DMEA Form 1

DEFENSE MINERALS EXPLORATION ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMEA Docket No. 4445

DO NOT DETACH THIS SLIP

Action on this document is recorded and controlled in the Docket, Mails and Files Branch. Any movement of this document between divisions or offices in DMEA or movement outside DMEA must be recorded in the Docket, Mails and Files Branch, and therefore, the document must be routed through that Branch.

Copies sent to:

~~23~~ held for Kiilsgaard

Routing Slip

To:	700	Date	8/31/56
To:	~~Operations Coord.~~ Mr. Crawford	Date	9/24/56
To:	Operating Com.	Date	10/4/56
To:	Adm.	Date	10-5-56
To:	Code 130	Date	2-7-57
To:	110	Date	2-8-57
To:	100	Date	2-8-57
To:	225	Date	2-8-57
To:		Date	
To:		Date	
To:		Date	
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To:		Date	

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IMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

DMEA NO. 4445

Application (Denied
(Withdrawn
(After disposition, delete items not applicable)

Contract (Terminated - not Certified
(Cancelled
(Terminated - Certified
(Royalty Agreement

This is the official contract file containing all official records of the project. The records contained in the files are checked and are arranged in this order:

Left Side

Interim Royalty Audits
Reports of Royalty Review
Certification of Discovery
Certificate of Audit (Final)
Interim Audit(s)
Report of Review
Termination Notice or Agreement
Recision Notice
Assignment of Contract
Contract Amendments (latest on top)
Contract with all exhibits and annexes
Owner's Consent to Lien
Subordination Agreement
✓ Leases and assignments of leases BIDS ✓
✓ Application and attachments
(3) Envelope for maps

Right Side

Project summary
Work completed analysis
All other material is filed in chronological order with correspondence including the following reports as checked:

Final Field Team Report (Tab)
Operator's Final Report
(2R) Interim Reports
(2R) Operator's monthly reports and all attachments (latest on top)
On-site Exam Report(s) (Tab)
(4) Settlement Sheets

When the volume of records is expected to warrant additional folders, or when convenience of reference warrants separate folders for certain records, they should be set up in this order:

Left Side

Folder No. 2: (In chron. order) Interim Summary Reports by W. O. Engineers

Right Side

Operator's Semi-Annual Report for Certified Project, Field Team Interim Reports, Operator's Monthly Report with transmittal, narrative, maps, and Field Team review.

Folder No. 3: Maps (Use pocket folder or envelope. Fold maps with title block out and show reference to related document or correspondence.)

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

9775

10/8/56 gla

RECEIVED
OCT - 8 1956

Yakima, Washington
304 North 26th Avenue
October 3, 1956

U. S. Department of the Interior
Defense Mineral Exploration Administration
Washington 25, D.C.

Attention: Allen S. Dakan

Subject: DMEA-4445

Dear Sir:

Enclosed are bids showing the cost of drilling the Little Joe claims involved in our DMEA loan application, Docket No. 4445. Although this was not requested in the application, we felt that they may be of use to you in the consideration of our application. We are, of course, anxious to hear of your decision.

Sincerely yours,

HELICOPTER EXPLORATION CO.

Carl Brady

Carl F. Brady

CFB/rw

Enclosures

ANgelus 2-6181

McCary - Beacom Co.

MINING — OIL

2155 EAST SEVENTH STREET • LOS ANGELES 23, CALIFORNIA

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September 18, 1956

Mr. Joseph Staman
Blewett Hotel
Yakima, Washington

Dear Mr. Staman:

The following is a list of drilling bids that you requested on your property located in Marble Canyon, Arizona.

Geohole, Inc.
Room 100
El Rancho Hotel
Gallup, New Mexico
Attention: Mr. Curtis L. Chadwick

pluging, air rotary	-	$1.75 per foot
pluging, water	-	2.25 per foot
coring	-	6.00 per foot
standby time	-	17.50 per hour
moving time	-	17.50 per hour
probing service	-	.05 per foot

Moving time will be from Gallup, New Mexico to drilling area and back to Gallup.

Standby time will be charged when the drilling operations are delayed due to lack of drill sites, etc.

If you furnish personnel to do the probing, the rental fee for the probe will be $100.00 a month. The probe is a Babbel counter with 500 feet of cable.

Estimated costs for project.
Estimated by Phillip H. McCary, Jr.

10,000 feet of drilling on project.

pluging, air rotary - $1.75 per foot, 10,000 ft.	-	$17,500.00
probing, Babbel counter .05 per foot "	-	500.00
estimated bulldozer work.		
D6 Cat. - 12.50 per hour - 180 hours for project		2,250.00
moving time in and out		
estimated time for moving, total 17.50 per hour, 40 hours		700.00
Total estimated cost for project		$20,950.00

ANgelus 2-6181

McCary - Beacom Co.

MINING — OIL

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Term of project estimated at six weeks with 30 working days.
Estimated bulldozer work is 3/4 of total working days based on an eight hour shift.
No wet drilling, coring, or standby time is anticipated.

American Drilling Company
615 North 1st Street
Grand Junction, Colorado
Attention: Mr. Richard Travis

pluging, air rotary	-	$1.25 per foot
pluging, water	-	1.50 per foot
coring	-	5.00 per foot plus $4.00 per foot for every foot less than 100 ft. of use from a diamond bit, or $14.00 an hour plus bits.
standby time	-	Not quoted
moving time	-	No charge if total bill is more than $5,000.00. If total bill is less than $5,000.00, moving charge will be $400.00 for both ways.
probing service	-	No charge

The probe will be a Babbel counter with accompanying probe.

Estimated costs for project.
Estimates by Phillip H. McCary, Jr.

10,000 feet of drilling on project.

pluging, air rotary	- $1.25 per foot, 10,000 feet	- $12,500.00
probing service	- No charge	
estimated bulldozer work.		
D6 Cat.	- 12.50 per hour - 180 hours for project	2,250.00
moving time	- No charge	
Total estimated cost for project		$14,750.00

Term of project estimated at six weeks with 30 working days.
Estimated bulldozer work is 3/4 of total working days based on an eight hour shift.
No wet drilling, coring, or standby time is anticipated.

McClung Drilling Corp.
Escalante, Utah
Attention: Mr. Glenn E. McClung

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McCary - Beacom Co

MINING — OIL

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pluging, air rotary	-	$2.00 per foot
pluging, water	-	2.00 per foot
coring	-	at cost
standby time	-	no charge
moving time	-	no charge
probing service	-	no charge

The probe will be a P.R.I. counter with accompanying probe.

Estimated costs for project.
Estimates by Phillip H. McCary, Jr.

10,000 feet of drilling on project.

pluging, air rotary	-	$2.00 per foot, 10,000 feet	- $20,000.00
probing service	-	no charge	
all bulldozer work furnished with drilling bid. A D6 Cat. will be used.			
Moving time	-	no charge	
Total estimated cost for project			$20,000.00

Term of project estimated at six weeks with 30 working days.
No wet drilling, coring, or standby time is anticipated.

You will note that there is a variation in the various bids, but I assume the Government will accept the one that they think will be the cheaper. All of these companies are excellent drilling companies and each of them is fully qualified to do the required work.

Enclosed you will find an invoice for the expenses incurred plus a small service charge. You can make the check payable to the company and mail it to the above address.

If you need any additional information concerning these bids, do not hesitate to write or call.

Very truly yours,

McCARY-BEACOM COMPANY

Phillip H. McCary Jr.

Phillip H. McCary, Jr.

PHM:rm
Encl.

ANgelus 2-6181

McCary - Beacom Co.

MINING — OIL

2155 EAST SEVENTH STREET • LOS ANGELES 23, CALIFORNIA

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OCT - 8 1956

9-21-56

Dear Mr. Staman:

The following is another drilling bid submitted by Mr. Edward Carter of Dimmitt, Texas. This bid concerns the property you have in Marble Canyon, Arizona.

Mr. Edward Carter,
P. O. Box 425,
Dimmitt,
Texas.

pluging, air rotary. —	$1.35 per foot.
pluging, water —	$1.60 per foot.
coring —	3.00 per foot. (If coring is to be done in the Shinarump conglomerate, all necessary bits to be furnished by client.)
stand by time —	Not quoted.
moving time —	No charge if drilling bid is for 10,000 feet or more.
probing service —	No charge (type of probe not given)

Estimated costs for project.
Estimates by Philip H. McCary Jr.

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10,000 feet of drilling on project.

plugging, air rotary - $1.35 per foot, 10,000 feet	$13,500.00
probing service - No charge	
estimated bulldozer work.	
D6 CAT - $12.50 per hour - 180 hours for project	$2,250.00
moving Time - No charge	
Total estimated cost for project	$15,750.00

Term of project estimated at six weeks with 30 working days.
Estimated bulldozer work is $\frac{3}{4}$ of total working days based on an eight hour shift.
No wet drilling, coring, or standby time is anticipated.

I hope that you will pardon my not typing this, but I wanted to get this information to you as soon as possible.

Very Truly yours,
Phillip H. McCarty Jr.

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

August 28, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Application for DMEA Aid (Uranium) Helicopter Exploration Company (Little Joe claims) Coconino County, Arizona

Enclosed are two copies of the subject application in the amount of $25,000.00.

The Applicant submitted no bids to support his estimate of drilling costs, but he states that he has asked for bids. The Applicant has also not shown the location of any of his proposed drill holes on any map accompanying his application.

The application lists the seven names of the partners; however, the Mine Option and Purchase Agreement dated January 13, 1956 indicates that Urgel Bell and Carl Brady are Limited Partners.

One copy of the application is being forwarded to the Grand Junction Office, DMEA, for their review, appraisal, and recommendations concerning the advisability of making a field examination on the property, and one copy is being retained in our file.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Enclosures

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AUG 30 1956

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

August 28, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: J. W. Hasler

From: Field Team, Region III

Subject: Application for DMEA Aid (Uranium) Helicopter Exploration Company (Little Joe claims) Coconino County, Arizona

Enclosed is the subject application in the amount of $25,000.00.

Please discuss this application with the Bureau of Mines representative in the Grand Junction office and the AEC and forward this office nine copies of your recommendations concerning the advisability of making a field examination.

DMEA Field Team, Region III

W. M. TRAVER,

By W. M. Traver
Executive Officer

Enclosures

HMC:ab

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

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

August 28, 1956

224 New Customhouse
Denver 2, Colorado

Mr. Carl Brady
304 North 26th Avenue
Yakima, Washington

Re: Application for DMEA Aid (Uranium) Helicopter Exploration Company (Little Joe claims) Coconino County, Arizona

Dear Mr. Brady:

This will acknowledge receipt of your application for DMEA aid in the exploration of the Little Joe claims.

Your application is being forwarded to the Washington Office, DMEA, and they will advise you if additional information is required.

Very truly yours,

W. M. TRAVER,

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

HMC:ab

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

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DMEA
Date Rec'd. AUG 27 1956
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. 4445
Metal or Mineral Uranium
Date Received 8-30-56
Estimated Cost $25,000.00
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: Helicopter Exploration Company 304 N. 26th. Ave. Yakima, Washington

A partnership, names and addresses attached

(*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 Section 33 Township 40 North, Range 7 East. Coconino County, Marble Canyon, Arizona

(*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, Contract attached

(*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.

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16—66551-1

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 ..... days and be completed within ..... months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

[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 Aug 25, 1956

Helicopter Exploration Company
(Applicant)

By Carl Brady, partner

Carl F. Brady

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

Helicopter Exploration Company 304 N. 26th. Ave. Yakima, Washington

MF-103

1

(a) Names of partners; Joe Seaman 2108 W. Washington Ave. Yakima, Wash.
Donald Larson 228 N. 34th Ave. Yakima, Wash.
Urgel Bell La Crosse, Wash.
David Crollard 5th Ave. Wenatchee, Wash.
Dr. H.M. Korach Larson Bldg. Yakima, Wash.
Marley Orchards, Inc. Tieton, Wash.
Carl Brady 304 N. 26th. Ave. Yakima, Wash.

3

(a) Legal description of land we wish to explore and on which we have a lease is described in detail along with drawings of the claims by the Arizona Engineering Co. These descriptions and drawings are enclosed.

(b) None.

(c) Lessee, copy of lease attached

(d) Enclosed.

(e) See attached lease.

(f) Little Joe Claims, Nos. 1 through 24 recorded in Book 83, O. R., pages 281-304, Coconino County, Arizona, and covering the greater portion of Section 33, Township 40 North, Range 7 East.

