MAR 12 1956

Mr. G. C. Ridland
Interstate Mining and Exploration
Corporation
1036 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA-4009 (Uranium)
White Signal Property
Grant County, New Mexico

Dear Mr. Ridland:

This will acknowledge your letter dated March 7, 1956, in which you request that this agency return to you maps and papers supporting your application for financial assistance on an exploration project, Docket No. DMEA-4009.

In accordance with your request, there is enclosed, herewith, two copies each of the Lease and Option between the Interstate Mining and Exploration Corporation and E. B. and Ethel B. Killion, maps showing the proposed exploration drilling, maps showing claims at White Signal, New Mexico, overlay maps showing the proposed work and enlarged overlay maps showing the proposed work.

Sincerely yours,

ROBERT E. ADAMS
Robert E. Adams, Chief
Operations Control and
Statistics Division

Enclosures 10

REAdams:mm - 3/12/56
Copy to: Adm. R. File
Mail & Files
Chron.

INTERSTATE MINING AND EXPLORATION CORPORATION
1036 FIRST NATIONAL BANK BUILDING
DENVER 2, COLORADO
Telephone: AMherst 6-0321

RECEIVED
MAR - 9 1956

March 7, 1956

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-4009 (Uranium)
White Signal Property
Grant County, New Mexico

Dear Mr. Mittendorf:

Thank you for your letter of February 10, 1956, and for considering our application.

If it is not too much trouble for you, would you kindly return the maps and papers supporting our application to us.

Yours very truly,

INTERSTATE MINING & EXPLORATION CORP.

G. C. Ridland

G. C. Ridland

GCR:bh

700

FILE COPY
Surname:

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

[redacted] 1 0 1956

Interstate Mining and Exploration Corp.
1036 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA-4009 (Uranium)
White Signal Property
Grant County, New Mexico

Gentlemen:

Your application for aid in an exploration project and other information available to us in Washington concerning the 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 some uranium mineralization on your property, indicates to us that the probability of disclosing minable ore reserves is not sufficiently promising to justify Government participation. We regret to advise you that, under these circumstances, your application for exploration assistance is denied.

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/izm 2-9-56
cc to: Docket
Code 700
Mr. Ching
Admr.'s Reading File
Operating Committee
DMEA Field Team, Region III (2)
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

R.S.L.

Docket Copy

700 Ching Ellis

SUMMARY OF PROPOSED PROJECT

Object: Denial of application for an exploration project.

Docket No.: DMEA-4009

Commodity: Uranium

Applicant: Interstate Mining and Exploration Corporation
1036 First National Bank Building
Denver 2, Colorado

Property: White Signal Property, consisting of 6 unpatented lode mining claims, Blue Jay Amended, Blue Jay Ext. Nos. 1 and 6, Eugenia No. 1, Raven No. 1, and Shamrock No. 1, in Sections 23 and 26, T. 20 S., R. 15 W., Grant County, New Mexico. Applicant is the lessee and holds a lease and option on some 45 claims of which 5 of the above 6 claims are a part.

Date of Application: October 4, 1955

Amount of Application: $60,500.00

Work Proposed:

1. On Blue Jay Hill drill 6 - 800-foot holes, inclined 65° in a northwesterly direction to cut a mineralized vein at a depth below the water table.

2. Sink a 100-foot shaft on the main showing on Blue Jay Hill and drift 200 feet along the vein from the bottom of the shaft.

3. Deepen the inclined shaft on the Shamrock No. 1 claim by 100 feet and drift from shaft along dike for 200 feet.

Estimated Cost:

4,800 feet diamond drilling @ $5.00/ft.	$24,000.00
200 feet shaft sinking @ $110.00/ft.	22,000.00
400 feet drifting @ $37.00/ft. ($36.25)	14,500.00
Estimated Total Cost	$60,500.00
Government Participation @ 75%	$45,375.00

Field Team Report: January, 1956, T. M. Romslo, USBM, & Leonid Bryner, USGS:

The property is underlain by pre-Cambrian granite which has been intruded by a variety of dikes. A few thin quartz-pyrite veins are closely associated with the dikes. Uranium, probably as torbernite and an unidentified mineral, is found in intermediate or basic dikes near oxidized quartz-pyrite veins on Blue Jay Hill and Shamrock No. 1 claims.

In the Blue Jay Hill deposit the uranium minerals are concentrated mainly in three small showings, and in only one of these does the concentration reach commercial grade. Five diamond drill holes have undercut the three showings from 50 to 100 feet below the outcrop and have indicated that while the favorable host rock persists at these depths, uranium mineralization has either declined or disappeared.

A torbernite ore body on the Shamrock No. 1 claim is a very thin, crudely pipe-shaped deposit with such a small cross-section that there is little possibility of finding a significant tonnage of ore in its downdip extension.

Even if primary uranium minerals were found at depth in either of these deposits, it is unlikely that the distribution or grade would improve significantly.

The Blue Jay Hill deposits have been studied and rather extensively sampled previously by Granger and Bauer of the Geological Survey. The highest assay ran 0.11% U over a width of 3 feet. All other assays appear to be considerably lower. This emphasizes the limited distribution of ore-grade material. Results from the five diamond drill holes also indicated that mineralization in this deposit is spotty and low grade.

The Shamrock No. 1 deposit had been previously studied and sampled by the AEC. While the sampling shows some fairly good values, the sample widths in most cases represented ore faces of very limited extent.

It is recommended that the application be denied.

Commodity Group Comments:

USGS, N. E. Nelson, January 31, 1956:

The examiners found evidence of scattered low-grade uranium mineralization and two very small centers of ore-grade material. They infer that higher grade material should not be expected in the deeper work proposed by the Applicant and that the ore grade material exposed does not indicate appreciable tonnage. Concurs with the recommendation for denial.

USBM, John E. Crawford, February 7, 1956:

Discussed the report of examination with the AEC representative. Concurs in the recommendation of denial.

Rare & Miscellaneous Metals Division, Michael Ching, February 9, 1956:

A considerable amount of preliminary work had already been completed on the property. This consisted of several trenches and 5 diamond drill holes on Blue Jay Hill, and a 55-foot inclined shaft on the Shamrock No. 1 claim. This work enabled the USGS and the AEC to investigate and sample the most favorable showings on the property prior to the DMEA investigation. The considerable amount of pertinent information thus made available to the DMEA examiners, together with their own examinations, appear to have enabled them to make a very complete appraisal of the potential of this property.

Conclusions and Recommendations:

The available information shows that the chances of finding a significant ore body on the property are poor. Nor is there anything to indicate that primary uranium mineralization is likely to be found in depth. It is recommended that the application be denied.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

2/7/56 gla

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

February 7, 1956

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 4009, Interstate Mining and Exploration Corporation, Blue Jay Group of claims, Grant County, New Mexico

I have reviewed the report of examination, Interstate Mining and Exploration Corporation, DMEA Docket 4009, dated January 20 and received in this office January 30. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The property of Interstate Mining and Exploration Corporation, upon examination by DMEA personnel on November 8 and 9, 1955, was found to contain three small anomalous showings. Of the showings, only one contains material of commercial grade. Diamond drilling 50 to 100 feet beneath the surface, indicates that the grade declines with depth.

Denial of the requested aid is recommended by the Field Team, who believe that little chance exists of discovering significant amounts of uranium ore on subject property. We concur in the recommendation of denial.

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

John E. Crawford

John E. Crawford

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FEB - 7 1956

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

February 7, 1956

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Uranium Commodity Committee, Room 4445

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

February 7, 1956

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John H. Crawford

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FEB - 7 1956

1-31-56 [illegible]

IN REPLY REFER TO:

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

RECEIVED
JAN 31 1956

January 31, 1956

Re: DMEA 4009
Interstate Mining and
Exploration Corporation
White Signal Group
Grant County, New Mexico
$60,500.00 - Uranium

Memorandum

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

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team report.

The applicant requested assistance in exploring by deep diamond drill holes, shafts and drifting (a) a radioactive zone along a rhyolite dike in Precambrian granite and (b) a radioactive 'spot' at the intersection of a fault and a diabase dike.

Considerable work, including 5 diamond drill holes, has been done at (a), and at (b) a shaft has been sunk 55 feet. The examiners found evidence, principally through sampling of the U. S. Geological Survey (Granger and Bauer) and the applicant and by counter and scintillator surveys, of scattered low-grade uranium mineralization and two very small centers of ore grade material. Check sampling failed to extend the small showings and the examiners infer that higher grade material should not be expected in the deeper work proposed by the applicant, and that the 'spots' of ore grade material indicate no appreciable tonnage.

The inferences of the examiners are well supported and the recommendation that the application be denied is justified.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
JAN 31 1956

January 31, 1956

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Interstate Mining and
Exploration Corporation
White Signal Group
Grant County, New Mexico
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The inferences of the examiners are well supported and the recommendation that the application be denied is justified.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-1/31/56
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

IN REPLY REFER TO:

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

RECEIVED
JAN 31 1956

January 31, 1956

Re: DMEA 4009
Interstate Mining and
Exploration Corporation
White Signal Group
Grant County, New Mexico
$60,500.00 - Uranium

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I concur with the recommendation.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-1/31/56
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

IN REPLY REFER TO:

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

RECEIVED
JAN 31 1956

January 31, 1956

Re: DMEA 4009
Interstate Mining and
Exploration Corporation
White Signal Group
Grant County, New Mexico
$60,500.00 - Uranium

Memorandum

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From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team report.

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The inferences of the examiners are well supported and the recommendation that the application be denied is justified.

I concur with the recommendation.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-1/31/56
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

1-31-56 dgm

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

RECEIVED
JAN 26 1956

January 20, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, Docket DMEA 4009 (Uranium), Interstate Mining and Exploration Corporation, Blue Jay Group of claims, Grant County, New Mexico

Enclosed are the original and three copies of the Report of Examination on the subject property.

The field examiners believe that there is little chance of discovering significant amounts of uranium ore by additional exploratory work. They recommend that the application be denied, and we concur in this recommendation.

DMEA Field Team, Region III

By W. M. Traver
W. M. Traver

E. N. Harshman
E. N. Harshman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(date)

DMEA
Date Rec'd.

RECEIVED
JAN 26 1956

JAN 6 1956

BUREAU OF MINES
Denver, Colorado

Box 4097
Tucson 5, Arizona

January 4, 1956

Memorandum

TRANSMITTED
JAN 20 1956

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

From : Superintendent, Southwest Experiment Station

Subject : Field Examination Report, Docket DMEA-4009, Interstate Mining & Exploration Corp.'s White Signal Uranium Claims, White Signal Mining District, Grant County, N. Mex.

Enclosed are original and 10 copies of the section on Summary, Conclusions and Recommendations by T. M. Romslo of the Bureau of Mines and Leonid Bryner of the Geological Survey, and the section on Engineering by Romslo for the above report. A separate section on Geology will be submitted by the Survey.

As there seems little chance of discovering significant amounts of uranium ore by additional exploratory work, the DMEA examiners have recommended that Government aid be denied the applicant. I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (10)
J. N. Faick
DMEA-4009
DF

WRStorms:frj

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(date)

RECEIVED
JAN 26 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
JAN 20 1956

DMEA-4009, Interstate Mining and Exploration Corporation

White Signal Uranium Property

Grant County, New Mexico

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

Leonid Bryner, Geologist
U. S. Geological Survey

January 1956

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(date)

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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By T. M. Romslo[1] and Leonid Bryner[2]

The Interstate Mining and Exploration Corp. applied for Governmental aid in exploration of 2 uranium deposits on the White Signal property, White Signal Mining District, Grant County, N. Mex. The corporation proposed to diamond drill one of the deposits, the Blue Jay Hill, and sink and drift on the other, the Shamrock No. 1. Total cost of the explorations was estimated at $60,500.00. Field investigations of the property were made for the Defense Minerals Exploration Administration under docket DMEA-4009. Previously, the Blue Jay Hill had been examined by the U. S. Geological Survey, and the Shamrock had been examined by the Atomic Energy Commission.

Uranium minerals first were recognized in the area in 1920, and were discovered on the applicant's property in 1949. During 1949, overburden was removed from 4 small localities of the Blue Jay Hill deposit. Little or no work was done from then to 1952, when the applicant acquired the property. From 1952 to 1955, the applicant intermittently explored the property by trenching and diamond drilling. No uranium ore has been produced.

The White Signal property is underlain by pre-Cambrian granite that has been intruded by a variety of dikes. Uranium, probably as torbernite and another unidentified secondary mineral, is commonly found in intermediate or basic dikes near oxidized quartz-pyrite veins.

1/ Mining Engineer, U. S. Bureau of Mines
2/ Geologist, U. S. Geological Survey

At the Blue Jay Hill deposit this favorable combination of dikes and veins coincides with the 3 highest grade showings. But unless only a few square feet of the best part of each showing is considered, the grade of these showings is sub-commercial. Diamond drilling, 50 to 100 feet beneath the surface, indicates that the grade declines with depth.

Uranium mineralization on the Shamrock No. 1 claim has the form of torbernite localized along the intersection of a fault with the footwall of a diabase dike. This restricts the cross section of the deposit to a few square feet, and makes it improbable that the deposit contains a significant tonnage of ore in its downdip extension.

Even if, as is probable, primary uranium minerals could be found at depth in either of these deposits, it is unlikely that the distribution or grade would improve significantly. Therefore denial of the requested aid in exploration of the White Signal property is recommended.

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DMEA-4009, INTERSTATE MINING AND EXPLORATION CORPORATION
WHITE SIGNAL URANIUM PROPERTY
GRANT COUNTY, NEW MEXICO

TRANSMITTED
JAN 20 1956

Engineering Report

By T. M. Romslo
Mining Engineer
U. S. Bureau of Mines

JANUARY 1956

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(date)

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DMEA-4009, INTERSTATE MINING AND EXPLORATION CORPORATION
WHITE SIGNAL URANIUM PROPERTY
GRANT COUNTY, NEW MEXICO

CONTENTS

Engineering report	Page
Introduction	1
Location and accessibility	2
Physical features and climate	2
History and production	2
Extent and ownership of property	3
Description of deposits	3
Ore reserves	5
Conclusions and recommendation	5

ILLUSTRATIONS

Figure		Following page
1	Location map	2
2	Claim map	3
3	(See geologic report)	

INTRODUCTION

The Defense Minerals Exploration Administration received an application from the Interstate Mining and Exploration Corp. for aid in exploring for uranium on the White Signal Property, Grant County, N. Mex. The application was received October 4, 1955. It was docketed as DMEA-4009, reviewed by the Operating Committee, then forwarded to the Field Team, Region III for a field examination of the property.

The applicant asked assistance in exploring 2 radioactive zones, one by drilling six 800-foot diamond drill holes, and the other by sinking 2 100-foot shafts and by driving 200 feet of drift from each of the shafts. Total cost of the explorations was estimated at $60,500.00.

The property was examined on November 8 and 9, 1955 by Leonid Bryner, geologist, U. S. Geological Survey and T. M. Romslo, mining engineer, U. S. Bureau of Mines. Representatives of the applicant, B. C. Ridland, consulting geologist, and Sydney Bell, the corporation's geologist, accompanied the examining team on the last day.

The deposit on Blue Jay Hill and another on Shamrock No. 1 claim had previously been studied by the U. S. Geological Survey and the Atomic Energy Commission, respectively. Data from these investigations were available to the DMEA examining team.

LOCATION AND ACCESSIBILITY

The White Signal property is situated about 16 miles southeasterly from Silver City, N. Mex., in secs. 23 and 26, T. 20 S., R. 15 W., Grant County, N. Mex. (figure 1). It may be reached from Silver City by traveling 16.8 miles south on State Highway 180 to a graded dirt road that branches to the left at a few hundred yards beyond the settlement of White Signal. Proceed on the southeasterly trending dirt road that traverses a portion of the property and skirts the workings on Blue Jay Hill at about 0.7 miles from the Highway.

