JOB PHONE
CH. 2-2200

OFFICE PHONE
CH. 2-[illegible]

EVERETT J. EDGAR
CONTRACTOR
1451 DOLORES
GRAND JUNCTION, COLORADO

9-20-57

Mr John Schumacher
Uravan Mt. Co.

In Regard to work on Ridge road
Also on G.M.E.A. Loan

Our Price for Extending Edge
is $12.00 Per hr dollars with
[illegible] will be needed
[illegible] Ten thousand dollars
Ten thousand dollars is more
than we morning charge will [illegible]

Everett J Edgar

ULA URANIUM INC

BID AND SCHEDULE OF UNIT PRICES FOR EXPLORATORY DRILLING

RED CANYON AREA, WHITE CANYON MINING DISTRICT

Ula Uranium Inc. owner or lessee of the P. H. group, Teton group, Sowbelly group, Thunderbird group, and Sunstroke group in Red Canyon is making application for a Defense Minerals Exploration loan. This loan, if granted would include one hundred nineteen drill holes of an average depth of 225 feet or a total of 26,700 feet of which approximately 1,500 feet would be cored.

These claim groups are in the Blue Canyon fork of Red Canyon and approximately eighty miles southwest of Blanding, Utah. Forty miles of the road from Blanding to the property is improved road, Utah No. 95 and forty miles of truck road. Camp facilities must be provided for by the drilling contractor for his own crew. Water haul will be approximately ten miles unless the existing springs within a mile can be developed. Coring by air will be permitted. Core recovery is expected to be at least 90%. Holes not completed to their estimated depth will not be paid.

NON-CORE DRILLING

From Surface to 200	$2.50	per foot.
200 to 400	$3.00	per ft.

CORE DRILLING (MINIMUM BX CORE)
ESTIMATE TOTAL 1,500 FEET.

From Surface to 200	$5.00	per ft.
200 to 400	$6.25	per ft.

DELAYS: When delays are caused by the Company, the contractor shall be paid at the rate of $ 15.00 per hour, per drill.

For further information, contact John I. Schumacher, Box 1648, Grand Junction, Colorado or Ula Uranium Inc. Luhrs Building, Phoenix, Arizona.

MINERALS ENGINEERING COMPANY
Drilling Company

By Edson Foster
Signature of Bidder

March 20, 1957
Date

ULA URANIUM INC

BID AND SCHEDULE OF UNIT PRICES FOR EXPLORATORY DRILLING

RED CANYON AREA, WHITE CANYON MINING DISTRICT

Ula Uranium Inc. owner or lessee of the P. H. group, Teton group, Sowbelly group, Thunderbird group, and Sunstroke group in Red Canyon is making application for a Defense Minerals Exploration loan. This loan, if granted would include one hundred nineteen drill holes of an average depth of 225 feet or a total of 26,700 feet of which approximately 1,500 feet would be cored.

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NON-CORE DRILLING

From Surface to 200	$ 1.60	per foot.
200 to 400	$ 1.60	per ft.

CORE DRILLING (MINIMUM BX CORE)
ESTIMATE TOTAL 1,500 FEET.

From Surface to 200	$ 3.80	per ft.
200 to 400	$ 3.80	per ft.

DELAYS: When delays are caused by the Company, the contractor shall be paid at the rate of $ 15.00 per hour, per drill.

For further information, contact John I. Schumacher, Box 1648, Grand Junction, Colorado or Ula Uranium Inc. Luhrs Building, Phoenix, Arizona.

SPRAGUE & HENWOOD, INC.	By [signature]	3/20/57
Drilling Company	Signature of Bidder	Date

ULA URANIUM INC

BID AND SCHEDULE OF UNIT PRICES FOR EXPLORATORY DRILLING

RED CANYON AREA, WHITE CANYON MINING DISTRICT

Ula Uranium Inc. owner or lessee of the P. H. group, Teton group, Sowbelly group, Thunderbird group, and Sunstroke group in Red Canyon is making application for a Defense Minerals Exploration loan. This loan, if granted would include one hundred nineteen drill holes of an average depth of 225 feet or a total of 26,700 feet of which approximately 1,500 feet would be cored.