4

(a) Little exploration other than some wagon-drilling, and no mining has been done on this property. The property is accessible by Jeep road approximately 8 miles from highway.

(b) No production.

(c) The stratigraphy in the Marble Canyon area is very similar to other portions of the Colorado Plateau that produces uranium from the Triassic sequences of sediments. Monument Valley and Cameron, in Arizona: White Canyon, Circle Cliff, San Rafael Swell, and Big Indian Wash in Utah, all have the same general sequences of sediments as the Little Joe claims. The greatest amount of production in the Triassic sediments comes from the Shinarump conglomerate, or it's equivalent, the Chinele formation producing a secondary amount. This area is structurally similiar to the aforementioned areas. The Little Joe claims are located on the Northwestern flank of a large doubly plunging anticlines.

As the enclosed sketches willshow, along with the accompanying structural map of this group, three definite channeling features can be seen. They range in size from thirty feet deep and one-hundred feet wide to sixty feet deep and approximately two-thousand feet wide. The surface exposures of these channels are typical of other channel outcrops on the Colorado Plateau.

FILE COPY

Helicopter Exploration Company 30, N. 26th. Ave. Yakima, Washington

EE-103

(c)continued
There is evidence of copper, uranium, carbon, iron, gypsum, calcite and silica and there is evidence of good lithology, such as coarse grained, poorly sorted sandstone and conglomerates with inter-fingering mudstones. The uranium mineralization is in the form of the secondary minerals, probably the silicates such as, sklodowskite, uranophilite, and johannite. These minerals are more easily formed by the weathering of the primary minerals. The copper mineralization is also found in the form of the secondaries, such as azurite and malachite. This is probably due to the weathering of the sulfides of copper. Copper can be found throughout the Shinarump with concentrations usually in the channels. The cementing materials are usually iron, silica, gypsum and calcite. Several good alteration zones can be seen, they are in the Moenkopi formation below the center of the channel and extend outward along the flanks. This alteration of the Moenkopi formation from red to gray could have been caused by the migration of reduction through the more permeable Shinarump conglomerates.
Since the preliminary structural work has been completed on this group of claims, it is necessary to instigate a drilling program to complete the development of the property. This drilling would be based entirely upon structural control of the Shinarump. The most favorable method is to drill the linear extent of the channels to find their definite size and shape. Thus, a large portion of the drilling required by the grid type method is eliminated. Since more than 90% of the ore bodies found in the Shinarump conglomerate is found in these channeling features, it is possible to eliminate large areas without the necessity of drilling.
The Little Joe claims are located in Marble Canyon, Coconino County, Ariz., which is 125 miles North of Flagstaff or 80 miles East of Kanab, Utah, on U.S. highway 89, a two-lane paved road connecting these two towns and passes through Marble Canyon at Navajo Bridge. A county road, called the Lee's Ferry road, begins at Navajo Bridge and passes within mile of the McCary-Deacom properties, which are two miles to the north of the bridge. A road built by the McCary-Deacom Co. connects with the Lee's Ferry road and the Little Joe claims are accessible by this road via Jeep. They also can be reached by another Jeep road which is located miles north of Marble Canyon Lodge.
The structural map and the geologic description of this property was obtained from Phillip H. McCary Jr., partner in the McCary-Deacom Co.

(d)Although the Little Joe claims are within one mile of U.S. highway 89, they may be reached only as described above. Residence is available at Marble Canyon. The nearest ore-buying station is at Cameron, approximately 70 miles from Marble Canyon

(e)Man-power, materials and supplies are available in Flagstaff. Water and power are available in Marble Canyon.

5

(a) Uranium, copper and any other valuable minerals.

FILE COPY

MF-103

5 continued

(b) Our proposal is to drill the linear extent of the channels of the Shinerump. Then drill cross-sections in accordance with good exploration practices for possible existing bodies of ore. There is approximately from 15 feet to 100 feet of overlying Chinle above the Shinerump formation and at the Shinerump outcrop it is 60 feet thick. If it is consistent in it's depth, none of the holes would have to be drilled deeper than 175 feet.

(d) Helicopter Exploration Co. has no mining background. We have been in the exploration business for 3 years. When we have found interesting property, such as the Little Joe claims, we have hired consulting geologists. Mr. Phillip McCary has advised us on this project and we intend to use him on any further exploration of these properties. He has been a geologist for more than 8 years, devoting all of that time to searching for and developing uranium properties. He was with the A. E. C. for three years, working out of the Grand Junction office. His address is c/o McCary-Deaco Co., 2155 East 7th St., Los Angeles 23, California.

6

(a) It is our intention to contract the drilling, which we believe would be the most economical method. We have asked for bids for this work and we believe that we can get this done for $1.75 per foot. The bull-dozer work can be arranged for easily in this area for $12 an hour, or less. As mentioned before, Mr. Phillip McCary, or one of his associates, along with myself of one of my partners would supervise the operation.

Independent contracts-

Estimates:	Cost of drilling.....	$15,000
	Consulting fees.....	5,000
	Bull-dozing.....	5,000
	Total.....	$25,000

(b) Since our plan is to contract all the work except supervision, the costs of which is included above, there will be no additional charges as we plan to do our own supervising at no charge and furnish our own transportation.

(c) The estimated cost under item "a" includes the materials and supplies to be furnished by the contractors.

(d) The operating equipment will be furnished by the contractors as listed under item "a".

(e) It is our opinion that no buildings or installations will be necessary in the exploration of this property, due to the easy accessibility from Marble Canyon.

(f) None.

FILE COPY

NF-103

6 continued

(g) The costs of maintenance and repairs of operating equipment will be the responsibility of the contractor as well as the obligations to his employees, such as Workmen's compensation, employer's liability insurance and pay-roll taxes. We will do our own accounting at no expense.

(h) In our opinion no more than a 10% contingency is necessary.

7

(a) Yes.

(b) Cash.

Summation:
This is the first time our company has applied for a D.M.E.A. loan and we realise that some of the information you may want is either incomplete or not available at this time. We would like you to understand that we are sincere in our desire to continue the exploration of this property as soon as possible. Therefore, if any other information, or more detailed information is necessary, please inform us.

Our understanding of this application is that this loan we are requesting is to be used in exploring for uranium, and if we are fortunate enough to make a good discovery we realise that much more capital would then be needed to develope a mine.

I or one of my partners will be available at your convenience to accompany your representatives on their inspection of the property. We hope that your office will take a favorable position in regard to this application.

Sincerely yours,

Helicopter Exploration Company
Carl Brady, partner

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H. K. MANGUM
Attorney at Law
122 North San Francisco Street
Post Office Box 961
Flagstaff, Arizona

Laurence T. Wren
Associate

July 13, 1956

Mr. Joseph Scaman
Attorney at Law
Beett Hotel
Cashmere, Washington

Dear Mr. Scaman:

Please be advised that I have had occasion to review the search of the Official Records of this County as made by Land Title and Trust Company, with respect to the Little Joe Claims Nos. 1 through 24, recorded in Book 83, O. R., pages 281 - 304, Coconino County, Arizona, and covering the greater portion of Section 33, Township 40 North, Range 7 East.

As appears from the reports furnished by Land Title and Trust Company, there are outstanding potential conflicts by reason of both prior and subsequent locations made on this section. However, based upon the information furnished to me with respect to the nature of the location work done by the prior locators, and particularly in view of the fact that the continuing locations of the Irving group, namely: The filing of relocations every ninety days in another name would indicate an admission by such locators of their failure to do the necessary work, which confirms the verbal opinion furnished by eye witnesses, I am of the opinion that J. O. Baker, as locator of the above described claims has made a valid entry on the public domain and that said claims are valid and subsisting in view of the affidavit furnished by the said J. O. Baker, with respect to the location work accomplished under the location notices, and I am of the further opinion that said locations can be sucessfully defended in the event of any attempt of the other locators to contest the Baker locations.

At the time of the locations of the Little Joe claims, the area involved was public domain and open to mineral entry in accordance with the laws of the State of Arizona and of the United States.

Very truly yours,

/s/ H. K. Mangum
H. K. Mangum

HKM:h

COPY

COPY

MINE OPTION AND PURCHASE AGREEMENT

DATE: January 13, 1956

OPTIONOR: J. O. Baker

OPTIONEE: Helicopter Exploration Company, a co-partnership

PLACE: Marble Canyon, Arizona

RECITALS:

1. The optionor is the locator of certain unpatented mining claims designated Little Joe Claims, constituting twenty-four (24) in number, and recorded in Book 83, pages 281 through 304, Official Records of Coconino County, Arizona; and in addition there to proposes to locate in an area adjacent to said claims six additional mining claims to be designated Copper King.

2. The optionor has heretofore, on the 16th day of December, 1955, entered into an option agreement with one Urgel Bell, President of optionee company, for the purchase of the Little Joe mining claims, and in addition thereto, as one of the locators of eight (8) B & H claims, entered into a companion agreement for the purchase of said mining claims.

3. That the consideration for the foregoing options on the Little Joe and B & H claims was the sum of Two Thousand Five Hundred and no/100 ($2,500.00) Dollars, payment of which is acknowledged by the within optionor.

4. The optionee is the beneficiary under the aforesaid option agreements, having actually made the option payments therein provided and is desirous of dropping the option on the B & H claims and taking an option on the Little Joe claims and the proposed Mamou claims, on a basis of modification from the original option and purchase agreement.

5. The optionor is willing to release the optionee from the option and purchase agreement covering the H & H Claims and to modify the option and purchase agreement on the Little Joe claims.

COVENANTS:

1. It is agreed that the entire consideration of Two Thousand Five Hundred and no/100 ($2500.00) Dollars, paid on the Little Joe and B & H claim agreements be applied to and constitute the consideration for the within option and purchase agreement and receipt by the optioner of said

sum is acknowledged.

2. In consideration thereof, the optionor grants to the optionee an irrevocable option for a period of eighteen (18) months from the date of this agreement to purchase the Little Joe claims for the sum of Seven Hundred and no/100 ($700.00) Dollars per claim, or a total of Sixteen Thousand Eight Hundred ($16,000.00) Dollars, with the option price to be applied to the purchase price in the event of the exercise of the purchase option by the optionee. The same price shall apply to the thirty-two (32) Mamou claims, namely: Seven Hundred and no/100 ($700.00) Dollars per claim, with the two groups considered divisible under this contract, provided that optionee may take one or more of said Mamou claims at the purchase price stated.

3. During the period of the option herein provided, the optionor agrees to keep the Little Joe claims and the Mamou claims to be located, in good standing, doing any necessary location work to properly complete his locations and do all necessary assessment work on said claims at his sole expense.

4. The optionee agrees, during the option period to enter upon said claims and explore the same for the location of any potential ore bodies thereon, said work to be done at its sole expense and in the doing of any such work, it agrees to employ the optionor to perform any work he is capable of performing with machinery owned or held by him, so long as his prices therefor are competitive to similar contractors in the area and his performance of such work remains satisfactory to the optionor.

5. The optionor grants to the optionee during the period of this option the free right of access to and from said unpatented mining claims and further grants to the optionee the right to remove from any of said claims necessary sampling ores, to the end that the commercial value of such ores determined by commercial production from any of said claims shall not commence until the exercise by the optionee of the purchase option as herein provided.

6. In the event the optionee determines to purchase said mining claims, such purchase option may be exercised at any time during the duration of the option period, by payment in full in lawful money of the United States of America, of the remaining purchase price as hereinabove set out. Whereupon, the optionor agrees to convey to the optionee by quit-claim deed all his right, title, and interest in and to said unpatented mining claims, reserving only to the optionor a five (5) per cent royalty interest in all minerals produced from said mining claims, said royalty to include any production bonuses paid by any agency of the United States Government, but to exclude any transportation allowance paid for transportation of such ores.

7. The optionor agrees to forthwith secure a survey by competent engineers of said mining claims and to pay for such survey, with the cost thereof to be deducted from any final purchase paid, in the event of the exercise of the purchase option.

8. This agreement is contingent upon the ablility of the optionor to deliver title to said unpatented mining claims and is contingent upon a certificate of title being issued by Land Title and Trust Company, showing ownership of said claims to be vested in the optionor as unpatented mining claims, free of any conflicts with other locators, insofar as the record evidence in the Coconino County Recorder's Office is concerned.