TOPOGRAPHY, PHYSICAL FEATURES, AND CLIMATE

The White Signal property is at an average altitude of about 6,000 feet in an area of gently rolling terrain. Drainage is southeasterly via McDonald Draw.

Vegetation consists mainly of forage grasses and scattered small groves of oak trees.

Summers are pleasant and winters are not severe.

Annual precipitation of about 15 inches occurs principally as heavy rainfalls in the summer, and light rain and snowfalls during the winter.

HISTORY AND PRODUCTION

Gold, silver and copper were discovered in the White Signal district in the late 1880's. Rich ores were shallow and soon exhausted.

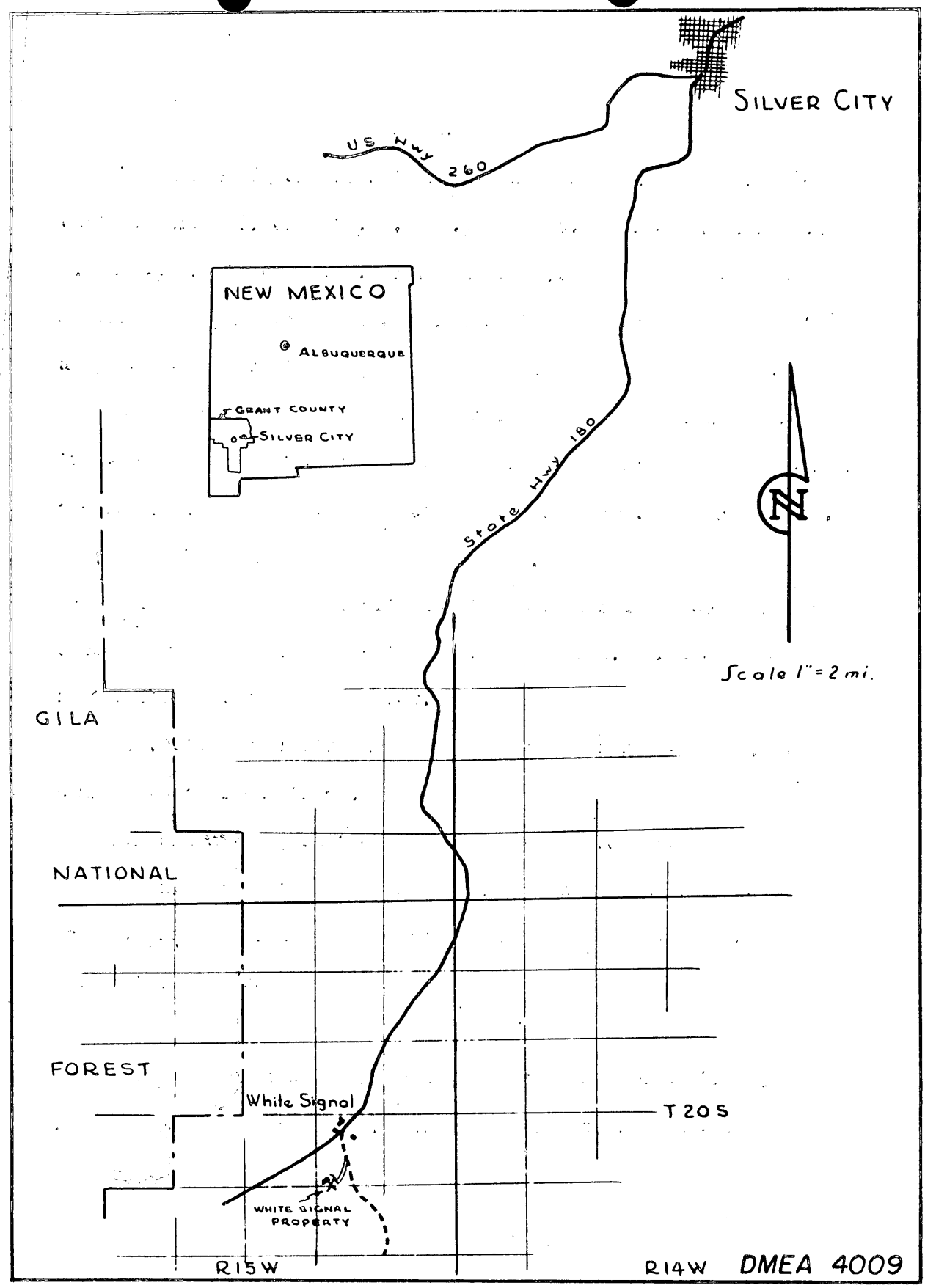

FIG.-1-LOCATION MAP
INTERSTATE MINING AND EXPLORATION CORP.
GRANT COUNTY, NEW MEXICO

Uranium minerals were recognized in the area on old mine dumps by A. A. Leach in 1920. It was discovered on the applicant's property by Otto and Fred Prevost in 1949. Shortly thereafter, E. B. Killion acquired the property and removed the overburden from 4 localities on Blue Jay Hill. Little or no work was done from 1950 to 1952 when the applicant acquired the property. During 1952 to 1955 the applicant intermittently explored the property by excavating a few small trenches and by putting down 5 diamond drill holes.

No uranium ore has been produced from the White Signal property.

EXTENT AND OWNERSHIP OF PROPERTY

The White Signal property of the area of proposed explorations comprises a group of 13 unpatented lode mining claims (figure 2). Eleven of the claims are owned by E. B. Killion and Ethel B. Killion of El Paso. Texas. They are held under a lease and option agreement by the applicant, Interstate Mining and Exploration Corp., 1036 First National Bank Bldg., Denver 2, Colorado. The other 2 claims, namely the Raven and Janet D., were located by the applicant according to Sydney Bell.

DESCRIPTION OF THE DEPOSITS

On the White Signal property, the area is underlain by granite that is intruded by a variety of dikes. A few thin quartz-pyrite veins are closely associated with the dikes. The dikes and veins have 2 prevalent attitudes. One strikes slightly north of east

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JAN 26 1956

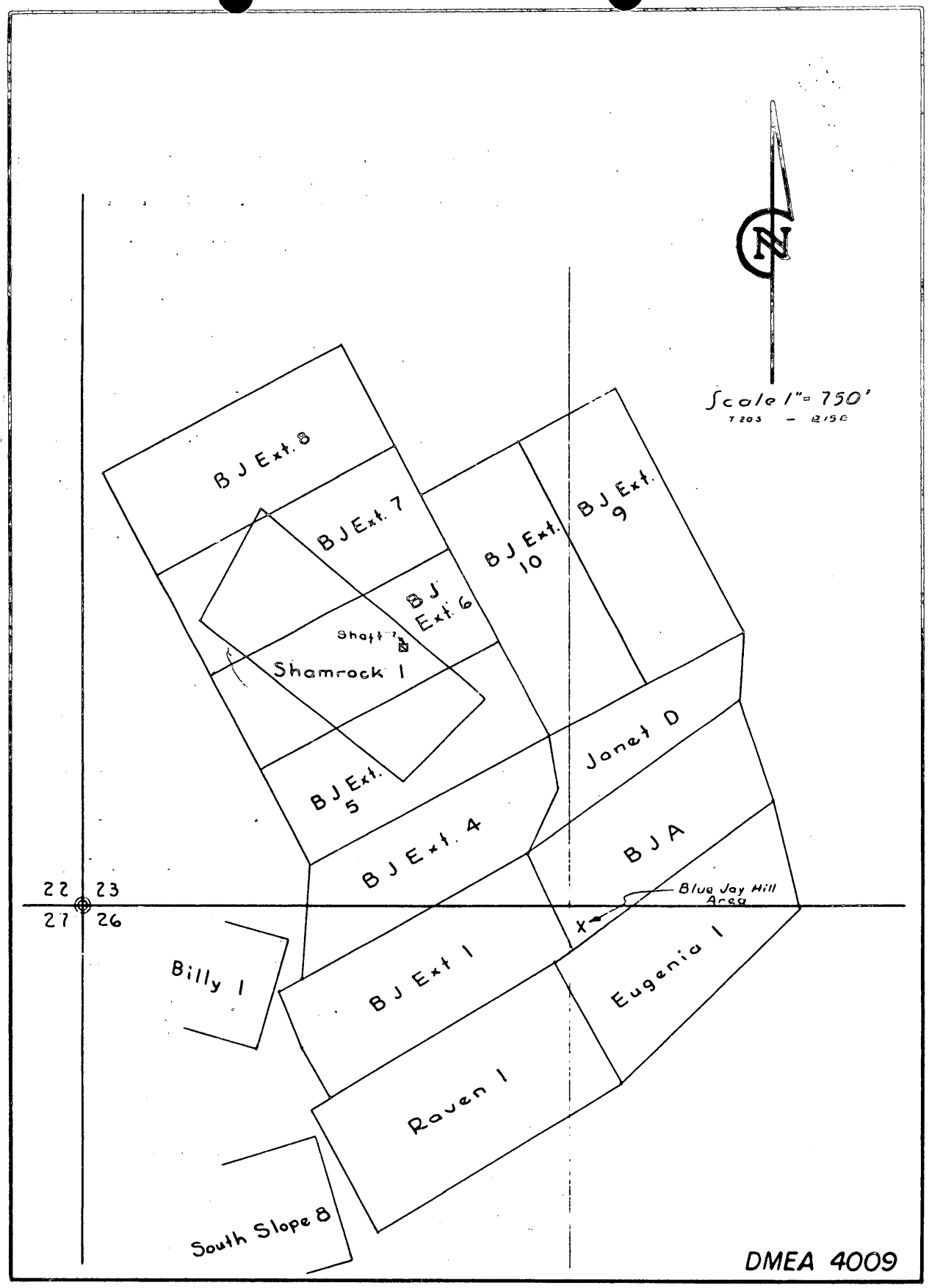

FIG.-2-CLAIM MAP, WHITE SIGNAL PROPERTY
INTERSTATE MINING AND EXPLORATION CORP.
GRANT COUNTY, NEW MEXICO

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JAN 26 1956

and dips steeply to the south and the other strikes northwest and dips moderately to the northeast. Uranium, probably as torbernite and another unidentified mineral, is commonly found in intermediate or basic dikes near oxidized quartz-pyrite veins. It probably is confined to 2 areas, Blue Jay Hill and Shamrock claim No. 1 (figure 3).

On Blue Jay Hill, the quartz-pyrite veins appear to be shorter and less continuous than shown on figure 3. The veins rarely exceed 2 or 3 inches in thickness. Five diamond drill holes drilled in the most favorable zone indicated that the best uranium mineralization was at the surface.

On Shamrock No. 1 claim, a diabase dike striking N. 40 W. and dipping 60 degrees to the northeast is cut by an easterly-trending nearly vertical fault. The fault offsets the north segment of the dike about 30 feet to the east of the south segment. The principal uranium occurrence is in a 55-foot inclined shaft driven along the fault. The north wall of the shaft is in the plane of the fault and the back of the shaft is the footwall of the dike. Uranium occurs sparsely as green scales of torbernite along the intersection of the fault and footwall of the dike. Most of it is in the diabase, but some was noted in the granite. It fades out within a foot of the intersection of the fault and footwall.

The assays of several samples taken by the applicant and by the Atomic Energy Commission are given in the Geologic Report of these investigations.

ORE RESERVES

The reserves of the Blue Jay Hill deposit have been placed at 1,000 tons of inferred rock containing 0.05 percent uranium.

At the Shamrock No. 1 deposit, the extent of significant uranium mineralization is too small to warrant an estimate of reserves.

CONCLUSIONS AND RECOMMENDATIONS

The White Signal property contains 2 uranium bearing deposits, the Blue Jay Hill and the Shamrock No. 1. The uranium occurs as secondary minerals in both deposits. At the Blue Jay Hill deposit, neither the extent nor degree of mineralization is significant. At the Shamrock, ore grade material is confined to a zone that is too small to be of present economic interest.

Exploration of the deposits at depth is not warranted because (1) diamond drilling at the Blue Jay Hill deposit has indicated that mineralization decreases or disappears at shallow depths, and (2) the possibility of finding significant amounts of uranium ore at the Shamrock deposit are considered unfavorable.

Denial is recommended for the requested aid in exploration for uranium on the White Signal property.

DMEA
Date Rec'd.

JAN 20 1956

BUREAU OF MINES
Denver, Colorado

MINERAL DEPOSITS
DMEA
RECEIVED
JAN 17 1956

U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

RECEIVED
JAN 20 1956

Box 4126 University Station
Tucson, Arizona

January 12, 1956

TRANSMITTED

JAN 20 1956

MEMORANDUM

To: Mr. E. N. Harshman

From: John N. Faick

Subject: Examination Report - Blue Jay Group of Claims, Grant County, New Mexico - DMEA Docket 4009 Interstate Mining and Exploration Corp., Applicant (Uranium)

Enclosed are the original and 10 copies of a report of the field examination of the above subject property, by Leonid Bryner. This report recommends denial of government participation in exploration because geological conditions indicate that the ore deposits are very small and of low grade. This report has my approval.

The Survey's copy of the application is also enclosed.

John N. Faick

John N. Faick

JNF:ms - Encls.

cc. Harshman (10)
Storms

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(date)

DMEA
Date Rec'd
JAN 20 1956
BUREAU OF MINES
Denver, Colorado

U. S. DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
JAN 26 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

TRANSMITTED
JAN 20 1956

REGION III

GEOLOGY

EXAMINATION REPORT

DMEA 4009

BLUE JAY GROUP OF CLAIMS, GRANT COUNTY, NEW MEXICO
INTERSTATE MINING AND EXPLORATION CORP., APPLICANT

(Uranium)

By
Leonid Bryner
Geologist
U. S. Geological Survey

January 12, 1956

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(date)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM III

RECEIVED
JAN 26 1956

EXAMINATION REPORT

DMEA 4009
BLUE JAY GROUP OF CLAIMS, GRANT COUNTY, NEW MEXICO
INTERSTATE MINING AND EXPLORATION CORP., APPLICANT
(Uranium)

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CONCLUSIONS AND RECOMMENDATIONS	10

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Fig. 1	Location Map	See Engineering Report
Fig. 2	Claim Map	" " "
Fig. 3	Geologic and Assay Map	Following page 10

TABLES

Table I	Results of sampling, Shamrock No. 1 Claim	Page 9

INTRODUCTION

On October 5, 1955 Sidney S. Bell, of the Interstate Mining and Exploration Corporation, applied for DMEA aid in a $60,500 program to explore for uranium on the Blue Jay Amended and adjacent claims.

The claims are located in the White Signal District, Grant County, New Mexico. At the main showing, on Blue Jay hill, there is a quarter corner monument for sections 23 and 26, T. 20 N., R. 15 W. Blue Jay hill is reached from Silver City by driving southwest 16½ miles on State Highway 180 to the settlement of White Signal, and there turning south onto the dirt road that leads to Separ. Blue Jay hill lies immediately west of the Separ road, about 0.7 of a mile from where this road leaves Highway 180.

The property consists of 13 unpatented claims, 11 owned by Mr. and Mrs. E. B. Killion and 2 owned by the applicant. The workings and the main uranium mineralization are confined to the Blue Jay Amended and the Shamrock No. 1 claims. The ground is leased from Killion by the applicant.

T. M. Romslo, of the U. S. Bureau of Mines, and the writer examined the property on December 8th and 9th. On the morning of the 9th we were accompanied by G. C. Ridland and S. S. Bell, representing the applicant. At that time we also examined diamond drill core from drilling on Blue Jay hill.