These claim groups are in the Blue Canyon fork of Red Canyon and approximately eighty miles southwest of Blanding, Utah. Forty miles of the road from Blanding to the property is improved road, Utah No. 95 and forty miles of truck road. Camp facilities must be provided for by the drilling contractor for his own crew. Water haul will be approximately ten miles unless the existing springs within a mile can be developed. Coring by air will be permitted. Core recovery is expected to be at least 90%. Holes not completed to their estimated depth will not be paid.

NON-CORE DRILLING

From Surface to 200	$ 1.50	per foot.
200 to 400	$ 1.75	per ft.

CORE DRILLING (MINIMUM BX CORE)
ESTIMATE TOTAL 1,500 FEET.

From Surface to 200	$ 3.50	per ft.
200 to 400	$ 3.05	per ft.

DELAYS: When delays are caused by the Company, the contractor shall be paid at the rate of $ 12.50 per hour, per drill.

For further information, contact John I. Schumacher, Box 1648, Grand Junction, Colorado or Ula Uranium Inc. Luhrs Building, Phoenix, Arizona.

Scott Bros. Drilling Co.
Drilling Company

By [signature]
Signature of Bidder

March 19,57
Date

0563

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DMEA
DEPARTMENT OF THE INTERIOR
APR 4 - 1957
REGION III
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. .....
Metal or Mineral .....
Date Received .....
Estimated Cost .....
Participation (Government %) .....

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Ula Uranium, Inc.
216 Luhrs Bldg.
Phoenix, Arizona

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

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

(*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 See attached sheet
P.H. Group, Teton Group, Sowbelly Group and Thunderbird Group. Township 36 South, 15 East, S.L.M., San Juan County, Utah.

(*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
See attached sheet

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

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

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

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

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

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

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

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

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

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

(*c*) The work will start within 30 days and be completed within 4 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated March 22, 1957

Ula Uranium, Inc.
(Applicant)

By Darron Thompson
DARRON THOMPSON, President

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

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

MAR 27 1958

Mr. Darrow Thompson, President
Ula Uranium, Inc.
216 Luhrs Building
Phoenix, Arizona

Re: Docket No. DMEA-4719 (Uranium)
P.H., Teton, et al., Groups
San Juan County, Utah

Dear Mr. Thompson:

Your letter dated February 25, 1958, to Mr. King asked two questions with respect to the Government's offer of contract transmitted to you with Mr. Harshman's letter of November 19, 1957.

It appears that much of the work proposed for an exploration project was completed by your company prior to receipt of the Government's offer of contract, and you ask whether you may now execute the contract in order to complete that work described as Stage III therein. We regret that the answer is "No." As the contract was not accepted as offered, you may not now accept just a part thereof. Moreover, even if the contract had been accepted as offered, the Government's written approval to perform the last stage of work would have been required. Such approval would not have been granted for the reason that our study of the results of the drilling already performed by your company indicates that the probability of disclosing significant ore reserves is not sufficiently promising to justify Government participation. Accordingly, please return the copies of the contract to Mr. W. H. King, Executive Officer, DMEA Field Team, Region III, 224 New Customhouse, Denver 2, Colo.

Your second question is whether a request for a new project on the same land must begin with a new application. Since no contract resulted from your original application, and none would be offered based upon our present information, you may file a new application based upon additional information obtained from further work that your company performs on the land.

Sincerely yours,

E. O. Wilterdink

Administrator

HCRubin:md 3/24/58
CC: DMEA Docket
Admin. reading file
T.H.Kiilsgaard, USGS
Mr. Murphy
R. P. Dwyer
H. C. Rubin
Field Team, Region III (2)
Chron. Open Cont

EXTRA COPY DMEA RECEIVED AUG 28 1957		
DATE	INITIALS	CODE
		130

224 New Customhouse
Denver 2, Colorado

August 26, 1957

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-4719 (Uranium) Ula Uranium, Inc. (FH, et al., claims) San Juan County, Utah

Enclosed are the following, which relate to the Joint Report of Examination on the subject property by H. F. Robertson, USBM, and F. M. Byers, Jr., USGS, which was forwarded to you by our memorandum of August 9, 1957.

1. Eleven copies of corrected Figure 3, eight copies of which are for use in the preparation of the contract. The remaining copies should replace the Figure 3 attached to the original and two copies of the report sent to you.