9. In the event of the exercise of the purchase option, the optionee or his assigns agree to thereafter perform all necessary assessment work to keep said claims in good standing until all merchantable ore be removed therefrom, and do agree to exercise reasonable efforts in connection with the exploration of said claims and to proceed with reasonable diligence to mine the same, in accordance with accepted mining practices in the area, in the event of the purchase option.

10. This agreement shall be binding upon and inure to the benefit of the respective heirs, administrators, successors, and assigns of the respective parties hereto; it being specifically understood that the optionee is presently a limited partnership and proposes to shortly incorporate, with the successor company to have the full benefit of the rights of presently named optionee hereunder.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals this 13th day of January, 1956.

/s/ J. O. BAKER
J. O. Baker
Optionor

HELICOPTER EXPLORATION COMPANY,
a co-partnership

By /s/ URGEL BELL
Urgel Bell
Limited Partner

/s/ CARL BRADY
Carl Brady
Limited Partner
OPTIONEE

C O P Y

C O P Y

ARIZONA ENGINEERING CO.

Complete Engineering Service

C. W. Dryden, Registered Civil Engineer
P. O. Box 999
Flagstaff, Arizona
Telephones: Office 573 - Residence 474
Masonic Building

January 28, 1956

Mr. Carl F. Brady
304 North 26th Avenue,
Yakima, Washington

Dear Mr. Brady:

Enclosed are three copies of the plat and the descriptions of the Little Joe Mining Claims, more will be supplied if needed. We have delivered to your attorney, Mr. H. K. Mangum, a like number of copies together with our check No. 3262 in the amount of $86.44.

As you can see from the plat, we staked all of the Shinarump in Section 33. Mr. McCary advised me over the telephone that they had staked all of this formation in Section 28. He also assured me that he would assist the Bakers in erecting the necessary monuments. We set large spikes with guard stakes and lath at all of the corners and furnished Gene Baker with a sketch of the claim lay-out, so that they could find our points.

We are very glad to have had this opportunity to be of service and hope that we will be favored with more of your work in the near future.

Yours sincerely,

/s/ C. W. DRYDEN
C. W. Dryden
Registered Professional Engineer

CWD/erg

COPY

ARIZONA ENGINEERING CO.
Complete Engineering Service

C. W. Dryden, Registered Civil Engineer
P. O. Box 999
Flagstaff, Arizona
Telephones: Office 573 - Residence 474
Masonic Building
January 27, 1956

DESCRIPTION OF LITTLE JOE MINING CLAIMS:

CLAIM NO. 1

Beginning at Corner No. 1, which bears N57°15'47" E a distance of 712.9 feet from the SW corner of Sec. 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence west a distance of 300 feet to a point;
run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 2;

Beginning at Corner No. 1, which bears South a distance of 755 feet from the West 1/4 Corner of Sec 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1500 feet to the point of beginning.

CLAIM No. 3;

Beginning at Corner No. 1 which bears North a distance of 745 feet from the West 1/4 Corner of Sec. 33, T40N, R7E, Gila and Salt River base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 4;

Beginning at Corner No. 1, which bears South a distance of 400 feet from the NW Corner of Sec. 33, T40N, R7E Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 400 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 400 feet to the point of beginning.

CLAIM NO. 5;

Beginning at Corner No. 1, which bears South a distance of 400 feet and East a distance of 600 feet from the NW Corner of Section 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 400 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
runce thence South a distance of 400 feet to the point of beginning.

CLAIM NO. 6;

Beginning at Corner No. 1, which bears North a distance of 745 feet and East a distance of 600 feet from the W1/4 Corner of Sec.33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 7;

Beginning at Corner No. 1, which bears South a distance of 755 feet and East a distance of 600 feet from the W 1/4 Corner of Section 33, Township 40 North, Range 7 East, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 8:

Beginning at Corner No. 1 which bears N57°15'47" E a distance of 712.9 feet and East 600 feet from the SW Corner of Sec. 33, T40N, R7E, G. & S. R. B. & M., Coconino County, Arizona; run thence East a distance of 300 feet to a point; run thence East a distance of 300 feet to a point; run thence North a distance of 1500 feet to a point; run thence West a distance of 300 feet to a point; run thence West a distance of 300 feet to a point; run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 9;

Beginning at Corner No. 1, which bears South a distance of 755 feet and East a distance of 1200 feet from the West 1/4 Corner of Sec. 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 10;

Beginning at Corner No. 1, which bears North a distance of 745 feet and East a distance of 1200 feet from the W 1/4 Corner of Sec. 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 11;

Beginning at a point which bears South a distance of 400 feet and East a distance of 1200 feet from the NW Corner of Section 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 400 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 400 feet to the point of beginning.

CLAIM NO. 12;

Beginning at Corner No. 1, which bears South a distance of 400 feet and East a distance of 1800 feet from the NW Corner of Section 33, Township 40 North, Range 7 East, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 400 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 400 feet to the point of beginning.

CLAIM NO. 13;

Beginning at Corner No. 1, which bears South a distance of 400 feet and East a distance of 1800 feet from the NW Corner of Sec. 33, Township 40 North, Range 7 East, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence South a distance of 1500 feet to a point;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to the point of beginning.

CLAIM NO. 14;

Beginning at Corner No. 1 which bears North a distance of 745 feet and East a distance of 1800 feet from the W 1/4 Corner of Section 33, Township 40 North, Range 7 East, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence South a distance of 1500 feet to a point;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to the point of beginning.

CLAIM NO. 15;

Beginning at Corner No. 1, which bears N57°15'47"E a distance of 712.9 feet and East a distance of 1200 feet from the SW Corner of Sec. 33, Township 40 North, Range 7 East, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 16;

Beginning at Corner No. 1, which bears N42°51'30"E a distance of 528.60 feet from the South 1/4 Corner of Sec. 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 17;

Beginning at Corner No. 1, which bears N42°51'30"E a distance of 528.60 feet and North a distance of 1500 feet from the South 1/4 Corner of Section 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1500 feet to a point;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to the point of beginning.

CLAIM NO. 18;

Beginning at Corner No. 1, which bears West a distance of 240 feet and South a distance of 400 feet from the N1/4 Corner of Sec. 33, Township 40 North, Range 7 East, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence South a distance of 1500 feet to a point;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to the point of beginning.

CLAIM NO. 19;

Beginning at Corner No. 1, which bears West a distance of 240 feet from the N 1/4 Corner of Section 33, T40 N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence South a distance of 400 feet to a point;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 400 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West to a distance of 300 feet to the point of beginning.

CLAIM NO. 20;

Beginning at Corner No. 1, which bears East a distance of 360 feet from the N 1/4 Corner of Section 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence South a distance of 400 feet to a point;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 400 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to the point of beginning.

CLAIM NO. 21;

Beginning at Corner No. 1, which bears East a distance of 360 feet and South a distance of 400 feet from the N 1/4 Corner of Sec. 33, Township 40 North, Range 7 East, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence South a distance of 1500 feet to a point;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to the point of beginning.

CLAIM NO. 22;

Beginning at Corner No. 1, which bears N42°51'30"E a distance of 528.60 feet and North a distance of 1500 feet from the S 1/4 Corner of Sec. 33, Township 40 North, Range 7 East, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
Run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 23;

Beginning at Corner No. 1, which bears N42°51'30"E a distance of 528.60 feet from the S 1/4 Corner of Sec. 33, T40N, R7E Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1500 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1500 feet to the point of beginning.

CLAIM NO. 24;

Beginning at Corner No. 1, which bears N42°51'30"E a distance of 528.60 and East a distance of 600 feet and North a distance of 1115 feet from the S 1/4 Corner of Sec. 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thnce East a distance of 300 feet to a point;
run thence East a distance of 300 feet to a point;
run thence North a distance of 1400 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1400 feet to the point of beginning.

CLAIM NO. 25;

Beginning at Corner No. 1, which bears South 0°02' East a distance of 1135 feet and West a distance of 480 feet from the East 1/4 Corner of Sec. 33, Township 40 North, Range 7 East, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence North a distance of 1400 feet to a point;
run thence West a distance of 300 feet to a point;
run thence West a distance of 300 feet to a point;
run thence South a distance of 1400 feet to a point;
run thence East a distance of 300 feet to a point;
run thence East a distance of 300 feet to the point of beginning.

CLAIM NO. 26;

Beginning at Corner No. 1, which bears N0°02'W a distance of 265 feet from the E 1/4 Corner of Sec. 33, T40N, R7E, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence West a distance of 240 feet to a point;
run thence West a distance of 240 feet to a point;
run thence South a distance of 1400 feet to a point;
run thence East a distance of 240 feet to a point;
run thence East a distance of 250 feet to a point;
run thence North a distance of 1400 feet to the point of beginning.

CLAIM NO. 27;

Beginning at Corner No. 1, which bears East a distance of 960 feet and South a distance of 400 feet from the N 1/4 Corner of Section 33, Township 40 North, Range 7 East, Gila and Salt River Base and Meridian, Coconino County, Arizona;
run thence South a distance of 1200 feet to a point;
run thence East a distance of 145.5 feet to a point;
run thence East a distance of 145.5 feet to a point;
run thence North a distance of 1200 feet to a point;
run thence West a distance of 145.5 feet to a point;
run thence West a distance of 145.5 feet to the point of beginning.

Sec. Op. Comm.

CLASS OF SERVICE
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WESTERN UNION
TELEGRAM

W. P. MARSHALL, PRESIDENT

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

1201

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at destination

(39).

KB254 PRA095

DMEA
DEPARTMENT OF THE INTERIOR
FEB 12 1957 AM 10 50
DIVISION OF
RECEIVED

Docket # 4445

PR YKA031 PD=YAKIMA WASH 12 937AMP=

W M TRAVER=

224 NEW CUSTOM HOUSE BLDG DVR=

WE HAVE RECEIVED QUIT CLAIM DEED FROM THE ADVERSE CLAIMANTS AND WARRANTY DEED FROM THE ORIGINAL STAKERS OF THE LITTLE JOE CLAIMS MARBLE CANYON ARIZONA WE NOW HAVE CLEAR TITLE=

CARL BRADY HELICOPTER EXPLORATION CO 304 NORTH 26 AVE YAKIMA=

DMEA
DEPARTMENT OF THE INTERIOR

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 15 1957

DATE	INITIALS	CODE
2/18	C	220
		225

DMEA Form 7
(12-56)

700

OFFICIAL FILE COPY

Date	Surname	Code
2-7	Chiang	700
2-7	Ellis	700
2/8	Selbridge	130
"	Johnson	170
"	Rutherford	100
2/12		220

FEB 8 1957

Mr. Carl F. Brady, Partner
Helicopter Exploration Company
304 N. 26th Avenue
Yakima, Washington

Re: Docket No. DMEA-4445 (Uranium & copper)
Little Joe Claims
Coconino County, Arizona

Dear Mr. Brady:

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 indicates to us that the probability of disclosing significant 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 Exploration Program and for bringing your property to our attention.

Sincerely yours,

C. O. Mitchell

Administrator

McKing
~~[illegible]~~/izm 2-7-57
cc to: Code 700
Mr. Murphy
Admr.'s Reading File
Operating Committee
DMEA FT Reg. 3 (2)
Messrs. THKiilsgaard, 5224
AEC - JKratchman

8623

Docket
700

Ching
Ells

February 7, 1957

Summary of Proposed Project

Object: Denial of application for an exploration project.

Docket No.: DMEA-4445

Commodity: Uranium & Copper

Applicant: Helicopter Exploration Company, a partnership
304 N. 26th Ave.
Yakima, Washington

Property: Little Joe claims Nos. 1 through 27, covering the greater portion of sec. 33, T. 40 N., R. 7 E., G. & S.R.B. & M., Coconino County, Arizona. Applicant holds an option to purchase the property, good until July 13, 1957.

Date of Application: August 25, 1956

Amo\unt of Application: $25,000.00

Work Proposed: Drill along the lengths of inferred Shinarump channels, then drill across the channels in accordance with good exploration practice. No concrete drilling plan with hole locations presented. Cost estimated as follows:

Drilling (footage unspecified)	$15,000.00	
Consulting fees	5,000.00	
Bulldozing	5,000.00	
Total		$25,000.00
Government Participation @ 75%		$18,750.00

Field Team Report: January, 1957: M.H. Salsbury, USBM & D.P. Elston, USGS:

The potential ore-bearing sandstone in the general area is the Shinarump member of the Chinle formation of Triassic age. On the subject property the Shinarump forms a bench and ranges from 30 to 113 feet thick. Channels are present where the sandstone fills scours in underlying Moenkopi formation. Large channels on the property are not favorable sites for ore deposition because they are relatively free of mudstone seams and layers which act as traps.