The deposit on Blue Jay hill had previously been studied by Granger and Bauer, of the U. S. Geological Survey.[1/] The results

1/ Granger, H. C., Bauer, H. L. Jr., Lovering, T. G., and Gillerman, Elliot, Uranium Deposits in Grant County, New Mexico, Trace Elements Investigations Report 156, September 1952.

of this study are extensively used in the present report and figure 9 of Granger and Bauer's report is reproduced as figure 3 of the present report. Sampling and geologic information on the Shamrock No. 1 showing was obtained by correspondence with Harold O. Wolfe, Chief, Albuquerque Sub-Office, Division of Raw Materials, AEC. This data also is used in the present report.

GEOLOGY

The geology of Blue Jay hill is shown in figure 3. The area is underlain by Precambrian granite that is intruded by a variety of dikes. The dikes range in composition from mafic to felsic. Many of these dikes are so intensely altered that their identification is questionable. A few thin quartz-pyrite veins bordered by argillized and, less commonly, by sericitized wall rock, are present among the dikes. The dikes and veins have two prevalent strike directions: (1) slightly north of east and (2) more or less northwest. The easterly-trending dikes and veins generally dip steeply to the south, and the northwesterly-trending ones dip moderately to the northeast.

Quoting Granger et al,[1]

> "The uranium deposits on the Blue Jay claim are most commonly found in intermediate or basic dikes near oxidized quartz-pyrite veins. Two secondary uranium minerals have been found in the deposits. One is a tabular, green, non-fluorescent mineral, probably torbernite; the other is a yellow powdery mineral with weak yellow fluorescence, which was not identified . . . . The prevalence of this mineral in the /larger aphanitic dike/ (fig. 3) makes this rock the richest sampled."

In the field the quartz-pyrite veins and the highly iron-stained faults appeared to me to be even shorter than the 50-foot average length indicated in figure 3. Also the veins rarely appeared to exceed 2 or 3 inches in thickness.

1/ Op. cit., p. 46.

The five diamond drill holes shown in figure 3 provide additional information on the geology of this deposit. Holes 4 and 5 were drilled under the highest-grade surface showing (A, fig. 3); one that is associated with an aphanitic dike. The dike apparently persists at least 50 feet down dip to where it is cut by the upper hole (No. 4). It is described by Bell in his log as a "white, clay-like zone" at 65 feet in granite. In the lower hole, however, the picture is drastically different. Here the downward extension of the thin, aphanitic dike 100 feet below the outcrop corresponds to the upper wall of a 41-foot thick "felsite" intrusive between the intervals of 160 and 201 feet. These may both be the same rock, but in neither hole were uranium minerals identified with the dike material and the very low radioactivity noted both in the sludge and in the core indicate that the uranium mineralization found at the surface does not persist 50 and 100 feet down dip to the two holes. The sludge, but not the core, from hole No. 5, however, consistently counted higher than the sludge from any of the other holes. It seems likely, therefore, that this hole cut unidentified radioactive minerals near the collar, and that these minerals contaminated the sludge that later came from the hole.

Holes 1, 2, and 3 were apparently designed to undercut the second and third best showings on Blue Jay hill; the ones labeled respectively "B" and "C" in figure 3. The latite dike associated with the "B" showing apparently *was* cut 50 feet below the outcrop at a depth of 100 feet in hole No. 3, and some torbernite (?) was found in the core at this depth. The consistently low sludge and core count for this hole, however,

makes it unlikely that uranium occurs with the latite dike in more than trace amounts. Holes 1 and 2 penetrated to a maximum depth of about 100 feet below the outcrop. They were mostly in granite and showed no evidence of having cut uranium mineralization. The drilling results suggest that the best uranium mineralization is at the surface where, perhaps, slight concentration through weathering took place. The drilling did not penetrate beneath the zone of oxidation, which is probably over 550 feet deep here as it is at the nearby Merry Widow mine. But even if primary uranium mineralization were discovered at depth it most likely would exhibit a pattern of low-grade and spotty distribution such as characterizes its occurrence at the surface and 50 to 100 feet below the surface.

The applicant bases his exploration plan mainly on the theory that primary ore will be found at depth, apparently assuming that the grade of the deposit will be better in the primary ore. He cites Marysvale, Utah, as an example of what might be expected at White Signal. The comparison with Marysvale is valid to the extent that both deposits belong to the silica-iron-lead vein type of deposit described by McKelvey, Everhardt, and Garrels.[1/] But according to the same writers, improvement in grade with depth should not be expected. Quoting this report (p. 33):

> "It is interesting to note that in deposits where both secondary uranium minerals and uraninite below them have been mined as ore, as in Portugal and Marysvale, Utah, there has been no significant change in grade. There appears to be no general secondary enrichment, or extensive impoverishment beyond a thin zone near the surface."

1/ McKelvey, V. E., Everhardt, D. L., and Garrels, R. M., Origin of Uranium Deposits, U. S. Geol. Survey Trace Elements Investigation Report 504, p. 31, March 1955.

The other deposit included in the application is located 1800 feet N 40 W of Blue Jay hill on the Shamrock No. 1 claim. The country rock is Precambrian granite. A 30-foot-thick diabase dike in the granite strikes N 40°W and dips 60° NE. An easterly-trending, steeply-to-vertically dipping fault cuts the dike, offsetting the north segment about 30 feet east of the south segment. An inclined shaft trending east, parallel to the fault, has been sunk in such a way that the footwall of the dike forms the hanging wall of the shaft and the north wall of the shaft is in the plane of the fault. The shaft is about 55 feet deep. Sparse green scales of torbernite occur along the intersection between the fault and the footwall of the dike. Most of the torbernite is in the diabase but some was noted in the granite. In both rocks the torbernite dies out within about a foot of the line of intersection of the fault and the footwall. Both the fault and the dike appear to have brought about localization of the uranium so that the intersection of both features marks the axis of a thin easterly-raking deposit of torbernite. No torbernite and only trace radioactivity has been noted in the segment of the dike north of the fault where it is opened by a trench 15 feet north of the fault, and by another trench that exposes the intersection of the fault with the hangingwall of the dike. From these surface showings it appears likely that the uranium mineralization underground is as limited in extent as it appears to be in the shaft.

GRADE AND RESERVES

Blue Jay Hill

The best radioactive showings, as well as numerous lower grade showings on Blue Jay Hill, were sampled by Granger and Bauer and the results tabulated in their report. This data also is shown in figure 3

of the present report. It should be noted that the percent U rather than U_3O_8 is given, and that sample lengths can be obtained by scale from the map. The applicant in one of the maps submitted with the application shows seven samples in the same area. This data has been added to figure 3. The diamond drilling also has been added to figure 3.

The highest grade showing is the one labeled "A", on the map, and the highest assays obtained there by Granger and Bauer is their sample HLB-15-146, which had a width of about 3 feet and assayed 0.110 percent U. The applicant's sample, taken at the same place as Granger and Bauer's, assayed 0.39 percent U_3O_8 for a width of 1.0 feet. (An assay of 0.45 for a width of 1.5 feet, included in the text of the application but not located on the map, might, instead of the 0.39 assay, correspond in location to HLB-15-146.) It can be seen by comparison with other samples shown on the map that the above assays are the exception rather than the rule. They serve to emphasize the very limited distribution of such values. Even the zones that range from 0.05 to 0.01 in uranium are very limited in extent.

Bell submitted some assays for sludge from holes No. 3 and No. 5, as follows:

Hole No.	Interval (ft.)	cU_3O_8 (%)
3	100-105	0.08
	140-145	0.06
5	25-30	0.09
	130-135	0.07
	175-180	0.08

As none of the core that we scanned in the field with a Geiger counter gave any indication of such high values as these, sludge remaining from the 100'-105' interval of hole No. 3 was taken in order

to check Bell's information. As USBM Sample No. 12782, this sludge was assayed radiometrically and found to contain 0.01 percent eU_3O_8. This result is probably within 0.01 percent of the true U_3O_8 content. Consequently, it appears that the five assays submitted by the applicant are likely to be erroneous. Scintillator logging of the sludge from holes 1, 2, 3, and 4 by Bell showed nothing that counted higher than twice background. Scanning of the core with a Geiger counter by the examiners likewise bore out the low grade of the rock. Bell's logging of sludge from hole No. 5, however, averaged two or three times background, with a maximum of five times background at 175 to 180 feet, about 100 feet below the outcrop and about on the downdip projection of the "A" showing. There seems to be no satisfactory explanation for the anomalous radioactivity in hole No. 5. The 175'-180' interval in No. 5 is represented by the 60'-65' interval in No. 4 and yet this interval showed only a background count. The 175'-180' interval in hole No. 5 is well up in the oxidized zone so it seems unlikely that this could represent primary uranium mineralization. Also, the higher counts in No. 5 must be at least partly due to uranium mineralization near the collar as the two to three times background readings for this hole began in the 20'-30' interval. On the other hand, no surface showing corresponding to that in the 20'-30' interval has been found. The only definite conclusion to be drawn from these observations is that the uranium mineralization in this deposit is unpredictably spotty and, at best, rather low grade.

Along with the very sparse distribution of commercial values in this deposit, there is an equally rare occurrence of the particular geologic setting which Granger and Bauer regard as necessary for the

higher grade concentrations of uranium, namely, the intersection of quartz-pyrite veins with mafic dikes. There appear to be only three such places on Blue Jay Hill, the ones labeled "A", "B", and "C". The above information, combined with the negative results of diamond drilling, shows that significant reserves of uranium ore that would be marketable under present conditions probably do not exist in the Blue Jay Hill deposit.

A small reserve, however, of submarginal grade rock can be assigned to the Blue Jay Hill deposit. Granger and Bauer estimated that this deposit contains 2,400 tons of inferred reserves averaging 0.05 percent U. This estimate was based on a length of 90 feet, a width of 6 feet and a depth of 45 feet at the "A" showing. However, since their estimate was made, diamond drill hole No. 4 undercut this showing about 50 feet below the outcrop and found nothing that counted more than twice background. On the basis of this new information the inferred reserve figure should be revised down to at least half the original amount, or about 1,000 tons of 0.05 percent U.

Shamrock No. 1 Deposit

The peculiar geologic setting of this deposit has been described on page 5. The limitations in possible tonnage are imposed by the geometry of the deposit. The sampling that has been done shows fairly good values of uranium, but the sample widths in most cases represent ore faces that can be projected in from the walls of the shaft no more than a foot or two. Assuming an easterly-raking, crudely pipe-like body having an average diameter of about 2 feet, a downward extension can be assumed and a reserve tonnage estimated, but the small cross-section of such a body does not warrant making the reserve calculation.

Samples taken here by the applicant and by AEC are tabulated below:

TABLE I

RESULTS OF SAMPLING IN THE INCLINED SHAFT
SHAMROCK NO. 1 CLAIM

	Identification	Distance from collar (feet)	Sample length (feet) north wall of shaft	Sample length (feet) south wall of shaft	U_3O_8* %
Sampling by applicant	No sample numbers	10	$1\frac{1}{2}$	-	0.11
		40	-	2	1.16
		70	-	2	0.24
	F-16402	10	3	-	(0.08c (0.07e
Sampling by AEC	F-16403	10	-	3	0.05e
	F-16404	20	1 (from hangingwall)		(0.30c (0.31e
	F-16405	20	2 (from end of above sample)		0.08e
	F-16406	30	-	3	0.03e
	F-16407	30	1 (from hangingwall)		0.06e
	F-16408	30	2 (from end of above sample)		0.01e

* c=chemical assay, e=radiometric assay; samples with neither c nor e probably are chemical assays.

EXPLORATION

The applicant's exploration proposal consists essentially of (1) drilling six 800-foot holes to cut the uranium-bearing structure beneath Blue Jay Hill at a depth where primary uranium mineralization might be found; (2) sinking a 100-foot shaft on the main showing at Blue Jay Hill and drifting 200 feet; and (3) deepening the shaft on the Shamrock No. 1 claim by 100 feet, and drifting 200 from this shaft.

CONCLUSIONS AND RECOMMENDATIONS

In the Blue Jay Hill deposit, the uranium minerals are concentrated mainly in three small showings, and in only one of these showings, "A", the concentration reaches commercial grade. At the Blue Jay Hill deposit 5 diamond drill holes that have undercut the three showings 50 to 100 feet below the outcrop generally indicate that whereas the favorable host rock continues to these depths, uranium mineralization has either declined or else disappeared. The torbernite ore body on the Shamrock No. 1 claim is a very thin, crudely pipe-shaped deposit with such a small cross-section that there is little possibility of finding a significant tonnage of uranium ore in its downdip extension. Even if primary uranium minerals were found at depth in either of these deposits, it is unlikely that the distribution or grade would improve significantly. My recommendation, therefore, is that the DMEA application be denied.

1-27-56 [illegible]

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

RECEIVED
JAN 20 1956

January 20, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, Docket DMEA 4009 (Uranium), Interstate Mining and Exploration Corporation, Blue Jay Group of claims, Grant County, New Mexico

Enclosed are the original and three copies of the Report of Examination on the subject property.

The field examiners believe that there is little chance of discovering significant amounts of uranium ore by additional exploratory work. They recommend that the application be denied, and we concur in this recommendation.

DMEA Field Team, Region III

By W. M. Traver
W. M. Traver

E. N. Harshman
E. N. Harshman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(date)

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JAN 26 1956

DMEA
Date Rec'd.
JAN 6 1956

BUREAU OF MINES
Denver, Colorado

Box 4097
Tucson 5, Arizona

January 4, 1956

TRANSMITTED
JAN 20 1956

Memorandum

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

From : Superintendent, Southwest Experiment Station

Subject : Field Examination Report, Docket DMEA-4009, Interstate Mining & Exploration Corp.'s White Signal Uranium Claims, White Signal Mining District, Grant County, N. Mex.

Enclosed are original and 10 copies of the section on Summary, Conclusions and Recommendations by T. M. Rosale of the Bureau of Mines and Leonid Bryner of the Geological Survey, and the section on Engineering by Rosale for the above report. A separate section on Geology will be submitted by the Survey.

As there seems little chance of discovering significant amounts of uranium ore by additional exploratory work, the DMEA examiners have recommended that Government aid be denied the applicant. I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (10)
J. N. Faick
DMEA-4009
MF

WRStorms:frj

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(Date)

RECEIVED
JAN 20 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

TRANSMITTED
JAN 20 1956

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-4009, Interstate Mining and Exploration Corporation

White Signal Uranium Property

Grant County, New Mexico

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

Leonid Bryner, Geologist
U. S. Geological Survey

January 1956

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(Date)

RECEIVED
JAN 26 1956
TRANSMITTED
JAN 20 1956

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By T. M. Romale[1] and Leonid Bryner[2]

The Interstate Mining and Exploration Corp. applied for Governmental aid in exploration of 2 uranium deposits on the White Signal property, White Signal Mining District, Grant County, N. Mex. The corporation proposed to diamond drill one of the deposits, the Blue Jay Hill, and sink and drift on the other, the Shamrock No. 1. Total cost of the explorations was estimated at $60,500.00. Field investigations of the property were made for the Defense Minerals Exploration Administration under docket DMEA-4009. Previously, the Blue Jay Hill had been examined by the U. S. Geological Survey, and the Shamrock had been examined by the Atomic Energy Commission.

Uranium minerals first were recognized in the area in 1920, and were discovered on the applicant's property in 1949. During 1949, overburden was removed from 4 small localities of the Blue Jay Hill deposit. Little or no work was done from then to 1952, when the applicant acquired the property. From 1952 to 1955, the applicant intermittently explored the property by trenching and diamond drilling. No uranium ore has been produced.

The White Signal property is underlain by pre-Cambrian granite that has been intruded by a variety of dikes. Uranium, probably as torbernite and another unidentified secondary mineral, is commonly found in intermediate or basic dikes near oxidized quartz-pyrite veins.

