr. ft
7. Coring or plug drilling EX size 400 to 500 ft. at $5.98 pr.ft.
8. Coring or plug drilling EX size 500 to 600 ft. at $6.47 pr.ft.

9. Should EX casing be necessary below surface casing it will be necessary to ream hole to AX size at $2.00 per ft.
10. I will furnish without charge EX casing to a depth of 100 ft. providing we are permitted to pull same upon completing hole. If you wish to retain casing in the hole it may be had at our cost plus freight which is usually from $1.10 to $1.35 pr.ft.
11. If casing is required below 100 ft. I shall expect you to purchase all casing at cost and we will pull free of charge whatever possible.
12. Setting charge on all EX casing will be at --------.50 pr. ft.
13. Cementing EX hole and re-drilling cement at $2.50 pr. ft.

The above cost schedule is based on an expected 3,000 ft of drilling in holes from 200 to 600 ft.
We shall expect a $50.00 moving charge on all holes less than 200 ft. unless it is an incomplete hole, in which case there will not be a moving charge.
In view of the expected 3,000 ft. of drilling I shall consider 2,000 ft. or more sufficient to offset the cost of moving on the property, but in event the job is cancelled out before 2,000 ft. a moving charge of $400.00 is expected to somewhat offset my labor committments to employed help, along with moving on and off the property.
I will carry appropriate Industrial Insurance on my employees.
Should there be waiting time in excess of one day when deciding the next hole location or other delay you might authorize, I will have payroll to keep and therefore it will be at the rate of $18.00 a day per man. Losing such shifts will be charged to you.

(Sgd.) Robert F. Dannelley.