Three uranium ore deposits are known in the general area of the subject property. The nearest is the El Pequito, about 2½ miles to the northeast, which produced 38 tons of 0.18% U_3O_8 ore, and has estimated reserves of 362 tons.

The second deposit, on the Big Blue claim, is about 5 miles to the southwest. It produced 38 tons of ore averaging 0.27% U_3O_8, and has estimated reserves of 160 tons. It lies in the Chinle above the Shinarump member.

The third deposit is the Sun Valley mine, about 10 miles to the southwest. It produced 370 tons of ore averaging 0.28% U_3O_8, and has estimated reserves of 1,268 tons.

The El Pequito and Sun Valley deposits lie in small Shinarump channels containing relatively more mudstone seams and layers than the larger channels on the Little Joe claims. It is possible that small deposits might be found in subsidiary channels on the subject property, but they would not be of significant size.

A DMEA project was approved under Docket No. DMEA-3612 on the Marble Canyon Uranium, Inc., property, 8 miles to the northeast. Thirteen out of 20 authorized holes were completed with negative results. Termination of the contract has been recommended.

An application under Docket No. DMEA-3532, covering a property a short distance to the north, was withdrawn after a field examination was made. A subsequent private drilling program was generally negative in results. Applications under Docket Nos. 4289 and 3867, in this general area, were denied.

Since the known ore bodies in the area are few and small and are generally found in small channels, the chances of finding significant deposits in the large channels on the subject property are poor. It is recommended that the application be denied.

Commodity Group Comments:

USBM, John E. Crawford, January 31, 1957:

Agrees with the Field Team and advises denial of the application.

USGS, W. P. Williams, February 4, 1957:

The property does not appear well qualified for DMEA expenditures. Agrees with the recommendations for denial of the application.

Rare & Miscellaneous Metals Div., Michael Ching, February 6, 1957:

The history of this area and the geological conditions on the subject property do not encourage the belief that significant ore deposits may be found.

Conclusions and Recommendations:

The chances of making a worthwhile discovery on the subject property are poor. It is recommended that the application be denied.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

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

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IN REPLY REFER TO:
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	Comments Complete	

February 4, 1957

Memorandum

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

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

Subject: Review of field examination report, DMEA 4445, Helicopter Exploration Company, Little Joe claims, Coconino County, Arizona, (uranium).

The examining team report that the applicant's property is unfavorable, geologically, for the presence of significant ore deposits. Small deposits are known in the area in small Shinarump channels. The large channels do not have favorable sand grain size and texture for localizing ore. The small channels would constitute difficult drilling targets.

The area has a poor production history. Only about 350 tons of ore have been mined from the general vicinity of the claims.

The applicant's property does not appear well qualified for DMEA expenditures; and I agree with the recommendations for denial of the application.

W. P. Williams

W. P. Williams

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	J	

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

Date January 31, 1957

DMEA Docket No. 4445
DMEA Contract No.
Commodity Uranium
Name of applicant Helicopter Exploration Co.
Name of property Little Joe Group of Claims
Location of property Coconino Co., Arizona
Estimated cost of project $25,000

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee
From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Field Team Report
(Field Trip, Mill Test Report, etc.)

1. Date of inspection or test: 1/57. 2. Date received by reviewer: 1/28/57

3. Is report on this property known to reviewer: Yes ☐ No ☐

4. Is report on nearby properties known to reviewer: Yes ☐ No ☐

5. Information available on past production: Yes ☐ No ☐

6. Other pertinent factors known to reviewer: Yes ☐ No ☐

7. Explain items marked yes above:

8. Factors meriting special consideration:
- a. Location ☐
- b. Ownership ☐
- c. Evidence of mineralization ☐
- d. Geology ☐
- e. Proposed exploration method ☐
- f. Alternate exploration method ☐
- g. Costs ☐
- h. _____ ☐

9. Action advised:
- a. Obtain information from applicant ☐
- b. Refer to Field Team ☐
- c. Denial ☒
- d. Agree with Field Team ☒
  - i. Consult with Mr. _____ at _____ ARC office.
- e. Discuss with Field Team ☐
- f. Support alternate plan ☐
- g. Request another consultation ☐
- h. Approval ☐

10. Remarks: (Use back of page if necessary)

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

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224 New Customhouse
Denver 2, Colorado

January 21, 1957

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Joint Report of Examination Docket DMEA 4445 (Uranium) Helicopter Exploration Company (Little Joe Group of claims) Coconino County, Arizona.

Enclosed are four copies of a joint engineering and geologic report of examination on the subject property.

The examiners concur that there is little possibility of finding a significant amount of uranium on this property. They recommend that the application be denied. We concur in this recommendation.

DMEA Field Team, Region III

By W. M. Traver
Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
1-28-57
(date)

MINERAL DEPOSITS
IN REPLY REFER TO:
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JAN 17 1957
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

DMEA
DEPARTMENT OF THE INTERIOR
JAN 18 1957
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 360
Grand Junction, Colorado

TRANSMITTED
JAN 21 1957

Memorandum

January 16, 1957

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman
J. F. Shaw

From: F. M. Byers, Jr.,

Subject: Transmittal of joint geological and engineering report. DMEA 4445 (Uranium), Helicopter Exploration Company, Little Joe group of claims, Coconino County, Arizona

The Helicopter Exploration Company, 304 N. 26th Avenue, Yakima, Washington, has applied for DMEA assistance to explore their Little Joe claims near Navajo Bridge, Coconino County, Arizona.

The property was examined on November 20, 1956, by M. H. Salsbury of the U. S. Bureau of Mines, and D. P. Elston of the U. S. Geological Survey. The company proposed drilling an unspecified amount of drill holes at an estimated total cost of $25,000, with Government participation at $18,750.

The claims are staked on a bench formed by the Shinarump member of upper Triassic age. The Shinarump ranges from 30 to 113 feet in thickness, and, although no ore deposits have been found in larger channels northeast of the claim, there is reported wide-spread, weakly mineralized ground in at least one of the large channels. Exploration of a similar large Shinarump channel on the Jasper group (DMEA 3867) some 10 miles to the southwest was denied after a field examination.

In view of the fact that the known ore bodies in the area are in small channels and that large channels in the area are not known to contain ore deposits, the examining team concludes that DMEA assistance for drilling on the Little Jo claims should be denied. I concur with the recommendations of the examining team. The Atomic Energy Commission was consulted in connection with this application.

Enclosed are 12 copies of the report, complete with figures 1 and 2. Also enclosed is the applicant's brochure.

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F. M. Byers, Jr.
For J. William Hasler,
Geologist

FMB/mlr
Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
1-28-57
(date)

FOR UNITED STATES GOVERNMENT USE ONLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED

JAN 21 1957

DMEA 4445

HELICOPTER EXPLORATION COMPANY

LITTLE JOE GROUP OF CLAIMS

Coconino County, Arizona

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Uranium

Joint Geological and Engineering Report

By

M. H. Salsbury, Mining Engineer
Bureau of Mines

D. P. Elston, Geologist
Geological Survey

January, 1957

Reviewed by
DMEA OPERATING COMMITTEE
1-28-57

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ILLUSTRATIONS

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2 Geologic Map of Little Joe Claims, Helicopter Exploration Company, Lees Ferry area, Coconino County, Arizona

DMEA 4445
Helicopter Exploration Company
Little Joe Group of Claims
Coconino County, Arizona

INTRODUCTION AND SUMMARY

The Helicopter Exploration Company, 304 N. 26th Avenue, Yakima, Washington, applied for DMEA assistance for exploration on the Little Joe Nos. 1 - 27 claims, Sec. 33, T. 40 N., R. 7 E., Gila and Salt River Base and Meridian, Coconino County, Arizona on August 27, 1956. The application was referred to the field and an examination of the property was made on November 20, 1956. The DMEA examining team was accompanied by Mr. Carl Brady, a partner in the company, and by Messrs. Phillip H. McCary and E. C. Hutchinson, consulting geologists retained by the applicant.

A program of exploration consisting of an unspecified amount of drilling at an estimated cost of $25,000.00 is proposed by the applicant. Government participation at 75 percent would be $18,750.00.

The proposed exploration area is on a high bench which overlooks Marble Canyon and the Navajo Bridge over the Colorado River. The claims are staked on the Moenkopi and Chinle formations of Triassic age. The Shinarump member, which is the basal member of the Chinle formation, forms the bench and is the "ore-bearing sandstone" in the area. It consists of fine- to coarse-grained sandstone, conglomeratic sandstone, and minor interbedded mudstone. Its thickness on the claims ranges from about 30 to 113 feet. The Shinarump member unconformably overlies the early and middle Triassic Moenkopi formation.

In the general area there are two known uranium ore deposits in the Shinarump member. The nearest is 3½ miles to the northeast while the other is about 10 miles southwest of the subject property. Both deposits are localized in

small, shallow scours which are about 15 feet deep. Production and reserves are small, totaling less than 500 tons each. No ore deposits have been found in the larger channels northeast of the claims although there is reported widespread weakly mineralized ground in at least one of the large channels.

There is no evidence for a significant occurrence of mineralized rock on the claims, but the lower part of the Shinarump member and its lower contact are inaccessible except in the southwestern part of the claims.

A definite exploration plan was not presented in the application, but the applicant's geologist, Mr. McCary, outlined a program in the field which entails the evaluation of each hole as it is drilled. The data would be used to determine the location of each succeeding hole. The objective of this drilling, which would total about 8,500 feet, is to find structures favorable for ore. The penetration of ore by the drill would be fortuitous. If any structures, or channels are found that are believed to be favorable for ore, the applicant would then submit an application for exploration drilling to find ore in these structures.

In view that the known ore bodies in the general area are few and small, and that these are in small channels, and that large channels in the area do not contain ore deposits, it is believed that assistance by DMEA for prospect drilling on the Little Joe claims is not warranted. It is recommended that the applicant's request for Government assistance in exploration be denied.

ACKNOWLEDGEMENTS

The writers wish to acknowledge Mr. D. A. Phoenix, U. S. Geological Survey, for general geological information and for geologic map data of the area. Mr. P. H. McCary, a consulting geologist, supplied detailed data along the

northern part of the property and general geological information. The Atomic Energy Commission was consulted as to ore production of the area.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The property is in Sec. 33, T. 40 N., R. 7 E., Gila and Salt River Base and Meridian, Coconino County, Arizona (fig. 1). The claims are located on a broad bench which overlooks Marble Canyon and the Navajo Bridge over the Colorado River. On the northwest the topography rises with increasing steepness to a cliff which borders the Paria Plateau at an elevation of about 6,600 feet. The elevation of the claim area is about 4,000 feet, which is 400 feet above the floor of a wide valley, in which the Colorado River has incised Marble Canyon.

The climate of the area is generally arid, hot in summer and moderate in winter with violent storms of short duration at any season. Surface operations are feasible throughout the year.

Marble Canyon is 80 miles by paved highway from the Atomic Energy Commission buying station at Tuba City, Arizona and 166 miles from Flagstaff, Arizona, the nearest source of supplies.

The claims can be reached by 4-wheel drive vehicles over either of two poor, steep, access roads. The road distance is about 8 miles from paved U. S. Highway 89.

There are no unusual problems of accessibility, supply, power or labor. The cost of supplying water for wet drilling is high because of the very steep road from the valley, and dry drilling techniques are used as much as possible. Navajo Indian labor is available, and commercial contractors, who would be employed on the proposed project, would furnish necessary personnel and camp facilities.

HISTORY, PRODUCTION, AND PROPERTY OWNERSHIP

Exploration of the Marble Canyon area for uranium dates from 1952. Some reconnaissance has been carried on by the Atomic Energy Commission and the U. S. Geological Survey is mapping the geology of the area on a scale of 1/24000.

There have been several exploration projects and one DMEA project in the area. Work under docket No. DMEA 3612, contract Idm-E 816 was started in September, 1955 by Marble Canyon Uranium, Inc., on the Red Wing on the Red Wing claims 8 miles northeast of the applicant's claims. The geologist on this project was Mr. McCary. The objective was exploration of the "Hartley sandstone" of the Chinle formation. The operator also wanted to drill through the Shinarump member which is 200 feet deeper but this was not approved. Thirteen out of 20 authorized stage I holes were completed with negative results. The operator drilled several holes into the Shinarump member without Government assistance. These holes gave negative results also. Termination of the contract was requested and has been recommended by the Grand Junction office.