1/ Mining Engineer, U. S. Bureau of Mines
2/ Geologist, U. S. Geological Survey

At the Blue Jay Hill deposit this favorable combination of dikes and veins coincides with the 3 highest grade showings. But unless only a few square feet of the best part of each showing is considered, the grade of these showings is sub-commercial. Diamond drilling, 50 to 100 feet beneath the surface, indicates that the grade declines with depth.

Uranium mineralization on the Shamrock No. 1 claim has the form of torbernite localized along the intersection of a fault with the footwall of a diabase dike. This restricts the cross section of the deposit to a few square feet, and makes it improbable that the deposit contains a significant tonnage of ore in its downdip extension.

Even if, as is probable, primary uranium minerals could be found at depth in either of these deposits, it is unlikely that the distribution or grade would improve significantly. Therefore denial of the requested aid in exploration of the White Signal property is recommended.

1-30-56

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JAN 20 1956

DMEA-4009, INTERSTATE MINING AND EXPLORATION CORPORATION
WHITE SIGNAL URANIUM PROPERTY
GRANT COUNTY, NEW MEXICO

TRANSMITTED
JAN 20 1956

Engineering Report

By T. M. Hamalo
Mining Engineer
U. S. Bureau of Mines

JANUARY 1956

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(date)

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JAN 2 6 1956

DEA-4009, INTERSTATE MINING AND EXPLORATION CORPORATION
WHITE SIGNAL URANIUM PROPERTY
GRANT COUNTY, NEW MEXICO

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Location and accessibility	2
Physical features and climate	2
History and production	2
Extent and ownership of property	3
Description of deposits	3
Ore reserves	5
Conclusions and recommendation	5

ILLUSTRATIONS

Figure		Following page
1	Location map	2
2	Claim map	3
3	(See geologic report)	

INTRODUCTION

The Defense Minerals Exploration Administration received an application from the Interstate Mining and Exploration Corp. for aid in exploring for uranium on the White Signal Property, Grant County, N. Mex. The application was received October 4, 1955. It was designated as DMEA-4000, reviewed by the Operating Committee, then forwarded to the Field Team, Region III for a field examination of the property.

The applicant asked assistance in exploring 2 radioactive zones, one by drilling six 500-foot diamond drill holes, and the other by sinking 2 100-foot shafts and by driving 200 feet of drift from each of the shafts. Total cost of the explorations was estimated at $60,000.00.

The property was examined on November 8 and 9, 1955 by Leonid Beymer, geologist, U. S. Geological Survey and T. M. Rosalo, mining engineer, U. S. Bureau of Mines. Representatives of the applicant, H. C. Ridland, consulting geologist, and Sydney Bell, the corporation's geologist, accompanied the examining team on the last day.

The deposit on Blue Jay Hill and another on Shamrock No. 1 claim had previously been studied by the U. S. Geological Survey and the Atomic Energy Commission, respectively. Data from these investigations were available to the DMEA examining team.

LOCATION AND ACCESSIBILITY

The White Signal property is situated about 16 miles southeasterly from Silver City, N. Mex., in secs. 23 and 26, T. 20 S., R. 15 W., Grant County, N. Mex. (figure 1). It may be reached from Silver City by traveling 16.8 miles south on State Highway 180 to a graded dirt road that branches to the left at a few hundred yards beyond the settlement of White Signal. Proceed on the southeasterly trending dirt road that traverses a portion of the property and skirts the workings on Blue Jay Hill at about 9.7 miles from the Highway.

TOPOGRAPHY, PHYSICAL FEATURES, AND CLIMATE

The White Signal property is at an average altitude of about 6,000 feet in an area of gently rolling terrain. Drainage is southeasterly via McDonald Draw.

Vegetation consists mainly of forage grasses and scattered small groves of oak trees.

Summers are pleasant and winters are not severe.

Annual precipitation of about 15 inches occurs principally as heavy rainfalls in the summer, and light rain and snowfalls during the winter.

HISTORY AND PRODUCTION

Gold, silver and copper were discovered in the White Signal district in the late 1880's. Rich ores were shallow and soon exhausted.

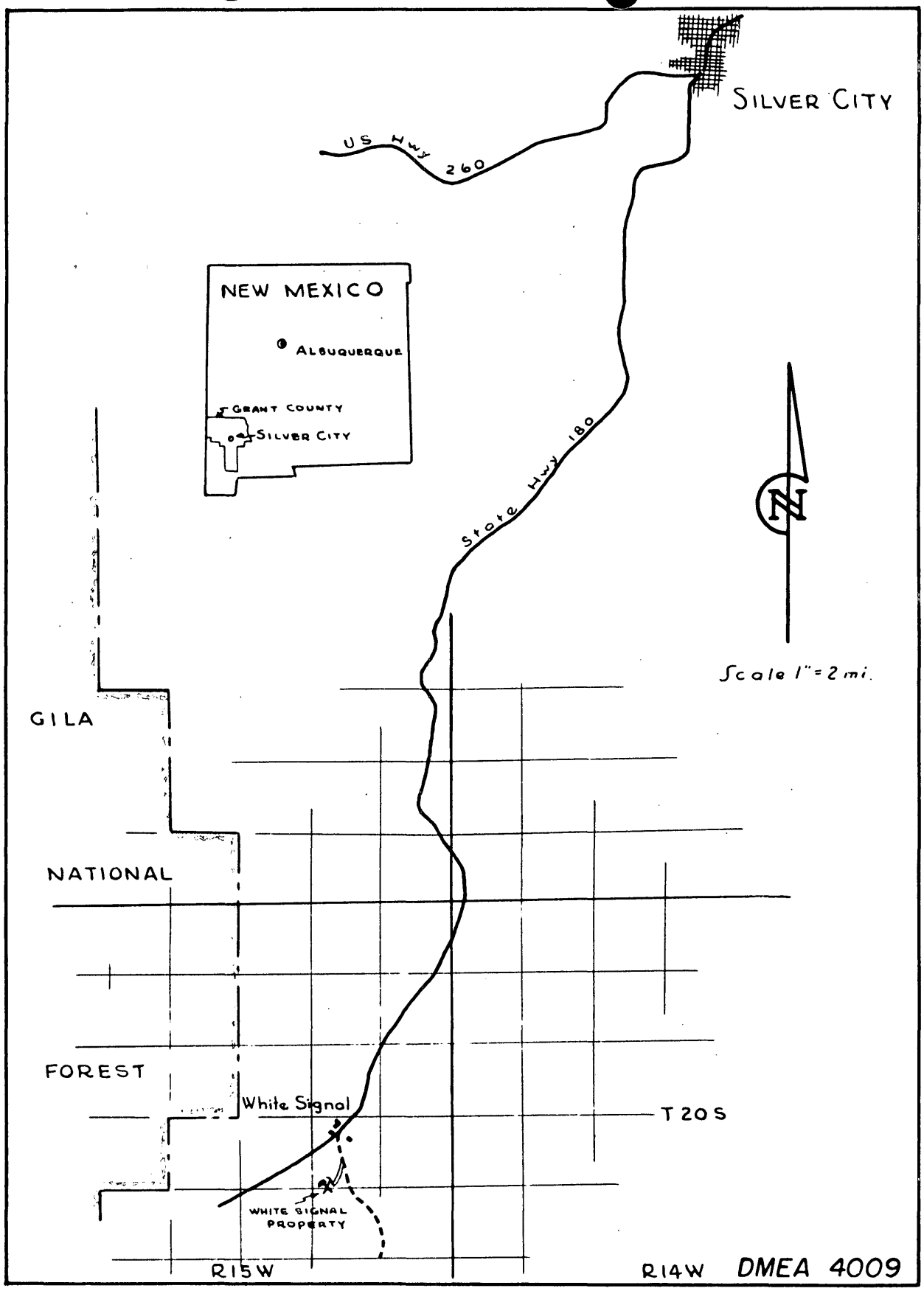

FIG.-1-LOCATION MAP
INTERSTATE MINING AND EXPLORATION CORP.
GRANT COUNTY, NEW MEXICO

Uranium minerals were recognized in the area on old mine dumps by A. A. Leach in 1920. It was discovered on the applicant's property by Otto and Fred Prevost in 1949. Shortly thereafter, E. B. Killion acquired the property and removed the overburden from 4 localities on Blue Jay Hill. Little or no work was done from 1950 to 1952 when the applicant acquired the property. During 1952 to 1955 the applicant intermittently explored the property by excavating a few small trenches and by putting down 5 diamond drill holes.

No uranium ore has been produced from the White Signal property.

EXTENT AND OWNERSHIP OF PROPERTY

The White Signal property of the area of proposed explorations comprises a group of 13 unpatented lode mining claims (figure 2). Eleven of the claims are owned by E. B. Killion and Ethel B. Killion of El Paso, Texas. They are held under a lease and option agreement by the applicant, Interstate Mining and Exploration Corp., 1036 First National Bank Bldg., Denver 2, Colorado. The other 2 claims, namely the Raven and Janet B., were located by the applicant according to Sydney Bell.

DESCRIPTION OF THE DEPOSITS

On the White Signal property, the area is underlain by granite that is intruded by a variety of dikes. A few thin quartz-pyrite veins are closely associated with the dikes. The dikes and veins have 2 prevalent attitudes. One strikes slightly north of east

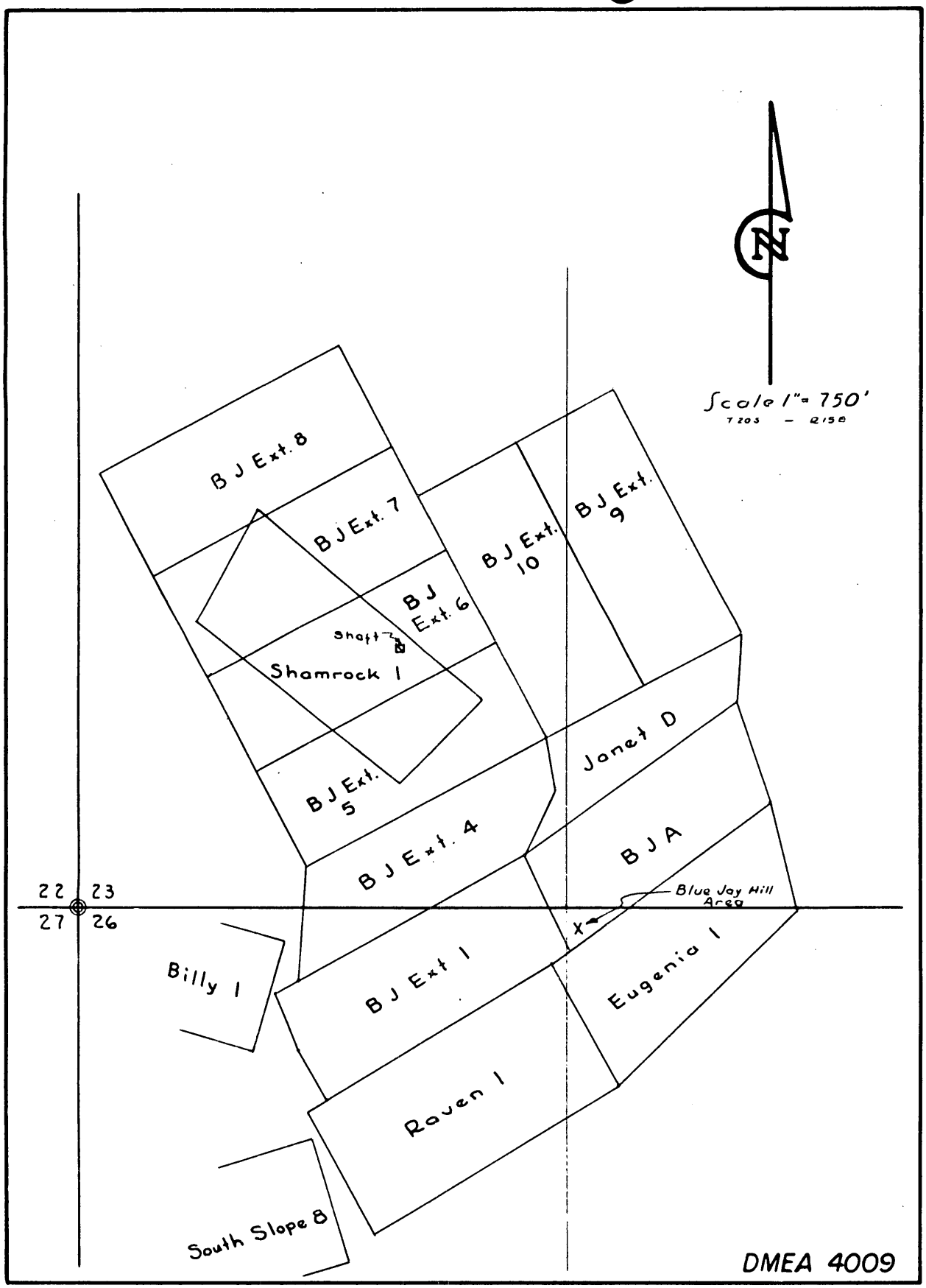

FIG.-2-CLAIM MAP, WHITE SIGNAL PROPERTY
INTERSTATE MINING AND EXPLORATION CORP.
GRANT COUNTY, NEW MEXICO

and dips steeply to the south and the other strikes northwest and dips moderately to the northeast. Uranium, probably as torbernite and another unidentified mineral, is commonly found in intermediate or basic dikes near oxidized quartz-pyrite veins. It probably is confined to 2 areas, Blue Jay Hill and Shamrock claim No. 1 (figure 3).

On Blue Jay Hill, the quartz-pyrite veins appear to be shorter and less continuous than shown on figure 3. The veins rarely exceed 2 or 3 inches in thickness. Five diamond drill holes drilled in the most favorable zone indicated that the best uranium mineralization was at the surface.

On Shamrock No. 1 claim, a diabase dike striking N. 40 W. and dipping 60 degrees to the northeast is cut by an easterly-trending nearly vertical fault. The fault offsets the north segment of the dike about 30 feet to the east of the south segment. The principal uranium occurrence is in a 55-foot inclined shaft driven along the fault. The north wall of the shaft is in the plane of the fault and the back of the shaft is the footwall of the dike. Uranium occurs sparsely as green scales of torbernite along the intersection of the fault and footwall of the dike. Most of it is in the diabase, but some was noted in the granite. It fades out within a foot of the intersection of the fault and footwall.

The assays of several samples taken by the applicant and by the Atomic Energy Commission are given in the Geologic Report of these investigations.

ORE RESERVES

The reserves of the Blue Jay Hill deposit have been placed at 1,000 tons of inferred rock containing 0.05 percent uranium.

At the Shamrock No. 1 deposit, the extent of significant uranium mineralization is too small to warrant an estimate of reserves.

CONCLUSIONS AND RECOMMENDATIONS

The White Signal property contains 2 uranium bearing deposits, the Blue Jay Hill and the Shamrock No. 1. The uranium occurs as secondary minerals in both deposits. At the Blue Jay Hill deposit, neither the extent nor degree of mineralization is significant. At the Shamrock, ore grade material is confined to a zone that is too small to be of present economic interest.

Exploration of the deposits at depth is not warranted because (1) diamond drilling at the Blue Jay Hill deposit has indicated that mineralization decreases or disappears at shallow depths, and (2) the possibility of finding significant amounts of uranium ore at the Shamrock deposit are considered unfavorable.

Denial is recommended for the requested aid in exploration for uranium on the White Signal property.