2. Original and two copies of memorandum, dated August 21, 1957, from H. F. Robertson, Mining Engineer, USBM, which transmitted Item 1 to this office.

We will appreciate the legal section of the Washington Office, DMEA, preparing the indicated Consent to Lien forms.

Original signed by
E. N. HARSHMAN

E. N. Harshman

Enclosures

MHM:jy
cc: Harshman)
DMEA/DFC (2))
Gordon) w/encs., Items 1 & 2
Hasler)
Docket 4719)
Chron.

DME
PARTMENT OF T
AUG 23 1957
REGION III
DENVER, COLORA

P. O. Box 360
Grand Junction, Colorado

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D M E A
RECEIVED AUG 28 1957

DATE	INITIALS	CODE

August 21, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Rec'd EWH

From: H. F. Robertson

Subject: Docket No. DMEA 4719 (Uranium), Ula Uranium, Inc., (PH, et al claims), San Juan County, Utah

Enclosed are 22 copies of a revision of the figure 3 transmitted on August 5, 1957 with the joint report of examination. The revised map should replace the figure 3 attached to the reports and should accompany any contract between the Government and the applicant.

The revised location of the Dix group of claims with respect to the PH group is taken from an exhibit used in the court action to quiet title on conflicting claims owned by the principals involved. The exhibit was a claim map and is reportedly filed with the case folder.

The following information was obtained from John I. Schumacher, one of the principals:

Case No. C-30-56, U. S. District Court, District of Utah, Central Division.

J. I. Schumacher, et al, dba Strategic Minerals Exploration Co. and Mid-Continent Uranium Corporation
vs.
Dix Uranium Company and Regal Uranium Corporation

All of the ground concerned by the proposed exploration is covered by either the Dix group or the PH group so it appears that the Government's interest would be adequately protected. Ula Uranium, Inc. claims to have leases on both groups of claims and copies of the leases should substantiate their claim.

The following claims should be subordinated in the event of a contract.

Claims	Locators	Recorded Date	Book	Page
PH 7-30 incl.	Strategic Minerals Exp. Co.	7-17-54	131	204-218
Thunderbird 13-30 incl.	Claude Bird; Wm. Davis	8-6-54	143	309-317
Thunderbird 39-44 incl.	" " " "	8-6-54	143	322-324
Dix 13-29 incl.	F.C. Dixon; Jack V. Dixon	6-28-54	117	198-204
Regal 89	F.C. Dixon; Jack V. Dixon & H. A. Lewis	6-15-54	109	464
Regal 93	F.C. Dixon; Jack V. Dixon & H.A. Lewis	6-15-54	109	464
Regal 96	F.C. Dixon; Jack V. Dixon & H.A. Lewis	6-15-54	109	467
Regal 99-104 incl.	F.C. Dixon; Jack V. Dixon & H.A. Lewis	6-15-54	109	469-471
Dix Regal 1-12 incl.	F.C. Dixon; Jack V. Dixon	6-28-54	117	207-211
Lane Regal 9-10	F.C. Dixon; Jack V. Dixon and Roy Shane	9-27-54	197	358

A total of 68 claims as listed above should be subordinated to adequately cover the proposed project area.

H. F. Robertson

H. F. Robertson,
Mining Engineer

HFR/bh
Enclosure (22 copies)

August 20, 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 4719, (uranium), Ula Uranium, Inc., PM et al claims, San Juan County, Utah

The field examiners report that part of the applicant's property is geologically favorable enough to warrant DMEA participation in exploration. They point out the strong resemblance of the East PM channel to the Ula channel 3 miles to the south. About 15,000 tons of ore has been produced from the Ula channel, and the AEC estimates that 100,000 tons of indicated ore remain.

While the applicant's claims are located in a generally unfavorable area of flood plain deposits, the examiners state that the East PM channel shows up well in rim outcrop, and previous drilling gives a good indication of the location of the channel.

The examining team recommend approval of a three-stage drilling project that would have a total estimated cost of $49,512. I agree with the recommendations of the examining team.

It appears that the applicant should clear up certain claim boundary questions and submit an accurate property map before a contract is executed.