In December, 1955, an application was made under docket No. DMEA 3532 covering the northerly portion of the McCary-Beacom property which adjoins the applicant's claims on the north. The application was withdrawn after a field examination was made. Mr. McCary states that the applicant, the Universal Allied Uranium Corporation, afterwards carried on a drilling program with generally negative results. Some ore was penetrated by the drill on the El Piquito claim, but production and reserves are small.

Two other applications for assistance have been made in the area. Docket No. DMEA 4289, Consumers Agency, Inc., covered the Sam group of claims in Sec. 2, T. 39 N., R. 6 E., about 4 miles southwest of the Little Joe claims. Exploration drilling of the Petrified Forest member of the Chinle formation was proposed. The Shinarump member is not exposed and may be absent on this property. The application was denied. Docket No. DMEA 3867, La Salle Mining Company, covered the Jasper group in Section 21, T. 39 N., R. 6 E., five miles south of the Sam group. Exploration drilling of large blanket-like Shinarump sandstone and conglomerate of unfavorable character was proposed. This application was also denied. Mr. McCary stated that he is now preparing a DMEA application on the Mc Cary-Beacon El Pequito claims immediately north of the applicant's Little Joe claims and southwest of the El Pequito mine. Production from this deposit is small and reserves are estimated to be 362 tons.

There has been no production on the applicant's property. Three properties, which range from about $3\frac{1}{2}$ to 10 miles distant from the Little Joe claims have produced small tonnages. The following is production data through August, 1956 as shown by Atomic Energy Commission records:

CLAIM	LOCATION	DRY TONS	CONTENT % U_3O_8	CONTENT % V_2O_5
Sun Valley	Sec. 6, T. 38 N., R. 6 E.	270	0.28	0.02
Big Blue *	Sec. 2, T. 39 N., R. 6 E.	38	0.27	--
El Pequito	Sec. 28, T. 40 N., R. 7 E.	38	0.18	0.06

* Production from Petrified Forest member, Chinle formation (?)

The applicant company is a partnership consisting of seven individuals, residents of Yakima County, Washington. None have had previous exploration or mining experience. They are represented by Carl Brady of 304 N. 26th Avenue, Yakima, Washington, who serves as manager.

The applicant had an interest in adjoining property, the B and H (H and H ?) claims which they relinquished, and they also had agreed to purchase 32 additional claims, the Mamon group, which Mr. J. O. Baker was to stake. Only the Little Joe claims were included in the proposed DMEA project.

The Little Joe Nos. 1 through 24 were located on November 18, 1955 by J. O. Baker of Marble Canyon, Arizona. Later, three more claims, Little Joe Nos. 25, 26, and 27 were staked by the applicant on ground along the rim which wasnot covered by the original claims. The Little Joe Nos. 1 through 24 were assigned to the applicant under an option and purchase agreement dated January 13, 1956. Under the agreement the property is subject to a perpetual 5 percent royalty on all production, payable to J. O. Baker. No less than 4 other sets of claims have been located on the same ground. Starting in May, 1955, claim locations have been filed at three-month or six-month intervals with the claim descriptions and numbers being identical. The locators and claim names are different for each filing. Following are data from notices on one discovery monument examined in the field:

CLAIM NAME	LOCATORS	DATE
Davy No. 22	Ralph McKee and R. M. Fowler	May 3, 1955
Joe Ann No. 16	Kampe Wolke	Oct. 31, 1955
Basic No. 16	Thomas C. Smith	Jan. 30, 1956
Amps No. 16	E. J. Gardiner	May 15, 1956

All of these claims had identical boundary descriptions. Although they appear to have been located by different individuals, the applicant states that the locations were made for one person or persons for the purpose of holding the ground without doing any work. A location notice for the applicant's Little Joe claim No. 18 was found on the ground near the discovery monument. It apparently had been removed and discarded. It seems obvious that the successive locations made at intervals by different locators, using the same boundary

descriptions but new claim names, have probably not been made in good faith. The applicant has furnished a copy of a title opinion by H. K. Magnum, an attorney of Flagstaff, Arizona, which states that J. O. Baker's locations are the only valid ones. Baker appears to have been the only locator who attempted to do any development work. He drilled a few shallow wagon drill holes and also constructed access roads.

So far as the DMEA examiners were able to determine in the field, J. O. Baker's locations constitute the only valid discoveries. There might, however, be litigation, if the claims ever proved to be of value. In view of the probable recommendation for a denial on the project, further investigation was not undertaken.

PRESENT STATUS

Exploration and Development

Exploration to date on the claims has consisted of building access roads, and drilling an unknown number of wagon-drill holes. No record of the holes is available. The applicant states that none of the holes were over 20 feet deep, the potential ore horizon wasnot reached, and no mineralized rock was penetrated.

Mining Equipment and Other Facilities

There are no buildings or equipment on the property. The applicant plans to employ contractors to do all work.

GEOLOGY

Strata exposed on the Little Joe 1 - 24 claims are the Moenkopi formation of early and middle Triassic age which is overlain by the Shinarump member and the lower shale member ("Echo Peaks member") of the Chinle formation of late Triassic age. The Shinarump member forms a bench which is about 400 feet above an extensive plain, developed on the Kaibab limestone of Permian age south of the property, while west and northwest of the bench the topography rises and about 2,500 feet of strata of Triassic and Jurassic age are exposed along the edge of the Paria Plateau. These strata, in ascending order are the "Echo Peaks", Petrified Forest and Owl Rock members of the Triassic Chinle formation, about 1,000 feet thick. These are overlain by the Moenave formation, about 290 feet thick, and the Kayenta formation, about 200 feet thick, of Triassic or Jurassic age, and the Navajo sandstone of Jurassic age which is more than 1,000 feet thick. The strata on the claims strike from about N. 53° E. to N. 80° E. and dip from 2° S. to 5° NW. About three miles to the east the strata are flexed into the northerly trending, east facing Echo Cliffs monocline which has a structural relief of about 750 to 1,000 feet. There are no known faults on the property although a northwesterly-trending fault and two small folds are exposed in the Moenkopi formation about ½ mile northeast of the claims.

The ore-bearing sandstone in the general area is the Shinarump member of the Chinle formation. In places it is absent, but in other places, it is as much as 125 feet thick. On the claims it ranges from about 30 to 113 feet thick. The thicker sections represent an increased thickness of both an upper non-channel sandstone and a lower sandstone which fills scours in the Moenkopi formation.

The Shinarump member is composed of light gray to yellow, fine- to coarse-grained, locally conglomeratic sandstone which, in places, grades into bluish sandy shale. The sandstone is composed of lenticular crossbeds that vary in texture. Where conglomeratic, the pebbles of quartz and quartzite in places are in contact with one another and in other places are arranged as chains of pebbles embedded in sandstone or locally, near the base of the member, embedded in argillaceous sandstone. Silicified fossil wood commonly is preserved as fossil logs and is abundant, particularly near the top of the member; some "trees" are more than 50 feet long. Carbonaceous rather than silicified fossil wood was observed only in proximity to uranium minerals.

The contact of the Shinarump member with the underlying Moenkopi formation is unconformable. Scours in the Moenkopi formation range from about five feet to 60 feet deep. In cross-section the scours are asymmetrical with the steep or cut bank on the south or west side. Where there are no apparent channels, the Shinarump member overlies a 15-foot very-fine grained silty sandstone bed in the Moenkopi formation. The larger scours have cut into and through this bed. Sandstone of the Shinarump member has filled these scours with the result that the channels on outcrop may be obscure as they are represented by a faint contact line which transects the bedding of what appears to be a continuous sandstone layer. As the Shinarump member and the sandstone bed in the uppermost part of the Moenkopi formation are resistant, they form a cliff, the base of which is 100 to 200 feet below the contact. The contact is accessible only in the southwestern part of the claims and this is at a place where the basal part of the Shinarump member consists of siltstone and non-resistant silty sandstone. Elsewhere the Moenkopi-Shinarump contact cannot be examined in detail.

Plane table surveys and evaluation of subsurface data on ground north of and in the northern part of the claims by P. H. McCary show a dominant northwesterly trend of the large channels.

ORE DEPOSITS

Three uranium ore deposits are known in the general area. The nearest is the El Pequito, about 2½ miles northeast of the property, which in June, 1956, produced from the Shinarump member 38 tons of ore that averaged 0.18 percent U_3O_8 and 0.06 percent V_2O_5. AEC reserves for this deposit which consists of two ore bodies that already have been largely mined out and one ore body that has been reached by a 20-foot surface cut, are 362 tons.

The second deposit is on the Big Blue claim and is about five miles southwest of the subject property. This deposit, in 1955, produced 38 tons which averaged 0.27 percent U_3O_8 with no recorded V_2O_5. The ore horizon here apparently is a sandstone layer on the Chinle formation which is well above the Shinarump member. AEC reserves are an estimated 160 tons which average 0.20 percent U_3O_8.

The third deposit is the Sun Valley mine, about 10 miles southwest of the subject property. Production totals 370 tons which averaged 0.28 percent U_3O_8; reserves are estimated at 1268 tons which average 0.37 percent U_3O_8.

The El Pequito and Sun Valley deposits are localized where a thin Shinarump sandstone fills shallow scours or channels. These scours have small lateral dimensions as compared to the prominent but barren or weakly mineralized large, through-going channels. The Sun Valley deposit is in a sandstone that is about 20 feet thick which apparently pinches out laterally. The El Pequito deposit consists of three small ore bodies in a sandstone, about 20 feet thick, which occupies a scour that has a depth of about 15 feet. This scour trends south-

westerly and appears to be subsidiary to a large north-westerly trending channel south of the deposit. The large channel was extensively drilled by private industry but only weakly mineralized rock was penetrated.

The large channels do not appear to be favorable sites for the localization of ore minerals as, unlike the small channels which more often contain ore, they are relatively free of mudstone seams and layers which interrupt the continuity of the sandstone and act as traps. The persistency of the large channels may be such that regional ground water conditions permitted the flushing of any ore minerals from the large channels.

The channels on the Little Joe claims are large (fig. 2) and the sandstones appear to be free of interbedded mudstone. The exception is a siltstone and silty sandstone filled channel in the southwestern part of the claims. The lithology here resembles strata which directly overlie rather than underlie Shinarump type sandstone.

Although there is a chance that one or more small deposits in subsidiary scours underlie the bench upon which the Little Joe claims are staked, it is unlikely that these deposits would be commercial as depths to ore would be at least 40 feet, and in the central and western parts would lie considerably deeper. The chance of finding a significant ore deposit is poor.

The ore minerals are unoxidized and oxidized uranium minerals like those of Shinarump deposits in other areas. In the El Pequito deposit uraninite is associated with carbonaceous material and also occurs in an unoxidized area in a shallow structural low away from the outcrop. Uranium efflorescences and sparse secondary copper minerals occur near the outcrop. Vanadium is very sparse and is not readily detectable by visual inspection.

PROPOSED EXPLORATION

The applicant did not present a definite plan of exploration, however, the applicant's representative, Mr. Phillip McCary, outlined a suggested plan of exploration at an estimated cost of $25,000.00. Government participation at 75 percent would be $18,750.00. The breakdown of costs by the applicant is as follows:

Drilling	$15,000.00
Consulting fees	5,000.00
Bulldozing	5,000.00
TOTAL	$25,000.00

The allotment for drilling, $15,000.00, at the estimated $1.75 per foot would provide for 8,500 feet of drilling. The cost of geologic consultation on this basis would be nearly $0.60 per foot, and for bulldozing, an equal amount. It is apparent that the foregoing cost figures are not realistic.

During the field examination, the applicant's geologist, Mr. McCary, outlined a more definite plan of exploration based on a reconnaissance he has made on the Little Joe claims and adjoining properties. Briefly, it consists of a series of holes along the projected course of channels, starting from a rim exposure. One hole would be drilled on the projected centerline of a channel about three hundred feet from the last known position. From the results of this hole, its position relative to the true centerline would be determined, the probable position of the flanks of the channel 300 feet ahead would be estimated, and two holes drilled at these positions. From the results of these holes the probable position of the flanks of the channel at this point, and of the centerline 300 feet further ahead would be determined, and one hole drilled at the advance

position. The program would then proceed alternating between one and two holes as the work progressed. Presumably, the large channels would be outlined by this work but small subsidiary channels probably would be missed. A second stage of drilling on closer centers would then follow based on the information developed in the preliminary work. Mr. McCary did not expect to do more than develop geologic information and delineate the channels during phase I drilling, unless some of the holes fortuitously penetrated ore.