DMEA
Date Rec'd.
JAN 20 1956

RECEIVED
JAN 26 1956

MINERAL DEPOSITS
DMEA
RECEIVED
JAN 17 1956
GEOLOGICAL SURVEY
DENVER, COLORADO

BUREAU OF MINES
Denver, Colorado

Box 4126 University Station
Tucson, Arizona

January 12, 1956

MEMORANDUM

To: Mr. E. N. Harshman

From: John H. Faick

TRANSMITTED
JAN 20 1956

Subject: Examination Report - Blue Jay Group of Claims, Grant County, New Mexico - DMEA Docket 4009
Interstate Mining and Exploration Corp., Applicant (Uranium)

Enclosed are the original and 10 copies of a report of the field examination of the above subject property, by Leonid Bryner. This report recommends denial of government participation in exploration because geological conditions indicate that the ore deposits are very small and of low grade. This report has my approval.

The Survey's copy of the application is also enclosed.

John H. Faick

John H. Faick

JHF:mm - Encls.

cc. Harshman (10)
Storms

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(date)

RECEIVED
JAN 30 1996

RECEIVED
JAN 26 1956
DMEA
Date Rec'd
JAN 20 1956
BUREAU OF MINES
Denver, Colorado

U. S. DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REGION III

TRANSMITTED
JAN 20 1956

GEOLOGY

EXAMINATION REPORT

DMEA 4009

BLUE SKY GROUP OF CLAIMS, GRANT COUNTY, NEW MEXICO
INTERSTATE MINING AND EXPLORATION CORP., APPLICANT

(Uranium)

By
Leonid Enzner
Geologist
U. S. Geological Survey

January 12, 1956

Reviewed by
DMEA OPERATING COMMITTEE
1-30-56
(date)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM XIX

RECEIVED
JAN 26 1956

EXAMINATION REPORT

DMEA 4009
BLUE JAY GROUP OF CLAIMS, GRANT COUNTY, NEW MEXICO
INTERMOUNTAIN MINING AND EXPLORATION CORP., APPLICANT
(Revision)

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Fig. 1 Location Map	See Engineering Report
Fig. 2 Claim Map	" " "
Fig. 3 Geologic and Assay Map	Following page 10

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Table I Results of sampling, Shamrock No. 1 Claim	Page 9

INTRODUCTION

On October 5, 1955 Sidney S. Ball, of the Interstate Mining and Exploration Corporation, applied for DMEA aid in a $60,000 program to explore for uranium on the Blue Jay Amended and adjacent claims.

The claims are located in the White Signal District, Grant County, New Mexico. At the main showing, on Blue Jay hill, there is a quarter corner monument for sections 23 and 26, T. 20 N., R. 15 W. Blue Jay hill is reached from Silver City by driving southeast 16½ miles on State Highway 180 to the settlement of White Signal, and there turning south onto the dirt road that leads to Sapar. Blue Jay hill lies immediately west of the Sapar road, about 0.7 of a mile from where this road leaves Highway 180.

The property consists of 13 unpatented claims, 11 owned by Mr. and Mrs. R. B. Killion and 2 owned by the applicant. The workings and the main uranium mineralization are confined to the Blue Jay Amended and the Shamrock No. 1 claims. The ground is leased from Killion by the applicant.

T. M. Rosale, of the U. S. Bureau of Mines, and the writer examined the property on December 8th and 9th. On the morning of the 9th we were accompanied by E. C. Ridland and S. S. Ball, representing the applicant. At that time we also examined diamond drill core from drilling on Blue Jay hill.

The deposit on Blue Jay hill had previously been studied by Granger and Bauer, of the U. S. Geological Survey.[1] The results

1/ Granger, H. C., Bauer, H. L. Jr., Lovering, T. S., and Gillerman, Elliot, Uranium Deposits in Grant County, New Mexico, Trace Elements Investigations Report 156, September 1952.

of this study are extensively used in the present report and figure 9 of Granger and Bauer's report is reproduced as figure 3 of the present report. Sampling and geologic information on the Shaverock No. 1 showing was obtained by correspondence with Harold O. Wolfe, Chief, Albuquerque Sub-Office, Division of Raw Materials, AEC. This data also is used in the present report.

GEOLOGY

The geology of Blue Jay hill is shown in figure 3. The area is underlain by Precambrian granite that is intruded by a variety of dikes. The dikes range in composition from mafic to felsic. Many of these dikes are so intensely altered that their identification is questionable. A few thin quartz-pyrite veins bordered by argillized and, less commonly, by silicified wall rock, are present among the dikes. The dikes and veins have two prevalent strike directions: (1) slightly north of east and (2) more or less northwest. The easterly-trending dikes and veins generally dip steeply to the south, and the northwesterly-trending ones dip moderately to the northeast.

Quoting Granger et al,[1]

> "The uranium deposits on the Blue Jay claim are most commonly found in intermediate or basic dikes near oxidized quartz-pyrite veins. Two secondary uranium minerals have been found in the deposits. One is a tabular, green, non-fluorescent mineral, probably torbernite; the other is a yellow powdery mineral with weak yellow fluorescence, which was not identified . . . . The prevalence of this mineral in the larger aphanitic dike (fig. 3) makes this rock the richest sampled."

In the field the quartz-pyrite veins and the highly iron-stained faults appeared to me to be even shorter than the 30-foot average length indicated in figure 3. Also the veins rarely appeared to exceed 2 or 3 inches in thickness.

1/ Op. cit., p. 44.

The five diamond drill holes shown in figure 3 provide additional information on the geology of this deposit. Holes 4 and 5 were drilled under the highest-grade surface showing (A, fig. 3); one that is associated with an aphanitic dike. The dike apparently persists at least 50 feet down dip to where it is cut by the upper hole (No. 4). It is described by Hall in his log as a "white, clay-like zone" at 63 feet in granite. In the lower hole, however, the picture is drastically different. Here the downward extension of the thin, aphanitic dike 100 feet below the outcrop corresponds to the upper wall of a 41-foot thick "Pulsite" intrusive between the intervals of 160 and 201 feet. These may both be the same rock, but in neither hole were uranium minerals identified with the dike material and the very low radioactivity noted both in the sludge and in the core indicate that the uranium mineralization found at the surface does not persist 50 and 100 feet down dip to the two holes. The sludge, but not the core, from hole No. 5, however, consistently counted higher than the sludge from any of the other holes. It seems likely, therefore, that this hole cut unidentified radioactive minerals near the collar, and that these minerals contaminated the sludge that later came from the hole.

Holes 1, 2, and 3 were apparently designed to undercut the second and third best showings on Blue Jay hill; the zones labeled respectively "B" and "C" in figure 3. The latite dike associated with the "B" showing apparently was cut 50 feet below the outcrop at a depth of 100 feet in hole No. 3, and some torbernite (?) was found in the core at this depth. The consistently low sludge and core count for this hole, however,

makes it unlikely that uranium occurs with the latite dike in more than trace amounts. Holes 1 and 2 penetrated to a maximum depth of about 100 feet below the outcrop. They were mostly in granite and showed no evidence of having cut uranium mineralization. The drilling results suggest that the best uranium mineralization is at the surface where, perhaps, slight concentration through weathering took place. The drilling did not penetrate beneath the zone of oxidation, which is probably over 500 feet deep here as it is at the nearby Harry Widow mine. But even if primary uranium mineralization were discovered at depth it most likely would exhibit a pattern of low-grade and spotty distribution such as characterizes its occurrence at the surface and 50 to 100 feet below the surface.

The applicant bases his exploration plan mainly on the theory that primary ore will be found at depth, apparently assuming that the grade of the deposit will be better in the primary ore. He cites Marysvale, Utah, as an example of what might be expected at White Signal. The comparison with Marysvale is valid to the extent that both deposits belong to the silica-iron-lead vein type of deposit described by McKelvey, Everhart, and Garvin.[1] But according to the same writers, improvement in grade with depth should not be expected. Quoting this report (p. 33):

> "It is interesting to note that in deposits where both secondary uranium minerals and uraninite below them have been mined as ore, as in Portugal and Marysvale, Utah, there has been no significant change in grade. There appears to be no general secondary enrichment, or substantive impoverishment beyond a thin zone near the surface."

1/ McKelvey, V. E., Everhart, D. L., and Garvin, R. M., Origin of Uranium Deposits, U. S. Geol. Survey Trace Elements Investigation Report 504, p. 33, March 1955.

The other deposit included in the application is located 1800 feet N 40 W of Blue Jay hill on the Shamrock No. 1 claim. The country rock is Precambrian granite. A 30-foot-thick diabase dike in the granite strikes N 40°W and dips 60° NE. An easterly-trending, steeply-to-vertically dipping fault cuts the dike, offsetting the north segment about 30 feet east of the south segment. An inclined shaft trending east, parallel to the fault, has been sunk in such a way that the footwall of the dike forms the hanging wall of the shaft and the north wall of the shaft is in the plane of the fault. The shaft is about 35 feet deep. Sparse green scales of torbernite occur along the intersection between the fault and the footwall of the dike. Most of the torbernite is in the diabase but some was noted in the granite. In both rocks the torbernite dies out within about a foot of the line of intersection of the fault and the footwall. Both the fault and the dike appear to have brought about localization of the uranium so that the intersection of both features marks the axis of a thin easterly-raking deposit of torbernite. No torbernite and only trace radioactivity has been noted in the segment of the dike north of the fault where it is opened by a trench 15 feet north of the fault, and by another trench that exposes the intersection of the fault with the hangingwall of the dike. From these surface showings it appears likely that the uranium mineralization underground is as limited in extent as it appears to be in the shaft.

GRADE AND RESERVES

Blue Jay Hill

The best radioactive showings, as well as numerous lower grade showings on Blue Jay Hill, were sampled by Granger and Bauer and the results tabulated in their report. This data also is shown in figure 3

of the present report. It should be noted that the percent U rather than U_3O_8 is given, and that sample lengths can be obtained by scale from the map. The applicant in one of the maps submitted with the application shows seven samples in the same area. This data has been added to figure 3. The diamond drilling also has been added to figure 3.

The highest grade showing is the one labeled "A", on the map, and the highest assays obtained there by Granger and Rauer is their sample HZB-15-146, which had a width of about 3 feet and assayed 0.110 percent U. The applicant's sample, taken at the same place as Granger and Rauer's, assayed 0.39 percent U_3O_8 for a width of 1.0 foot. (An assay of 0.45 for a width of 1.5 feet, included in the text of the application but not located on the map, might, instead of the 0.39 assay, correspond in location to HZB-15-146.) It can be seen by comparison with other samples shown on the map that the above assays are the exception rather than the rule. They serve to emphasize the very limited distribution of such values. Even the zones that range from 0.05 to 0.01 in uranium are very limited in extent.

Hall submitted some assays for sludge from holes No. 3 and No. 5, as follows:

Hole No.	Interval (ft.)	eU_3O_8 (%)
3	100-105	0.08
	140-145	0.06
5	25-30	0.09
	130-135	0.07
	175-180	0.06

As none of the core that we measured in the field with a Geiger counter gave any indication of such high values as these, sludge remaining from the 100'-105' interval of hole No. 3 was taken in order

to check Ball's information. As [redacted] Sample No. 12762, this sludge was assayed radiometrically and found to contain 0.01 percent U_3O_8. This result is probably within 0.01 percent of the true U_3O_8 content. Consequently, it appears that the five assays submitted by the applicant are likely to be erroneous. Scintillator logging of the sludge from holes 1, 2, 3, and 4 by Ball showed nothing that counted higher than twice background. Scanning of the core with a Geiger counter by the examiners likewise bore out the low grade of the rock. Ball's logging of sludge from hole No. 5, however, averaged two or three times background, with a maximum of five times background at 175 to 180 feet, about 100 feet below the subsurface and about on the density projection of the "A" showing. There seems to be no satisfactory explanation for the maximum radioactivity in hole No. 5. The 175'-180' interval in No. 5 is represented by the 60'-65' interval in No. 4 and yet this interval showed only a background count. The 175'-180' interval in hole No. 5 is well up in the sericited zone so it seems unlikely that this could represent primary uranium mineralization. Also, the higher counts in No. 5 must be at least partly due to uranium mineralization near the collar as the two to three times background readings for this hole began in the 20'-30' interval. On the other hand, no surface showing corresponding to that in the 20'-30' interval has been found. The only definite conclusion to be drawn from these observations is that the uranium mineralization in this deposit is unquestionably spotty and, at least, rather low grade.

Along with the very sparse distribution of commercial values in this deposit, there is an equally rare occurrence of the particular geologic setting which Granger and Bauer regard as necessary for the

higher grade concentrations of uranium, namely, the intersection of quartz-pyrite veins with mafic dikes. There appear to be only three such places on Blue Jay Hill, the zones labeled "A", "B", and "C". The above information, combined with the negative results of diamond drilling, shows that significant reserves of uranium ore that would be marketable under present conditions probably do not exist in the Blue Jay Hill deposit.

A small reserve, however, of submarginal grade rock can be assigned to the Blue Jay Hill deposit. Granger and Raner estimated that this deposit contains 2,400 tons of inferred reserves averaging 0.05 percent U. This estimate was based on a length of 90 feet, a width of 6 feet and a depth of 45 feet at the "A" showing. However, since their estimate was made, diamond drill hole No. 4 undercut this showing about 50 feet below the outcrop and found nothing that assayed more than twice background. On the basis of this new information the inferred reserve figure should be revised down to at least half the original amount, or about 1,000 tons of 0.05 percent U.

Shaft No. 1 Deposit

The peculiar geologic setting of this deposit has been described on page 5. The limitations in possible tonnage are imposed by the geometry of the deposit. The sampling that has been done shows fairly good values of uranium, but the sample widths in most cases represent ore fences that can be projected in from the walls of the shaft no more than a foot or two. Assuming an easterly-sinking, crudely pipe-like body having an average diameter of about 2 feet, a downward extension can be assumed and a reserve tonnage estimated, but the small cross-section of such a body does not warrant making the reserve calculation.

Samples taken here by the applicant and by AEC are tabulated below:

TABLE I

RESULTS OF SAMPLING IN THE INCLINED SHAFT
SHAMROCK NO. 1 CLAIM

	Identification	Distance from collar (feet)	Sample length (feet) north wall of shaft	Sample length (feet) south wall of shaft	U_3O_8* %
Sampling by applicant	No sample numbers	10	1½	-	0.11
		40	-	2	1.16
		70	-	2	0.24
Sampling by AEC	F-16402	10	3	-	(0.08c (0.07e
	F-16403	10	-	3	0.05e
	F-16404	20	1 (from hangingwall)		(0.30c (0.31e
	F-16405	20	2 (from end of above sample)		0.08e
	F-16406	30	-	3	0.03e
	F-16407	30	1 (from hangingwall)		0.06e
	F-16408	30	2 (from end of above sample)		0.01e

* c-chemical assay, e-radiometric assay; samples with neither c nor e probably are chemical assays.

EXPLORATION

The applicant's exploration proposal consists essentially of (1) drilling six 800-foot holes to cut the uranium-bearing structure beneath Blue Jay Hill at a depth where primary uranium mineralization might be found; (2) sinking a 100-foot shaft on the main showing at Blue Jay Hill and drifting 200 feet; and (3) deepening the shaft on the Shamrock No. 1 claim by 100 feet, and drifting 200 from this shaft.

CONCLUSIONS AND RECOMMENDATIONS

In the Blue Jay Hill deposit, the uranium minerals are concentrated mainly in three small showings, and in only one of these showings, "A", the concentration reaches commercial grade. At the Blue Jay Hill deposit 5 diamond drill holes that have undercut the three showings 50 to 100 feet below the outcrop generally indicate that whereas the favorable host rock continues to these depths, uranium mineralization has either declined or else disappeared. The torbernite ore body on the Shamrock No. 1 claim is a very thin, crudely pipe-shaped deposit with such a small cross-section that there is little possibility of finding a significant tonnage of uranium ore in its downdip extension. Even if primary uranium minerals were found at depth in either of these deposits, it is unlikely that the distribution or grade would improve significantly. My recommendation, therefore, is that the DMEA application be denied.