The proposed first stage of drilling is reconnaissance and prospecting rather than exploration, and it would be difficult to set up a DMEA contract based on drilling suggested by the applicant. Drilling of holes not over 175 feet in depth would proceed rapidly, and new locations would have to be designated at too frequent intervals.

CONCLUSIONS AND RECOMMENDATIONS

Because of the apparent lithologic uniformity of sandstone which fills the Shinarump channels and the through-going character of the channels, it is unlikely that commercial deposits of uranium ore are localized in, or, if once locally present, remain in extensions of the large channels which outcrop on the Little Joe claims. There is a possibility that one or more small deposits of less than 500 tons may be localized in small hidden subsidiary channels. The spotty occurrence of uranium minerals within these deposits render them barely economic where they are exposed at or near the surface.

There appears to be little possibility of finding uranium deposits on the property which can be mined profitably or would constitute a significant addition to the Nation's stockpile. Probably none of the deposits which have been mined in the area to date have been profitable, including the one visited by the DMEA examining team on the El Pequito claims.

Denial of the proposal under Docket No. DMEA 4445 is recommended.

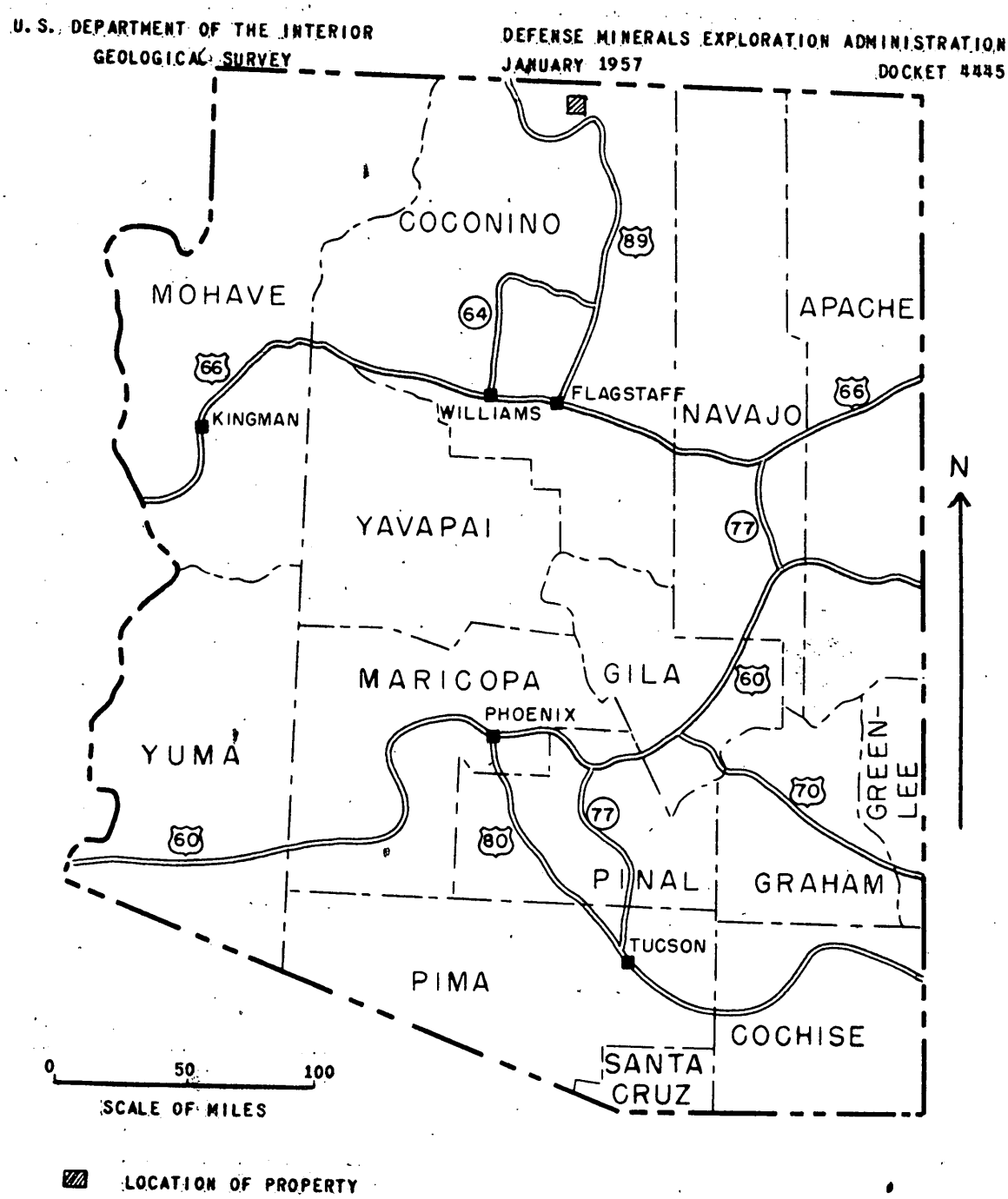
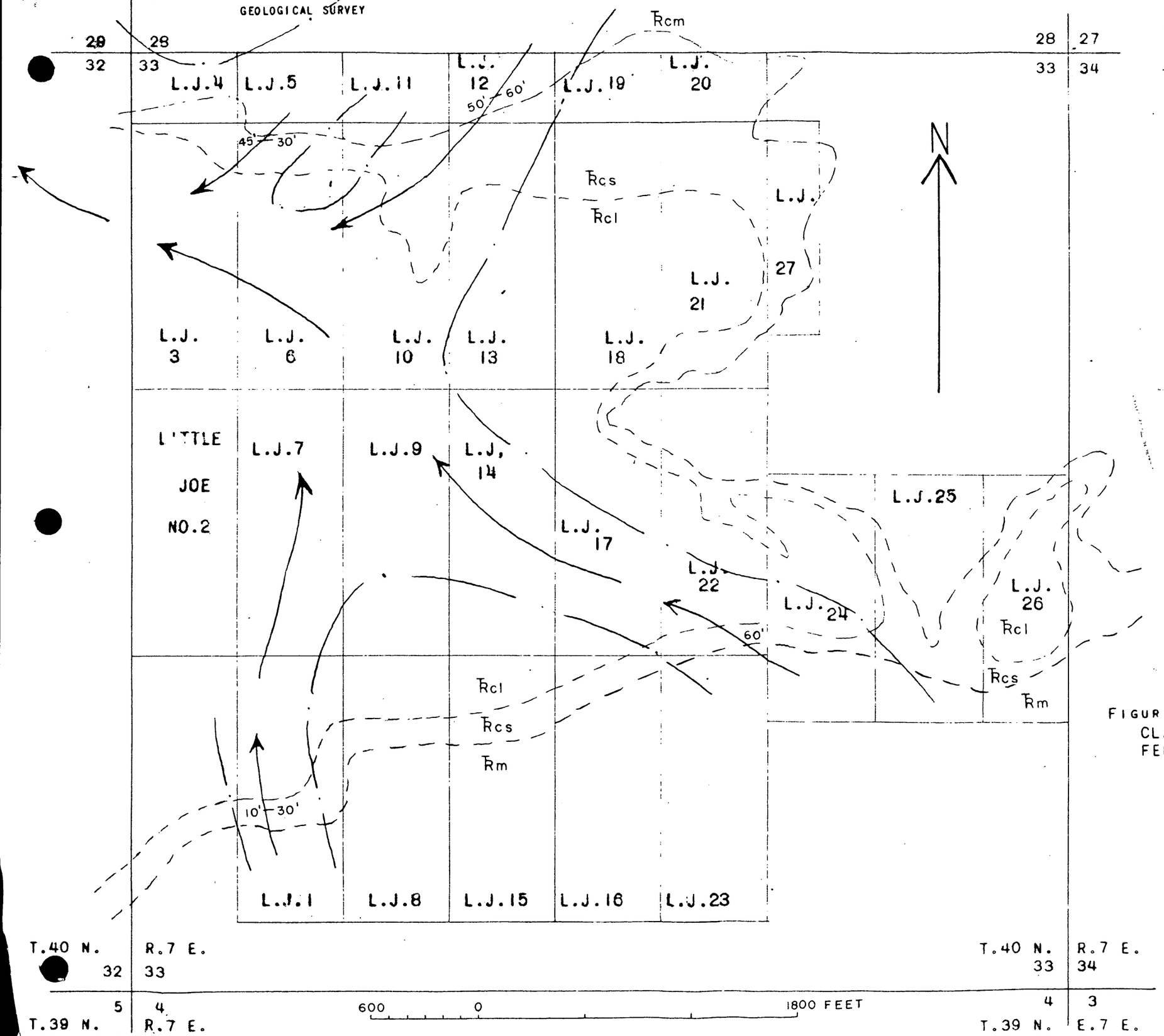


FIGURE 1.--LOCATION MAP, LITTLE JOE CLAIMS, HELICOPTER EXPLORATION COMPANY, COCONINO COUNTY, ARIZONA.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DECEMBER 1956 DOCKET 4445



EXPLANATION

Ꞧcl — LOWER SHALE MEMBER, TRIASSIC CHINLE FORMATION

Ꞧcs — SHINARUMP MEMBER, TRIASSIC CHINLE FORMATION

Ꞧm — TRIASSIC MOENKOPI FORMATION

GEOLOGIC CONTACT, APPROXIMATELY LOCATED

APPROXIMATE EDGE OF SHINARUMP CHANNEL ON OUTCROP AND INFERRED EXTENSIONS BEHIND OUTCROP

60' — APPROXIMATE LOCATION OF AXIS OF SHINARUMP CHANNEL ON OUTCROP AND INFERRED EXTENSIONS BEHIND THE OUTCROP; NUMBER REFERS TO DEPTH OF SCOUR

Note: GEOLOGICAL CONTACTS ADOPTED FROM U.S. GEOLOGICAL SURVEY UNPUBLISHED DATA; CHANNELS AND CHANNEL TRENDS IN PART FROM MAP BY P.H. MCCARY SUBMITTED BY APPLICANT.

FIGURE 2.--GEOLOGIC MAP OF THE LITTLE JOE CLAIMS, HELICOPTER EXPLORATION CO., LEE'S FERRY AREA, COCONINO COUNTY, ARIZONA.

RECEIVED
JAN 24 1957
D.M.E.A.

10/17/56

DMEA
DEPARTMENT OF THE INTERIOR
OCT 10 1956
REGION III
DENVER, COLORADO

October 10, 1956

Memorandum

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

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4445 (Uranium-Copper), Helicopter Exploration Company (Little Joe Claims) Coconino County, Arizona

The application for Helicopter Exploration Company, Docket DMEA 4445, in the amount of $25,000.00 was received in this office on October 10, 1956.

A field examination will be made and suitable report prepared by an engineer from the Denver or Grand Junction office.

W. H. KING

W. H. King

cc: W. M. Traver (2)
E. N. Marshman
J. W. Hasler
M. E. Salsbury
J. F. Shaw
Sec. Op. Com. (2)

70

224 New Customhouse
Denver 2, Colorado

October 9, 1956

Memorandum

To: W. H. King (2) (w/ brochure)
J. W. Hasler

From: DMEA Field Team, Region III

Subject: Docket DMEA 4445 (Uranium-Copper) Helicopter Exploration Company (Little Joe Claims) Coconino County, Arizona

Enclosed is the subject application in the amount of $25,000.00. A field examination and suitable report are requested.

Your attention is directed to a letter from the Chairman of the Operating Committee, dated October 5, 1956, copy of which is attached. Also enclosed are copies of memoranda of review of the application by W. P. Williams and John E. Crawford.

Will you please return the brochure with the report of examination.

DMEA Field Team, Region III

E. N. Harshman

E. N. Harshman
Acting Executive Officer

Enclosures

EHC:ytl
cc: Sec. Op. Comm. (2)
Harshman
Docket 4445
Chron.

Same copy

700

Ching
Selfridge
Mitchell

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

OCT 5 1956

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

Re: Docket No. DMEA-444S
(Uranium and copper)
Helicopter Exploration Company
Little Joe Claims
Coconino County, Arizona

Dear Mr. Traver:

The subject application is being referred to you for investigation, a field examination if warranted, and recommendations. Two copies of the application were retained for the use of the Field Team.