RECEIVED
OCT 31 1955

October 27, 1955

Memorandum

To: W. R. Storms

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4009 (Uranium), Interstate Mining and Exploration Corporation, White Signal Property, Grant County, New Mexico

The subject application in the amount of $60,500.00 is enclosed. The brochure consists of:

1. Form MF-103 and supplementary information sheets
2. Photocopy of Lease and Option
3. 4 Maps
   (a) White Signal District - proposed work
   (b) Claim map
   (c) White Signal District - proposed work (overlay)
   (d) Section
4. Photocopy of memo from J. W. Pennington to W. S. Martin
5. Photocopy of memo from E. N. Nelson to W. S. Martin
6. Photocopy of letter of transmittal from Chairman Operating Committee to Executive Officer
7. Copy of memo of transmittal from Executive Officer to this office

A field examination and suitable report are required. The completed report should be forwarded directly to the Executive Officer with a copy of the memorandum of transmittal to this office.

W. H. King

Enclosures

Copy to: E. N. Harshman
J. H. Faick
W. M. Traver (3)
Sec. Op. Com. (2)

RECEIVED

OCT 31 1955

October 27, 1955

Memorandum

To: W. R. Storms

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4039 (Uranium), Interstate Mining and Exploration Corporation, White Signal Property, Grant County, New Mexico

The subject application in the amount of $60,500.00 is enclosed. The brochure consists of:

1. Form MF-103 and supplementary information sheets
2. Photocopy of Lease and Option
3. 4 Maps
   (a) White Signal District - proposed work
   (b) Claim map
   (c) White Signal District - proposed work (overlay)
   (d) Section
4. Photocopy of memo from J. W. Pennington to W. S. Martin
5. Photocopy of memo from E. N. Nelson to W. S. Martin
6. Photocopy of letter of transmittal from Chairman Operating Committee to Executive Officer
7. Copy of memo of transmittal from Executive Officer to this office

A field examination and suitable report are required. The completed report should be forwarded directly to the Executive Officer with a copy of the memorandum of transmittal to this office.

W. H. King

Enclosures

Copy to: E. N. Harahman
J. H. Faick
W. H. Trever (3)

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

RECEIVED
OCT 26 1955

October 24, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: W. H. King (With brochure)
J. H. Faink

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 4009 (Uranium), Interstate Mining and Exploration Corporation, White Signal Property, Grant County, New Mexico

Enclosed is the subject application in the amount of $66,500.00. The brochure consists of Form MF-103 and accompanying answer sheets, a photostat copy of Lease and Option, and four maps. Also enclosed is a copy of a letter from the Chairman of the Operating Committee and reviews of the application by H. H. Nelson and James Faunz, Members of the Uranium Commodity Committee.

Please give special attention to the applicant's rights on the Raven No. 1 claim and the Janet D claim.

A field examination and suitable report are requested.

W. H. Traver

Enclosures

HMC:ab
cc: Sec. Opr. Comm. (2)
Harshman
Docket 4009
Chron.

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

RECEIVED
OCT 26 1956

October 24, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: W. H. King (With brochure)
J. N. Faick

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 4009 (Uranium), Interstate Mining and Exploration Corporation, White Signal Property, Grant County, New Mexico

Enclosed is the subject application in the amount of $60,500.00. The brochure consists of Form NF-103 and accompanying answer sheets, a photostat copy of Lease and Option, and four maps. Also enclosed is a copy of a letter from the Chairman of the Operating Committee and reviews of the application by N. E. Nelson and James Pearse, Members of the Uranium Commodity Committee.

Please give special attention to the applicant's rights on the Raven No. 1 claim and the Janet B claim.

A field examination and suitable report are requested.

W. M. Traver

W. M. Traver

Enclosures

HMC:ab
cc: Sec. Opr. Comm. (2)
Harshman
Docket 4009
Chron.

Surname copy

700

Ching
Ellis
Yager
Hilgaard
Selfridge

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

OCT 19 1955

Mr. Sidney S. Bell, Geological Engineer
Interstate Mining and Exploration Corporation
1036 First National Bank Building
Denver 2, Colorado

Re: Docket No. DMEA-4009 (Uranium)
White Signal Property
Grant County, New Mexico

Dear Mr. Bell:

The application for assistance in exploring the subject property in Grant 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,

Frank E. Johnson

Acting Administrator

MChing/gla
10/17/55
cc to: Admr.'s Reading File
Docket
Code 700
Mr. Ching
DMEA Field Team, Region III (2)

R.C.L.

Surname copy

700

Ching
Ellis
Kjelmen

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

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

OCT 19 1955

Re: Docket No. DMEA-4009 (Uranium)
Interstate Mining and Exploration Corp.
White Signal Property
Grant 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 in your office.

Enclosed are two copies each of memoranda from M. E. Nelson, USGS, dated October 11, and James Paone, USBM, dated October 12, 1955.

Your attention is called to the fact that the Applicant is the Lessee of the property which includes the Raven No. 1 claim, and the latter claim is not listed in the Lease and Option, nor is it outlined on the claim map.

Inasmuch as the Applicant controls the intervening Blue Jay Extension No. 4 and No. 5 claims it would be desirable to include these two claims in the proposed project in order to establish a continuous block of claims. The Janet D claim is not listed in the Lease and Option, but should be included in the proposed project if controlled by the Applicant.

It is suggested that the field examiners go into these matters with the Applicant and determine the most feasible solution. If the examiners find that the Applicant does not control the Janet D claim, we would hardly be justified in demanding its inclusion.

In the event a contract is recommended, please secure Consents to Lien as indicated by ownership.

MChing/gla 10-17-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Code 700
Mr. Ching
Enclosures

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (S/B)

cc: JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JCHosted, Rm.3210, GSA

P. F. Yopes (S/B)
Member, Bureau of Mines

Thor H. Kiilsgaard (S/B)
Member, Geological Survey

A.C.J.

10/13/55 gla

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

RECEIVED
OCT 12 1955

October 12, 1955

Memorandum

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

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

Subject: Application for assistance, DMEA Docket 4009, Interstate Mining and Exploration Corporation, White Signal Property, Grant County, New Mexico

I have reviewed the application of Interstate Mining and Exploration Corporation, DMEA Docket 4009; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The Interstate Mining and Exploration Corporation has applied for DMEA assistance to explore for uranium on a group of claims located in the White Signal Mining District, Grant County, New Mexico. The applicant proposes to drill 6 holes, each to a depth of 775 feet, in an attempt to cut the suspected vein below the water table in order to reveal unoxidized vein material. The total estimated cost is $60,500.00.

We recommend that the application be sent to the Field Team, and that they be requested to consult with D. L. Everhart, Acting Chief, Denver Exploration Branch, Atomic Energy Commission.

In accordance with your instructions, the application is attached.

James Paone
James Paone

Attachment

10/13/55 gla

IN REPLY REFER TO:

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

RECEIVED
OCT 12 1955

October 11, 1955

Re: DMEA 4009
Interstate Mining & Exploration Corp.
White Signal Group
Grant Co., New Mexico
$60,500 - Uranium

Memorandum

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

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of application.

The applicant asks assistance in exploration of a radioactive zone along a rhyolite dike in Precambrian granite and two smaller showings.

The proposed work program consists of:

6, 800-foot diamond drill holes	$24,000.00
2, 100-foot prospect shafts	22,000.00
2, 200-foot drifts	14,500.00
Total	$60,500.00

The long drill holes would seek for a zone containing primary uranium minerals 650 feet below an outcrop showing secondary radioactive minerals. The main surface showing is exposed by bulldozing for 175 feet. Six samples taken along the showing show:

Main showing	Width	1.0'	0.30% U_3O_8
10' east of main showing	"	1.0'	0.39% "
15' " " " "	"	1.5'	0.45% "
25' " " " "	"	1.0'	0.05% "
55' " " " "	"	1.0'	0.05% "
75' " " " "	"	1.0'	0.06% "

A second smaller radioactive zone has been exposed for 100 feet. Two samples here show:

Main showing	Width	1.0'	0.07% U_3O_8
40' east of main showing	"	1.0'	0.06% "

A 70-foot inclined shaft prospects a third showing. Three samples taken in the shaft showed:

At 10 feet, right wall	Width	1.0'	0.11% U_3O_8
At 40 feet, left wall	"	1.5'	1.16% "
At 70 feet, left wall	"	1.5'	0.24% "

Scintillometer readings along the shaft vein were not connected or continuous.

Summary

Six samples of ore grade were taken. The greatest length that may be taken as continuous is 15 feet represented by three samples showing an average width of 1.2 feet assaying 0.39% U_3O_8. Such a showing may justify some work such as drilling. That the program outlined is warranted appears doubtful.

Referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
OCT 12 1955

October 11, 1955

Re: DMEA 4009
Interstate Mining & Exploration Corp.
White Signal Group
Grant Co., New Mexico
$60,500 - Uranium

Memorandum

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

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of application.

The applicant seeks assistance in exploration of a radioactive zone along a rhyolite dike in Precambrian granite and two smaller showings.

The proposed work program consists of:

6, 800-foot diamond drill holes	$24,000.00
2, 100-foot prospect shafts	22,000.00
2, 200-foot drifts	14,500.00
Total	$60,500.00

The long drill holes would seek for a zone containing primary uranium minerals 650 feet below an outcrop showing secondary radioactive minerals. The main surface showing is exposed by bulldozing for 175 feet. Six samples taken along the showing show:

Main showing	Width 1.0'	0.30% U_3O_8
10' east of main showing	" 1.0'	0.39% "
15' " " " "	" 1.5'	0.45% "
25' " " " "	" 1.0'	0.05% "
55' " " " "	" 1.0'	0.05% "
75' " " " "	" 1.0'	0.06% "

A second smaller radioactive zone has been exposed for 100 feet. Two samples here show:

Main showing	Width 1.0'	0.07% U_3O_8
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Scintillometer readings along the shaft vein were not connected or continuous.

Summary

Six samples of ore grade were taken. The greatest length that may be taken as continuous is 15 feet represented by three samples showing an average width of 1.2 feet assaying 0.39% U_3O_8. Such a showing may justify some work such as drilling. That the program outlined is warranted appears doubtful.

Referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-10/11/55

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

October 7, 1955

Subject: DMEA-4009
Re: Exploration Assistance
White Signal Property

Interstate Mining and Exploration
Corporation
1036 First National Bank Building
Denver 2, Colorado

Gentlemen:

The receipt of your application dated October 4, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-4009 and referred to the Rare & Miscellaneous 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

60932

October 7, 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 - 4009 Interstate Mining and Exploration Corporation

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

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

RECEIVED
OCT 7 - 1955

October 5, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA Aid, (Uranium), Interstate Mining and Exploration Corporation, White Signal Property, Grant County, New Mexico

Enclosed are three copies of the subject application in the amount of $60,500.00. One copy of the application is being retained in our file.

This property is not in the Colorado Plateau Area.

W. M. Traver

Enclosures

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

RECEIVED
OCT 7 - 1955

October 5, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA Aid, (Uranium), Interstate Mining and Exploration Corporation, White Signal Property, Grant County, New Mexico

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W. M. Traver

W. M. Traver

Enclosures

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DMEA
Date Rec'd.
OCT 4 1955

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

RECEIVED
OCT 7 - 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. DMEA 4009
Metal or Mineral Uranium
Date Received 10-7-55
Estimated Cost $60,500.00
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: Interstate Mining and Exploration Corporation
1036 First National Bank Building
Denver 2, Colorado

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

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

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

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 Please see additional sheets attached.

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

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

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

(*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 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.

(*c*) The work will start within 30 days and be completed within 24 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?

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated October 4, 1955

INTERSTATE MINING AND EXPLORATION CORPORATION
(Applicant)

By Sidney S. Bell

Sidney S. Bell, Geological Engineer

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

INTERSTATE MINING AND EXPLORATION CORPORATION
1036 First National Bank Building
Denver 2, Colorado

RECEIVED
OCT 7 - 1955

APPLICATION FOR AID IN AN EXPLORATION PROJECT

PURSUANT TO DMEA ORDER 1

1. (a) Applicant: Interstate Mining and Exploration Corporation, 1036 First National Bank Building, Denver 2, Colorado.

   (b) Corporation - incorporated in the State of Nevada.

   (c) Officers: Boris Pregel, President, 630 Fifth Avenue, New York 20, New York.
   Alexander Pregel, Vice President, 630 Fifth Avenue, New York 20, New York.
   L. H. Seagrave, Treasurer, 612 South Flower Street, Los Angeles 17, California.
   Paul Newlon, Secretary, 575 Madison Avenue, New York 22, New York.

3. (a) Legal description of the land; The following claims all located in the White Signal Mining District, Grant County, New Mexico:

Name of Claim	Amended Location - Notice Recorded in Book	Page
Blue Jay Amended	46	75
Eugenia No. 1	46	73
Raven No. 1	46	86-87
Blue Jay Extension No. 1	46	76
Shamrock No. 1	46	88-89
Blue Jay Extension No. 6	46	79

   (b) Mine Name: No name; known to us as the White Signal Property.

   (c) Interest in the Land: Lessee.

   (d) Copy of the "Lease and Option" is attached.

4. (a) Physical Description: The main showings on the White Signal property are located in the SW corner of Blue Jay Amended claim and the SE corner of Blue Jay Extension No. 1 claim on a hilltop known as Blue Jay Hill. Five (5) diamond drill holes of 120, 120, 120, 250 and 300 foot depth have been drilled from the south slope of the hill to intersect the mineralized zone below the surface. The top of Blue Jay Hill has been extensively bulldozed to expose the mineralized zone along several hundred feet of its length. One-quarter of a mile to the NW on the Shamrock No. 1 claim, a shaft and sloping tunnel of 85 foot depth follows the mineralized contact between the granite and a basalt dike. A bulldozed strip-trench across the dike exposes the dike. Various other strip-trenches and shafts from old exploration work are scattered on the various claims.

The property is reached by paved highway twenty (20) miles south of Silver City. This highway, New Mexico State Highway No. 180, runs through the top portion of the claim group. A good dirt road connects the main showing with Highway No. 180. All showings and shafts are in the open and easily accessible for examinations.

(b) On the property itself, there is no current or past production.

(c) The country rock of the area is a pre-Cambrian medium-grained granite intruded in an east-west direction by several persistent blue-green, fine-grained, felsitic dikes dipping nearly vertically, and intruded in a north-south direction by several dark gabbroic dikes that dip to the east at 45 degrees.

In approximately the center of the property, there is a low, rounded, 65 foot high hill called Blue Jay Hill. The backbone of this hill is a felsite dike, trending in an east-west direction and dividing itself on the western flank of the incline so that two narrower stringers parallel each other across the hill. The stresses set up by this intrusive have fractured the granite badly, although there is no consistent pattern of lineation in an overall examination of the property. This fracturing has enabled weathering processes to intrude the hill at depth.

There are two radioactive zones on Blue Jay Hill, both parallelling the northern exposures of the two dike stringers crossing the hill from east to west. These zones vary from 1.5 feet to 3.5 feet in width. Bulldozing along the crest of the hill has exposed the primary radioactive zone for 175 feet of its length, and it is still open on one end which is covered by debris of bulldozing.

The secondary radioactive zone parallelling the southern flexture of the dike has been exposed by bulldozing for 100 feet along its length.

4. (c) Continued:

These radioactive areas are characteristically composed of a highly weathered zone in the granite. This zone is a fissure vein carrying a clay-like gossan stained brick red in places by iron minerals. There is a good showing of fine yellow crystals of autunite deposited throughout the gossan. Autunite crystals can be found for a short distance in the decomposed granite bordering this highly weathered area. Several minute apple-green crystals of torbernite were found at this location in the bottom of the shallow hole.

At the main showing itself, a characteristic sequence of rock types was logged and this same sequence was noted at depth in the drill cores, which helped to locate the fissure vein beneath the surface. At this point the felsite dike is 10 foot wide.

Continuing to the north of the dike is one foot of fractured and hemitite-stained, medium-grained granite, grading into three foot of hard granite recognized by its dull brick-red and watery-green crystals. There is an abrupt transition from this hard crystalline granite to the 3.5 foot radioactive fissure vein zone containing a chalky hemitite-stained gouge. The 15 foot and more of decomposed and weathered granite that forms the northern contact of the radioactive showing is an abrupt transition only visually - for the eye can note the predominant quartz crystals in the leached granite, giving the granite a noticable sugary texture in comparison to the clay-like gossan characteristic of the fissure vein. Actually the transition is not quite so abrupt for the granite is badly decomposed and is as readily broken as the clay-like gossan. This permiability of the granite has allowed autunite crystals to be deposited in it near the zone of contact with the fissure vein.

Scintillator readings along the main showing ranged from .24 on the 2.5 scale on the west end of the excavation, to .6 on the 2.5 scale along the excavation to the east. These readings were obtained with a background count of .23 on the .05 scale. U308 surface assays taken along this excavation gave the following results:

0.30 U308 on the extreme western end of the excavation
0.39 U308 10 foot to the right
0.45 U308 15 foot to the right
0.05 U308 25 foot to the right
0.05 U308 55 foot to the right
0.06 U308 75 foot to the right

4. (c) Continued:

About 100 feet to the Southwest is a secondary radioactive showing that is exposed for 100 foot of its length. This showing parallels the northern outcropping of the southern limb of the east-west felsite dike. Fractured, well-weathered, rubbly granite is the host rock. A hard, dark-brown to black, hematitic exposure of 2 to 5 inches in width extends for 50 feet in the area of the best radioactive readings. The radioactive zone varies in width from 3 foot on the west to 5 inches on the eastern end. Scintillator readings along the exposure varied from .23 on the .5 scale to .18 on the .5 scale - with a background count of .23 on the .05 scale. Two U308 assays of this being netted results of 0.06 and 0.07 across a one foot width. No autunite or torbenite crystals were observed in the gossan.

About one-quarter of a mile to the Northwest of the Blue Jay Hill, in the middle of the Shamrock No. 1 claim, is an inclined shaft called the Shamrock Shaft. This shaft is located on the contact between a dark rusty-zoned 20 foot basalt dike, dipping -60 degrees east, and a medium-grained, pink granite; fractured and iron-stained along its openings. The basalt forms the roof of the shaft and in a fissure vein along the contact with the granite is a leached zone of soft granite and pockety, clay-like, iron-stained gossan varying from 1 foot - 2½ foot thick. From the surface, a -45 degree descent is made by a ladder for the first 20 feet, while the remaining 50 feet is down to a -25 degree slope of headroom. Well developed apple-green crystals of torbernite, up to 1/4 inch in size are abundantly in evidence on the walls and roof of the shaft at about 40 foot - 50 foot level. Elsewhere in the shaft the crystals are in evidence, but not in such abundance as at this level. Near the collar of the shaft these crystals are collected primarily along the fissure zone at the contact, but at depth from 40 foot on, the crystals have penetrated the soft, weathered surface of the granite itself. Dust masks most of the walls and roof of the shaft and tunnel, but channel sampling and using the pick to freshen up exposures revealed this mineralization. The best Scintillator readings were observed along the granite dike contact on the north wall at 15 feet, and along the south wall contact at 40 foot - 50 foot where the readings went entirely off the top 5 scale in several places. All other readings were from .5 to .15 on the 5 scale, with a background count of .13 on the .05 scale. These readings, although not connected or continuous along the fissure vein, seemed to get better at depth.

Three channel samples were taken in the tunnel. At 10 feet, a 1½ foot channel sample across the vein on the North wall ran 0.11 U308. At 40 feet, a 2 foot channel sample across the vein on the South wall assayed 1.16 U308, and at 70 feet, a 2 foot channel sample across the vein on the South wall assayed 0.24 U308.

4. (c) Continued:

The vicinity of the shaft is accessible by car. The shaft itself is dry, and although low headroom prevails at its deepest point, one is able to stand erect along most of the tunnel's length.

In this White Signal district, only secondary uranium mineralization has been observed on the several properties being actively developed. This mineralization is deposited in fissure veins adjacent to areas disturbed and fractured by dikes (as can be seen on the maps accompanying this application). Usually autunite is found near the surface with torbernite crystals in evidence at shallow depth - deposited by precipitation from solution of primary uranium mineralization in meteoric ground waters along fractures in the more favorable host rocks. It was found during exploration of the Merry Widow vein, by diamond drilling on adjacent property, that the vein material in the larger fissures had been thoroughly oxidized by ground waters to a depth of at least 550 feet. It is believed that unoxidized parts of some of the veins below the water table may contain primary uranium mineralization. From a similar situation at Marysvale, Utah, it is likely that there is a concentration of primary uranium mineralization at depth that has been the source of distribution for the secondary uranium mineralization that has been deposited by precipitation along the fissure veins.

It is the desire of the applicant to drill several deep holes in an attempt to cut the vein at depth below the water table. Drilling six -65 degree holes of 775 feet from a set-up in the dry creek bed 425 feet south of the main showing on Blue Jay Hill, and directly below No. 5 hole, will probably intersect the vein at 750 foot depth. This should be deep enough to recover unoxidized vein material, and it is hoped, evidence primary uranium mineralization.

4. (d) The property is reached by one and one-half (1½) miles of dirt road that connects with New Mexico State Highway No. 180, an oiled gravel-top highway connecting Silver City with Lordsburg. Silver City is about twenty (20) miles to the North, a town of 7,022, and the shipping and shopping center of Grant County and Southwestern New Mexico.

4. (e) Manpower is available from the nearby mining communities of Silver City, Hanover and Bayard. Materials, supplies and equipment are available at Silver City. Water is readily available at the mining camp at Tyrone. Power is available in any required quantity from Public Service Company of New Mexico.

5. (a) The exploration will be conducted for uranium. A pitchblende sample has been picked up on the property by a member of the USGS office in Silver City.

5. (b) Project 1 - It is proposed to drill six (6) 800 foot holes through a -40 degree radius, in a direction approximately north, at an angle of -65 degrees from a set-up in the dry creek bed 425 foot to the south of the main showing on Blue Jay Hill. This would intersect the vein at approximately 750 feet. It is hoped that this will be below the oxidized water table zone, so that the chances of recovery of primary uranium mineralization would be very good.

Project 2 - It is proposed to sink a 100 foot prospect shaft on Blue Jay Hill at the site of the main showing and follow the fissure vein at approximately - 80 degrees. 200 feet of drifting is anticipated on the vein at the bottom of the shaft.

At the same time, it is proposed to deepen the prospect tunnel on Shamrock No. 1 property by 100 feet, following the contact between the granite and basalt dike. This would allow the vein to be checked at depth and enable us to ascertain whether the radioactive readings continue to improve at depth, as they do in the initial portion of the tunnel.

5. (c) The work would start within thirty (30) days and be completed within one year from the date of an exploration project contract.

5. (d) The applicant is a Corporation organized for the purpose of exploring and operating prospective producing properties. The operation will be supervised by Dr. G. C. Ridland, Denver, Colorado, Consulting Geologist, who is known to the DMEA as Manager of Cold Spring Tungsten, Inc. mine at Nederland, Colorado (DMEA Docket 1447X; Contract Idm - E54).

6. Estimate - per units cost:

6 - 800 foot diamond drill holes - 4,800 ft. @ $5.00 per foot of drilling	$24,000.00
2 - 100 foot prospect shafts - 200 ft. @ $110.00 per foot of shaft	22,000.00
2 - 200 foot drifts - 400 ft. @ $37.00 per foot of drift	14,500.00
Grand total cost	$60,500.00

6. (a) Independent Contracts:

Drilling - 5.00/ft. from 700 feet - 900 feet depth
Cementing costs $5.00/hr. including cost of cement
Moving in and setting up - $50.00
Moving from one site to another $5.00

6. (b) Labor:

Miners	(8 men - 2 shifts)	4488 hrs. @ $1.89	$8,482.00
Surfacemen	(4 men - 2 shifts)	2244 hrs. @ $1.89	4,241.00
Hoistmen	(4 men - 2 shifts)	2244 hrs. @ $1.89	4,241.00
Superintendent-Foreman		5 months @ $350.00	1,750.00
Engineer		5 months @ $500.00	2,500.00
Consultant		5 months @ $500.00	2,500.00
Total labor			$16,910.00

6. (c) Operating materials and supplies:

Electric power	50,000 KWH @ .023 mills	$1,150.00	
Mine timber	5 M @ $80.00/M (2x8-16 ft.)	400.00	
Pipe 2" water	700 ft. @ $.37/ft.	259.00	
Pipe 2" air	700 ft. @ $.65/ft.	455.00	
Pipe 12" vent	600 ft. @ $1.00/ft.	600.00	
Fittings and miscellaneous	Lot	100.00	
Small tools, shovels, picks, hammers etc.		100.00	
Powder	600 ft. @ $2.00/ft.	1,200.00	
Caps and fuses	600 ft. @ $.32/ft.	192.00	
Drill steel	600 ft. @ $.75/ft.	450.00	
Sharpening	600 ft. @ $.14/ft.	84.00	
Rail and ties	400 ft. @ $1.50/ft.	600.00	
Hoist	600 ft. @ $.45/ft.	270.00	
Hoisting rope	Lot	250.00	
Water	$.50/per 1,000 gallons	10.00	
Power-motor	600 ft. @ $.14	84.00	
water pump	600 ft. @ $.23	138.00	
compressor	600 ft. @ $1.69	1,014.00	$7,356.00

6. (d) Operating Equipment:

Air Compressor (2 drill)	$5,000.00	
Electric hoist	1,800.00	
Electric pumps (2)	2,500.00	
Copco drifter driller (2)	1,400.00	
Ingersoll-Rand Stoper	500.00	
Jack-hammer	700.00	
Drill connections	75.00	$11,975.00
Above to be furnished by operator, so only 10% depreciation charged to program		$1,197.00

6. (e) None.

6. (f) A small surface shed to house compressor, tools equipment $500.00
Hoist - on surface 700.00

6. (g) **Miscellaneous:**

Cost of Maintenance:

Air compressor	5 months @ $25.00/mo.	$125.00	
Hoist	5 months @ $10.00/mo.	50.00	
Pumps	5 months @ $25.00/mo.	125.00	
Drills	5 months @ $10.00/mo.	50.00	$350.00
Assaying sample			$150.00
Accounting	5 months @ $100.00/mo.		$500.00
Payroll taxes - including workman's compensation, liability insurance, unemployment etc. - 10% of payroll			$1,541.00

6. (h) **Contingencies:**

Allowance for contingencies not considerabove	$500.00
Total	$36,504.00

7. (a) Applicant is prepare to pay it's share of the cost.

7. (b) Money.

Sidney S. Bell
Geological Engineer

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

RECEIVED
OCT 7 - 1955

October 5, 1955

224 New Customhouse
Denver 2, Colorado

DMEA-4009

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA Aid, (Uranium), Interstate Mining and Exploration Corporation, White Signal Property, Grant County, New Mexico

Enclosed are three copies of the subject application in the amount of $60,500.00. One copy of the application is being retained in our file.

This property is not in the Colorado Plateau Area.

W. M. Traver

W. M. Traver

Enclosures

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DMEA
OCT 4 1955
BUREAU OF MINES
Denver, Colorado

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OCT 7 - 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. DMEA 4009
Metal or Mineral Uranium
Date Received 10-7-55
Estimated Cost 60,500.00
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: Interstate Mining and Exploration Corporation
1036 First National Bank Building
Denver 2, Colorado

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

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

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

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 Please see additional sheets attached.

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

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

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

(*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 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.

(*c*) The work will start within 30 days and be completed within 24 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 October 4, 1955

INTERSTATE MINING AND EXPLORATION CORPORATION
(Applicant)

By Sidney S. Bell

Sidney S. Bell, Geological Engineer

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

INTERSTATE MINING AND EXPLORATION CORPORATION
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Denver 2, Colorado

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APPLICATION FOR AID IN AN EXPLORATION PROJECT

PURSUANT TO DMEA ORDER 1

1. (a) Applicant: Interstate Mining and Exploration Corporation, 1036 First National Bank Building, Denver 2, Colorado.

   (b) Corporation - incorporated in the State of Nevada.

   (c) Officers: Boris Pregel, President, 630 Fifth Avenue, New York 20, New York.
   Alexander Pregel, Vice President, 630 Fifth Avenue, New York 20, New York.
   L. H. Seagrave, Treasurer, 612 South Flower Street, Los Angeles 17, California.
   Paul Newlon, Secretary, 575 Madison Avenue, New York 22, New York.

3. (a) Legal description of the land: The following claims all located in the White Signal Mining District, Grant County, New Mexico:

Name of Claim	Amended Location - Notice Recorded in Book	Page
Blue Jay Amended	46	75
Eugenia No. 1	46	73
Raven No. 1	46	86-87
Blue Jay Extension No. 1	46	76
Shamrock No. 1	46	88-89
Blue Jay Extension No. 6	46	79

   (b) Mine Name: No name; known to us as the White Signal Property.

   (c) Interest in the Land: Lessee.

   (d) Copy of the "Lease and Option" is attached.

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4. (a) Physical Description: The main showings on the White Signal property are located in the SW corner of Blue Jay Amended claim and the SE corner of Blue Jay Extension No. 1 claim on a hilltop known as Blue Jay Hill. Five (5) diamond drill holes of 120, 120, 120, 250 and 300 foot depth have been drilled from the south slope of the hill to intersect the mineralized zone below the surface. The top of Blue Jay Hill has been extensively bulldozed to expose the mineralized zone along several hundred feet of its length. One-quarter of a mile to the NW on the Shamrock No. 1 claim, a shaft and sloping tunnel of 85 foot depth follows the mineralized contact between the granite and a basalt dike. A bulldozed strip-trench across the dike exposes the dike. Various other strip-trenches and shafts from old exploration work are scattered on the various claims.

The property is reached by paved highway twenty (20) miles south of Silver City. This highway, New Mexico State Highway No. 180, runs through the top portion of the claim group. A good dirt road connects the main showing with Highway No. 180. All showings and shafts are in the open and easily accessible for examinations.

(b) On the property itself, there is no current or past production.

(c) The country rock of the area is a pre-Cambrian medium-grained granite intruded in an east-west direction by several persistent blue-green, fine-grained, felsitic dikes dipping nearly vertically, and intruded in a north-south direction by several dark gabbroic dikes that dip to the east at 45 degrees.

In approximately the center of the property, there is a low, rounded, 65 foot high hill called Blue Jay Hill. The backbone of this hill is a felsite dike, trending in an east-west direction and dividing itself on the western flank of the incline so that two narrower stringers parallel each other across the hill. The stresses set up by this intrusive have fractured the granite badly, although there is no consistent pattern of lineation in an overall examination of the property. This fracturing has enabled weathering processes to intrude the hill at depth.

There are two radioactive zones on Blue Jay Hill, both parallelling the northern exposures of the two dike stringers crossing the hill from east to west. These zones vary from 1.5 feet to 3.5 feet in width. Bulldozing along the crest of the hill has exposed the primary radioactive zone for 175 feet of its length, and it is still open on one end which is covered by debris of bulldozing.

The secondary radioactive zone parallelling the southern flexture of the dike has been exposed by bulldozing for 100 feet along its length.

4. (c) Continued:

These radioactive areas are characteristically composed of a highly weathered zone in the granite. This zone is a fissure vein carrying a clay-like gossan stained brick red in places by iron minerals. There is a good showing of fine yellow crystals of autunite deposited throughout the gossan. Autunite crystals can be found for a short distance in the decomposed granite bordering this highly weathered area. Several minute apple-green crystals of torbernite were found at this location in the bottom of the shallow hole.