Copies of memoranda, dated September 28 and October 1, 1956, by W. P. Williams, USGS, and John E. Crawford, USBM, respectively, relating to the application, are enclosed for your information.

In the event a contract appears likely, a Consent to Lien and Subordination Agreement should be secured from J. O. Baker.

Please note that the Applicant wishes to include in the application the 27 Little Joe claims described in detail by the Arizona Engineering Company and shown on the map prepared by it. The Mine Option and Purchase Agreement under which the Applicant controls the property covers the 24 Little Joe claims recorded in Book 83, pages 281 through 304, and the 32 Hansen claims, but does not include three of the claims shown on the map.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

MChing/gla 10-4-56
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Ching

Enclosures

APPROVED:

Frank D. Lamb
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

Surname copy

700

Ching
Ellis
Kilsgaard
Lamb
Selfridge

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

OCT - 5 1956

Mr. Carl F. Brady, Partner
Helicopter Exploration Company
304 N. 26th Avenue
Yakima, Washington

Re: Docket No. DMEA-4445
(Uranium and copper)
Helicopter Exploration Company
Little Joe Claims
Coconino County, Arizona

Dear Mr. Brady:

The application for assistance in exploring your claims, 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:

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

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

Sincerely yours,

C. O. Mittendorf

Administrator

MChing/gla
10-4-56
cc to: Admr.'s Reading File
Docket
Code 700
Mr. Ching
DMEA Field Team, Region III (2)

R.C.L.

10/3/56 gla

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

RECEIVED
OCT - 2 1956

Date 10/1/56

DMEA Docket No. 4445
DMEA Contract No.
Commodity Uranium
Name of applicant Helicopter Exploration Company
Name of property Little Joe Claims
Location of property Coconino County, Arizona
Estimated cost of project $25,000.00

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee
From: John E. Crawford, Bureau of Mines Member JEC
Uranium Commodity Committee
Subject: Review of Application
(Application, Field Team Report, etc.)

1. Date of subject document: 8/25/56. 2. Date received by reviewer: 9/24/56.

3. Prior reports on this property known to reviewer: Yes [ ], No [x].

4. Prior reports on nearby properties known to reviewer: Yes [ ], No [x].

5. Information available on past production: Yes [ ], No [x].

6. Other pertinent factors known to reviewer: Yes [ ], No [x].

7. Explain items marked yes above:

8. Factors needing special consideration:
a. Location [ ]
b. Ownership [ ]
c. Evidence of mineralization [ ]
d. Geology [ ]
e. Proposed exploration method [ ]
f. Alternate exploration method [ ]
g. Costs [ ]
h. _____ [ ]

9. Action advised:
a. Obtain information from applicant [ ]
b. Refer to Field Team [ ]
c. Denial [ ]
d. Agree with Field Team [x] memo of 9/20/56
e. Disagree with Field Team [ ]
f. Suggest alternate plan [ ]
g. Request another examination [ ]
h. Approval [ ]
i. Consult with Mr. _____ at _____ AEC office.

10. Remarks: (Use back of page if necessary)
Recommend field examination. Mr. J. O. Hosted, Washington representative of the Atomic Energy Commission, assisted in the review.

10/1/56 gla

IN REPLY REFER TO:

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

RECEIVED
OCT - 1 1956

September 28, 1956

Memorandum

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

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

Subject: Review of application, DMEA 4445, Helicopter Exploration Company, Little Joe claims, Coconino County, Arizona, (uranium).

The applicant proposes to explore for uranium ore deposits on 27 mining claims. The work would consist of about 8,575 feet of drilling.

The applicant's description of the proposed work and estimate of costs are extremely generalized. The proposed drilling is described as, " - - - to drill the linear extent of the channels of the Shinarump. Then drill cross-sections in accordance with good exploration practices". The suspected trends of Shinarump channels are shown on application maps, but no locations of proposed holes are shown.

A memorandum review of the application by Grand Junction personnel states that the general vicinity of the property has not produced significant ore tonnages, ore bodies in the area are known to be small, and a recommendation for denial would probably result from a field examination.

Government representatives have been in the vicinity of the claims if not actually on the property. If there is more factual information about the property already in Government files this might properly be a case where recommendations could be made without actually visiting the property. I note, however, that the applicant expects the Government to make a regular field examination. In any event, the application should be referred to the Field Team for further review and appropriate action.

W. P. Williams

W. P. Williams

9/24/56 gla

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

RECEIVED
SEP 24 1956

224 New Customhouse
Denver 2, Colorado

September 20, 1956

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Docket DMEA-4445 (Uranium) Helicopter Exploration Company, (Little Joe claims), Coconino County, Arizona

Enclosed are the original and three copies of a joint report of review of the subject application.

Because of Shinarump channels and copper-uranium minerals exposed in the channels, members of the Grand Junction office, DMEA, recommend that the property be examined. We concur in this recommendation.

DMEA Field Team, Region III

By W. M. Traver
Executive Officer, DMEA

Enclosures

17mc

MINERAL DEPOSITS
IN REPLY REFER TO:
DMEA
RECEIVED
SEP 18 1956
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 360
Grand Junction, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
SEP 19 1956
REGION III
DENVER, COLORADO

September 17, 1956

RECEIVED
SEP 24 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman
J. William Hasler

From: Frank M. Byers, Jr., and M. H. Salsbury

Subject: Recommendation of field examination, DMEA 4445 (Uranium), Helicopter Exploration Company, Little Joe claims, Coconino County, Arizona

The applicant has requested DMEA assistance to explore Shinarump channels on the Little Joe claims covering the Shinarump Mesa about a mile north of Marble Canyon Lodge at Navajo Bridge, Coconino County, Arizona. They are about two miles south of the McCary-Beacom property (Fehfu and El Pequito claims, DMEA 3532), on which a 500-ton ore body containing uranium and copper has been developed in a Shinarump channel. Copper and uranium minerals in Shinarump channels are exposed in outcrop on the Little Joe claims, according to the applicant.

The area in which the property occurs has not produced a significant tonnage to date and ore bodies are known to be small, 500 tons or less. In all probability, the application will be denied following a field examination. However, because of Shinarump channels and copper-uranium minerals exposed in the channels, it is recommended that the property be examined in the field and a report of examination prepared.

We are holding a copy of the applicant's brochure, pending notification to make the field examination.

Frank M. Byers, Jr.
Frank M. Byers, Jr.,
Geologist

Frank M. Byers, Jr.
(for) M. H. Salsbury,
Engineer

FMB/mlr

cc: S. R. Wilson

August 31, 1956

Helicopter Exploration Co.
304 N. 26th Avenue
Yakima, Washington

Subject: DMEA-4445
Re: Exploration Assistance
Little Joe Claims

Gentlemen

The receipt of your application dated August 25, 1956 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-4445 and referred to the Rare & Misc. Metals Division.

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

Sincerely yours,

Allen S. Dakan
[redacted], Chief
Operations Control and
Statistics Division

August 31, 1956

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

- 4445 Helicopter Exploration Co.
Little Joe Claims

Robert E. Adams
~~Allen S. Dakan~~
~~Chief, Operation~~'s Control
and Statistics Division