At the main showing itself, a characteristic sequence of rock types was logged and this same sequence was noted at depth in the drill cores, which helped to locate the fissure vein beneath the surface. At this point the felsite dike is 10 foot wide.

Continuing to the north of the dike is one foot of fractured and hemitite-stained, medium-grained granite, grading into three foot of hard granite recognized by its dull brick-red and watery-green crystals. There is an abrupt transition from this hard crystalline granite to the 3.5 foot radioactive fissure vein zone containing a chalky hemitite-stained gouge. The 15 foot and more of decomposed and weathered granite that forms the northern contact of the radioactive showing is an abrupt transition only visually - for the eye can note the predominant quartz crystals in the leached granite, giving the granite a noticable sugary texture in comparison to the clay-like gossan characteristic of the fissure vein. Actually the transition is not quite so abrupt for the granite is badly decomposed and is as readily broken as the clay-like gossan. This permiability of the granite has allowed autunite crystals to be deposited in it near the zone of contact with the fissure vein.

Scintillator readings along the main showing ranged from .24 on the 2.5 scale on the west end of the excavation, to .6 on the 2.5 scale along the excavation to the east. These readings were obtained with a background count of .23 on the .05 scale. U308 surface assays taken along this excavation gave the following results:

0.30 U308 on the extreme western end of the excavation
0.39 U308 10 foot to the right
0.45 U308 15 foot to the right
0.05 U308 25 foot to the right
0.05 U308 55 foot to the right
0.06 U308 75 foot to the right

4. (c) Continued:

About 100 feet to the Southwest is a secondary radioactive showing that is exposed for 100 foot of its length. This showing parallels the northern outcropping of the southern limb of the east-west felsite dike. Fractured, well-weathered, rubbly granite is the host rock. A hard, dark-brown to black, hematitic exposure of 2 to 5 inches in width extends for 50 feet in the area of the best radioactive readings. The radioactive zone varies in width from 3 foot on the west to 5 inches on the eastern end. Scintillator readings along the exposure varied from .23 on the .5 scale to .18 on the .5 scale - with a background count of .23 on the .05 scale. Two U308 assays of this being netted results of 0.06 and 0.07 across a one foot width. No autunite or torbenite crystals were observed in the gossan.

About one-quarter of a mile to the Northwest of the Blue Jay Hill, in the middle of the Shamrock No. 1 claim, is an inclined shaft called the Shamrock Shaft. This shaft is located on the contact between a dark rusty-zoned 20 foot basalt dike, dipping -60 degrees east, and a medium-grained, pink granite; fractured and iron-stained along its openings. The basalt forms the roof of the shaft and in a fissure vein along the contact with the granite is a leached zone of soft granite and pockety, clay-like, iron-stained gossan varying from 1 foot - 2½ foot thick. From the surface, a -45 degree descent is made by a ladder for the first 20 feet, while the remaining 50 feet is down to a -25 degree slope of headroom. Well developed apple-green crystals of torbernite, up to 1/4 inch in size are abundantly in evidence on the walls and roof of the shaft at about 40 foot - 50 foot level. Elsewhere in the shaft the crystals are in evidence, but not in such abundance as at this level. Near the collar of the shaft these crystals are collected primarily along the fissure zone at the contact, but at depth from 40 foot on, the crystals have penetrated the soft, weathered surface of the granite itself. Dust masks most of the walls and roof of the shaft and tunnel, but channel sampling and using the pick to freshen up exposures revealed this mineralization. The best Scintillator readings were observed along the granite dike contact on the north wall at 15 feet, and along the south wall contact at 40 foot - 50 foot where the readings went entirely off the top 5 scale in several places. All other readings were from .5 to .15 on the 5 scale, with a background count of .13 on the .05 scale. These readings, although not connected or continuous along the fissure vein, seemed to get better at depth.

Three channel samples were taken in the tunnel. At 10 feet, a 1½ foot channel sample across the vein on the North wall ran 0.11 U308. At 40 feet, a 2 foot channel sample across the vein on the South wall assayed 1.16 U308, and at 70 feet, a 2 foot channel sample across the vein on the South wall assayed 0.24 U308.

4. (c) Continued:

The vicinity of the shaft is accessible by car. The shaft itself is dry, and although low headroom prevails at its deepest point, one is able to stand erect along most of the tunnel's length.

In this White Signal district, only secondary uranium mineralization has been observed on the several properties being actively developed. This mineralization is deposited in fissure veins adjacent to areas disturbed and fractured by dikes (as can be seen on the maps accompanying this application). Usually autunite is found near the surface with torbernite crystals in evidence at shallow depth - deposited by precipitation from solution of primary uranium mineralization in meteoric ground waters along fractures in the more favorable host rocks. It was found during exploration of the Merry Widow vein, by diamond drilling on adjacent property, that the vein material in the larger fissures had been thoroughly oxidized by ground waters to a depth of at least 550 feet. It is believed that unoxidized parts of some of the veins below the water table may contain primary uranium mineralization. From a similar situation at Marysvale, Utah, it is likely that there is a concentration of primary uranium mineralization at depth that has been the source of distribution for the secondary uranium mineralization that has been deposited by precipitation along the fissure veins.

It is the desire of the applicant to drill several deep holes in an attempt to cut the vein at depth below the water table. Drilling six -65 degree holes of 775 feet from a set-up in the dry creek bed 425 feet south of the main showing on Blue Jay Hill, and directly below No. 5 hole, will probably intersect the vein at 750 foot depth. This should be deep enough to recover unoxidized vein material, and it is hoped, evidence primary uranium mineralization.

4. (d) The property is reached by one and one-half (1½) miles of dirt road that connects with New Mexico State Highway No. 180, an oiled gravel-top highway connecting Silver City with Lordsburg. Silver City is about twenty (20) miles to the North, a town of 7,022, and the shipping and shopping center of Grant County and Southwestern New Mexico.

4. (e) Manpower is available from the nearby mining communities of Silver City, Hanover and Bayard. Materials, supplies and equipment are available at Silver City. Water is readily available at the mining camp at Tyrone. Power is available in any required quantity from Public Service Company of New Mexico.

5. (a) The exploration will be conducted for uranium. A pitchblende sample has been picked up on the property by a member of the USGS office in Silver City.

5. (b) Project 1 - It is proposed to drill six (6) 800 foot holes through a -40 degree radius, in a direction approximately north, at an angle of -65 degrees from a set-up in the dry creek bed 425 foot to the south of the main showing on Blue Jay Hill. This would intersect the vein at approximately 750 feet. It is hoped that this will be below the oxidized water table zone, so that the chances of recovery of primary uranium mineralization would be very good.

Project 2 - It is proposed to sink a 100 foot prospect shaft on Blue Jay Hill at the site of the main showing and follow the fissure vein at approximately - 80 degrees. 200 feet of drifting is anticipated on the vein at the bottom of the shaft.

At the same time, it is proposed to deepen the prospect tunnel on Shamrock No. 1 property by 100 feet, following the contact between the granite and basalt dike. This would allow the vein to be checked at depth and enable us to ascertain whether the radioactive readings continue to improve at depth, as they do in the initial portion of the tunnel.

5. (c) The work would start within thirty (30) days and be completed within one year from the date of an exploration project contract.

5. (d) The applicant is a Corporation organized for the purpose of exploring and operating prospective producing properties. The operation will be supervised by Dr. G. C. Ridland, Denver, Colorado, Consulting Geologist, who is known to the DMEA as Manager of Cold Spring Tungsten, Inc. mine at Nederland, Colorado (DMEA Docket 1447X; Contract Idm - E54).

6. Estimate - per units cost:

6 - 800 foot diamond drill holes - 4,800 ft. @ $5.00 per foot of drilling	$24,000.00
2 - 100 foot prospect shafts - 200 ft. @ $110.00 per foot of shaft	22,000.00
2 - 200 foot drifts - 400 ft. @ $37.00 per foot of drift	14,500.00
Grand total cost	$60,500.00

6. (a) Independent Contracts:

Drilling - 5.00/ft. from 700 feet - 900 feet depth
Cementing costs $5.00/hr. including cost of cement
Moving in and setting up - $50.00
Moving from one site to another $5.00

6. (b) **Labor:**

Miners	(8 men - 2 shifts)	4488 hrs. @ $1.89	$8,482.00
Surfacemen	(4 men - 2 shifts)	2244 hrs. @ $1.89	4,241.00
Hoistmen	(4 men - 2 shifts)	2244 hrs. @ $1.89	4,241.00
Superintendent-Foreman		5 months @ $350.00	1,750.00
Engineer		5 months @ $500.00	2,500.00
Consultant		5 months @ $500.00	2,500.00
Total labor			$16,910.00

6. (c) **Operating materials and supplies:**

Electric power	50,000 KWH @ .023 mills	$1,150.00	
Mine timber	5 M @ $80.00/M (2x8-16 ft.)	400.00	
Pipe 2" water	700 ft. @ $.37/ft.	259.00	
Pipe 2" air	700 ft. @ $.65/ft.	455.00	
Pipe 12" vent	600 ft. @ $1.00/ft.	600.00	
Fittings and miscellaneous	Lot	100.00	
Small tools, shovels, picks, hammers etc.		100.00	
Powder	600 ft. @ $2.00/ft.	1,200.00	
Caps and fuses	600 ft. @ $.32/ft.	192.00	
Drill steel	600 ft. @ $.75/ft.	450.00	
Sharpening	600 ft. @ $.14/ft.	84.00	
Rail and ties	400 ft. @ $1.50/ft.	600.00	
Hoist	600 ft. @ $.45/ft.	270.00	
Hoisting rope	Lot	250.00	
Water	$.50/per 1,000 gallons	10.00	
Power-motor	600 ft. @ $.14	84.00	
water pump	600 ft. @ $.23	138.00	
compressor	600 ft. @ $1.69	1,014.00	$7,356.00

6. (d) **Operating Equipment:**

Air Compressor (2 drill)	$5,000.00	
Electric hoist	1,800.00	
Electric pumps (2)	2,500.00	
Copco drifter driller (2)	1,400.00	
Ingersoll-Rand Stoper	500.00	
Jack-hammer	700.00	
Drill connections	75.00	$11,975.00
Above to be furnished by operator, so only 10% depreciation charged to program		$1,197.00

6. (e) None.

6. (f) A small surface shed to house compressor, tools equipment $500.00
Hoist - on surface 700.00

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6. (g) **Miscellaneous:**

Cost of Maintenance:

Air compressor	5 months @ $25.00/mo.	$125.00	
Hoist	5 months @ $10.00/mo.	50.00	
Pumps	5 months @ $25.00/mo.	125.00	
Drills	5 months @ $10.00/mo.	50.00	$350.00
Assaying sample			$150.00
Accounting	5 months @ $100.00/mo.		$500.00
Payroll taxes - including workman's compensation, liability insurance, unemployment etc. - 10% of payroll			$1,541.00

6. (h) **Contingencies:**

Allowance for contingencies not considerabove	$500.00
Total	$36,504.00

7. (a) Applicant is prepare to pay it's share of the cost.

7. (b) Money.

Sidney S. Bell
Geological Engineer

Sam L. Phillips
Knob Mining Co.
Spruce Pine, N.C.

SPRUCE PINE
OCT 6
6 AM
1955
N.C.

Mr. Laurence A. Rank, Chief
Nonmetallic Minerals Division
U. S. Dept. of the Interior, D.M.E.A.
Washington 25, D.C.

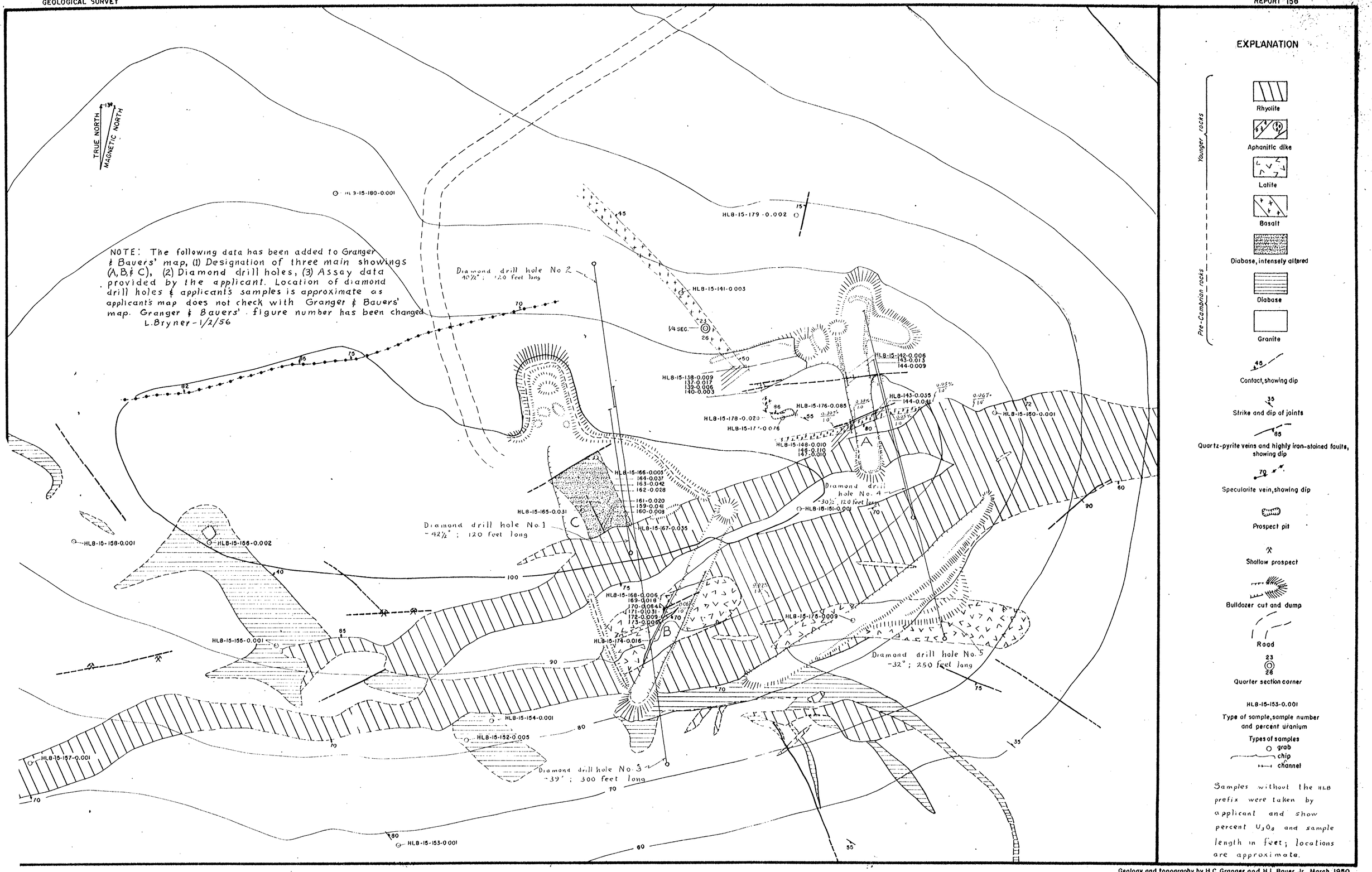

FIGURE 3 – GEOLOGIC MAP AND ASSAY PLAN OF URANIUM OCCURRENCES ON BLUE JAY CLAIM, WHITE SIGNAL DISTRICT, GRANT COUNTY, NEW MEXICO.

30 0 30 Feet

Contour interval 10 feet
Datum is assumed

Geology and topography by H.C. Granger and H.L. Bauer, Jr., March 1950

DMEA - 4009