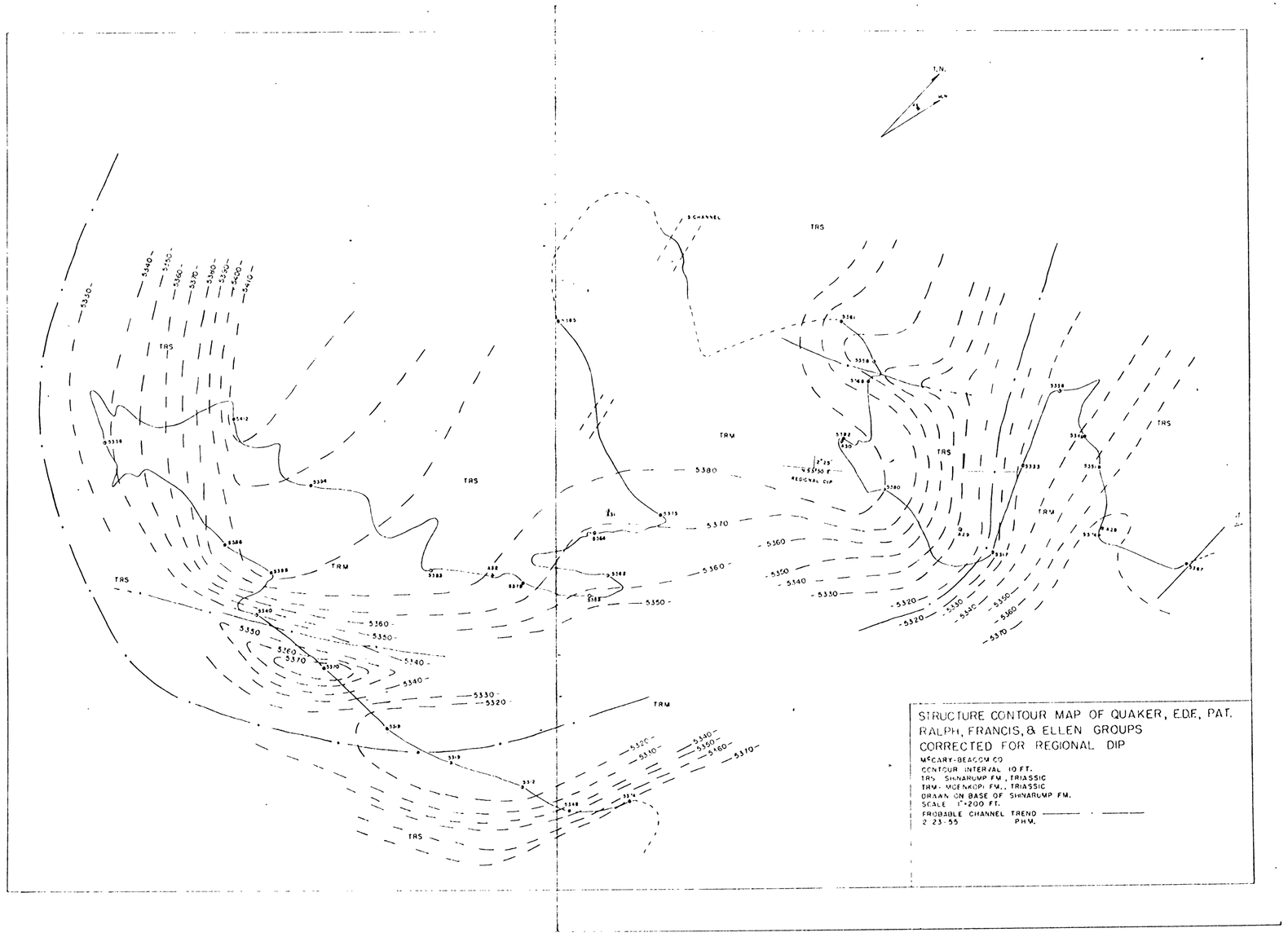
THE WHITE HOUSE

S. M. E. A.

KR 4459

Mr. Mitchell

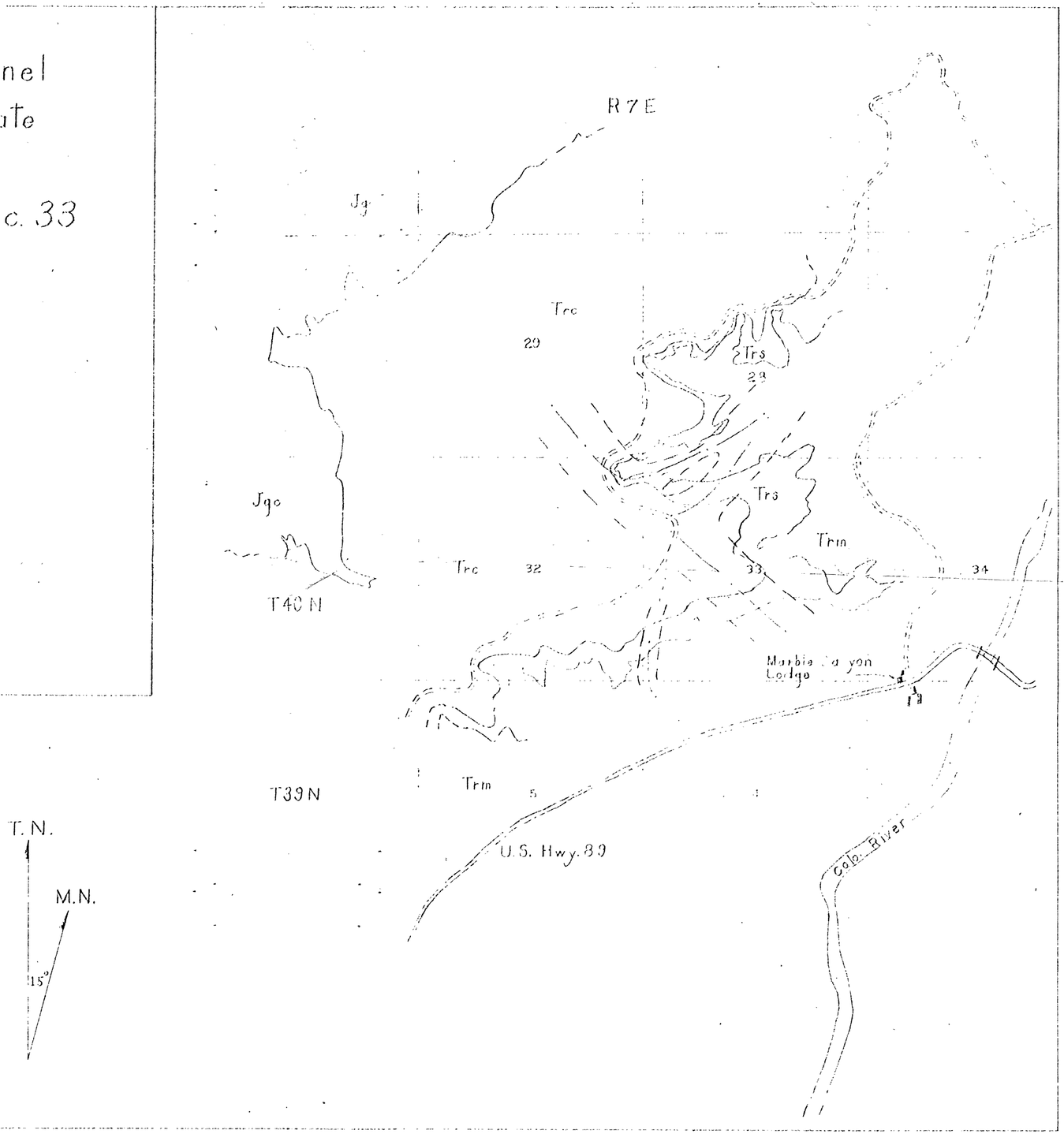
Felix E. Wormser
Asst. Secretary of the Interior

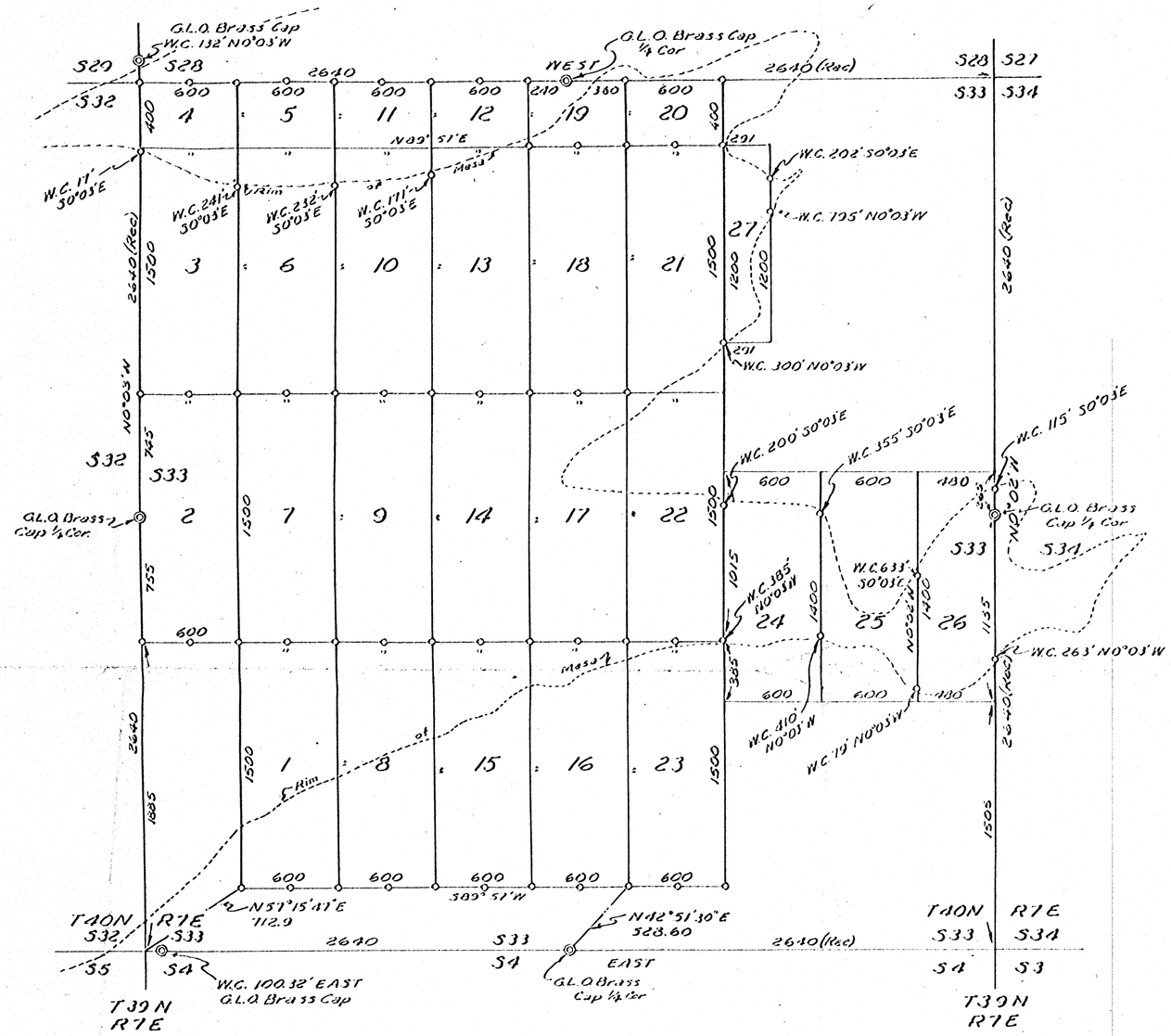


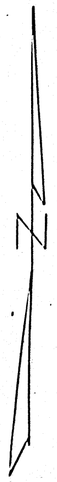
STRUCTURE CONTOUR MAP OF QUAKER, E.DE, PAT.
RALPH, FRANCIS, & ELLEN GROUPS
CORRECTED FOR REGIONAL DIP

McCARY-BEACOM CO
CONTOUR INTERVAL 10 FT.
TRS SHINARUMP FM., TRIASSIC
TRM - MOENKOPI FM., TRIASSIC
DRAWN ON BASE OF SHINARUMP FM.
SCALE 1"=200 FT.
PROBABLE CHANNEL TREND ——— · ———
2-23-55 PHM.

Map Showing Probable Channel
Trends in Shinarump Conglomerate
Coconino County, Arizona
Owned by H.E.C. Company - Sec. 33
Jgc. - Glen Canyon Group, Jurassic
Trc. - Chinle fm.
Trs. - Shinarump congl. } Triassic
Trm - Moenkopi fm.
Probable channel trend -
Scale - 1 in. = 2,000 ft.
Phillip H. McCary Jr.
1-13-56







REGISTERED CIVIL ENGINEER
CERTIFICATE EXPIRES
CHARLES W. DRYDEN
DEC. 31, 1957
ARIZONA, U.S.A.

This is to certify that the above plat was prepared from field notes of actual surveys made under my supervision and that the same are true and correct to the best of my knowledge and belief.

Signed: C.W. Dryden, Reg. Prof. Engr.

o 3/8" x 12" Steel pin & Rock Monuments at claim corners

◎ G.L.O. Brass cap survey marker found

Plat of the

LITTLE JOE
MINING CLAIMS

Located in Sec. 33, T.40N., R.7E.
G.& S.R.B.& M.
Coconino County, Arizona

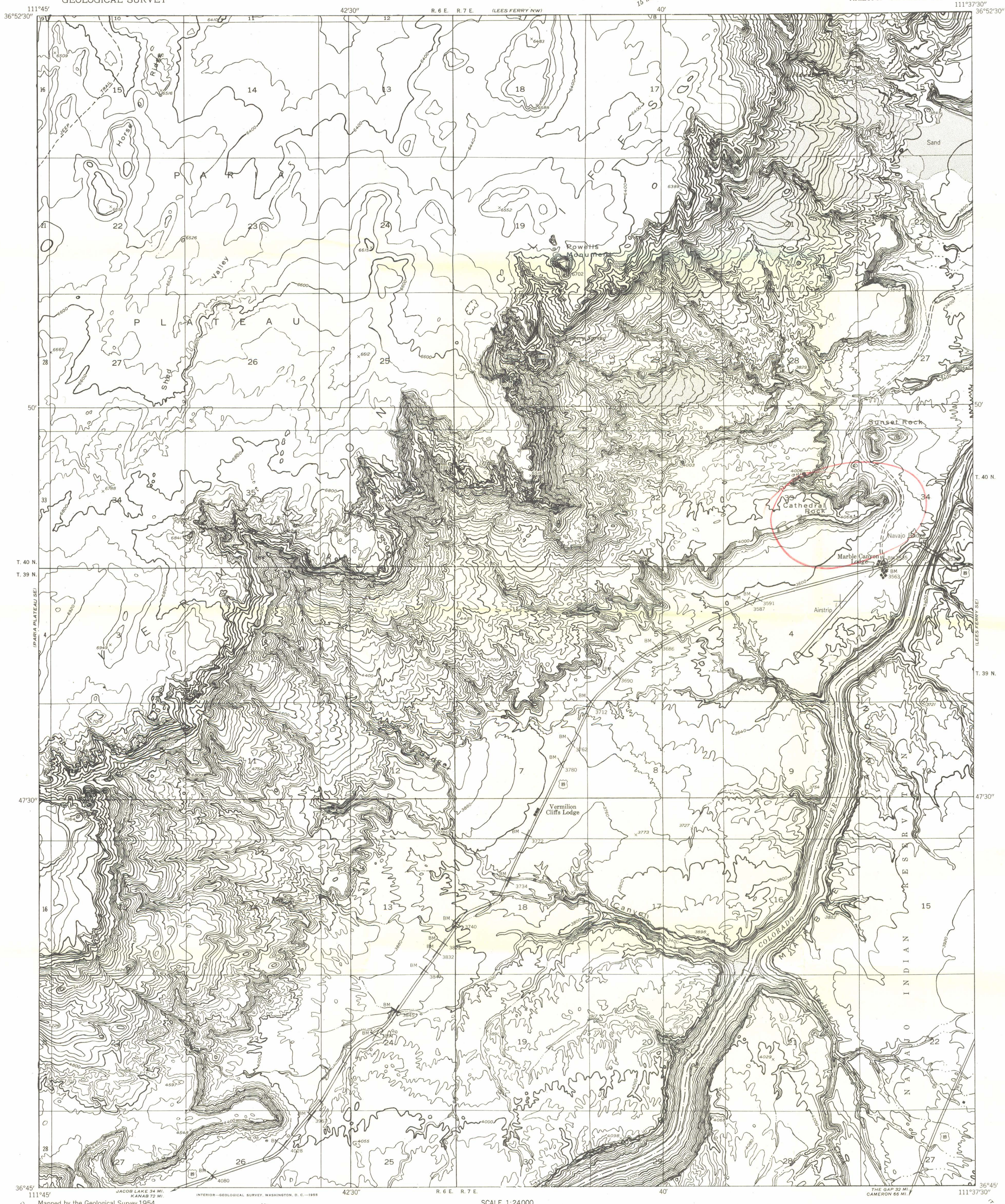
Scale: 1" = 600 January 19, 1956

ARIZONA ENGINEERING CO.
FLAGSTAFF

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Preliminary edition
Pending completion of 1:62,500 scale
15 minute maps covering this area

LEES FERRY SW QUADRANGLE
ARIZONA—COCONINO CO.



Mapped by the Geological Survey 1954

Topography by multiplex methods from aerial photographs taken 1951

15°
TRUE NORTH
MAGNETIC NORTH

APPROXIMATE MEAN DECLINATION, 1954

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1955

SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION

Improved ═══ Unimproved - - - - -

LEES FERRY SW, ARIZ.
N3645—W11137.5/7.5