W. P. Williams

cc: DMEA (3)
James Paone
Jack Kratchman
Director's reading
Branch reading
Chron. file
Docket file
WPWilliams/mm

4719

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DATE	INITIALS	CODE
DMEA		

224 New Customhouse
Denver 2, Colorado

August 9, 1957

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 4719 (Uranium) Ula Uranium, Inc. (PH, et al Claims) San Juan County, Utah - Joint Report of Examination

Enclosed are the original and two copies of the Joint Report of Examination on the subject property by H. F. Robertson, USBM, and F. M. Byers, Jr. USGS.

The field examiners conclude that the probability for making a significant discovery is sufficiently promising to justify Government participation. Accordingly, they recommend that the Applicant's work proposal be approved, as modified by them, in which the Field Team concurs.

On page 29 of the report, you will note that an error was made in claiming the incidental allowance. The amount should be $0.24 per foot instead of $0.26 per foot. This carried to Stages II and III results in an overage of $377.00 to the total project cost. The approved total estimated project cost should be $47,135.63.

As noted on page 7 of the report, the land proposed for subordination is subject to change, hence no extra copies of map showing the proposed work in relation to the property boundaries are included. It appears that a contract cannot be prepared until the Applicant has furnished us with additional information including an accurate map which we requested by letter dated July 15, 1957.

No attempt was made to prepare Consent to Lien forms because of the obvious changes which are indicated.

E. N. Harshman

Enclosures
MHM:eh

E. N. Harshman

cc: Harshman)
DMEA/DFC (2))
Gordon) W/cy of Subject Report
Hasler)
Docket)
Jones
Chron.

Reviewed by
DMEA OPERATING COMMITTEE

(date)

IN REPLY REFER TO:
MINERAL DEPOSITS
DMEA
RECEIVED
AUG 7 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DMEA GEOLOGICAL SURVEY

DEPARTMENT OF THE INTERIOR
AUG 9 - 1957
REGION III
DENVER, COLORADO

P. O. Box 360
Grand Junction, Colorado

GEOLOGICAL SURVEY
DENVER, COLORADO

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DATE	INITIALS	CODE

August 5, 1957

Memorandum

To: W. H. King, Executive Officer, DMEA Field Team, Region III

From: J. William Hasler
M. H. Salsbury

E MH
TRANSMITTED
AUG 9 1957

Subject: Transmittal of joint engineering and geologic report of examination on DMEA docket 4719 (Uranium), Ula Uranium, Inc., PH et al claims, San Juan County, Utah

Enclosed are 10 copies of a joint report of examination on the subject property by H. F. Robertson, U. S. Bureau of Mines, and F. M. Byers, U. S. Geological Survey. Included are four figures to accompany the report. Figures 1, 2, and 4 are not to be included in the contract; however, an additional nine copies of figure 3 are included for the purpose of accompanying any contract that might be let with the applicant.

The Ula Uranium, Inc., 216 Luhrs Building, Phoenix, Arizona, applied for Government assistance to explore for uranium on their property in the Red Canyon area of the White Canyon Mining District, San Juan County, Utah. The application was referred to the field and an examination was made May 16, 1957 in company with Mr. F. J. Frankovich, geologist representing the applicant. The property consisted of four groups of claims; namely, the PH Nos. 1 through 30; Thunderbird 13 through 30, and 39 through 44; Teton 1 through 12; and Sowbelly Nos. 1 through 8.

The applicant's proposal is to explore for ore that would lie in the Shinarump member of the Chinle formation and would be localized in the paleo-stream channel scoured into the underlying Moenkopi formation. The applicant's program was not considered feasible and a revised program, resulting from conferences between the applicant's geologists and the examining team was submitted on June 10, 1957. There were some revisions in this program as well and they were discussed with the applicant and the program presented herein meets with the applicant's approval. It was deemed advisable from field evidence that the only channel containing thick channel-type conglomeratic sandstone facies and deep scour is the east PH channel and the recommended program is confined to this channel's inferred trend.

The exploration program as recommended will consist of 120,150 feet of non-core drilling and 18,000 feet of core drilling in three stages of work at an estimated over-all cost of $49,511.63. Government participation at 75 percent would be $37,133.72. It is believed that the program

Reviewed
DMEA OPERATING COMMITTEE

(date)

as presently outlined will explore ground that is likely to contain uranium ore deposits of significant size and grade and it is recommended that the proposed program be approved. I concur with the conclusions and recommendations of the examining team.

Mr. Philip M. Dodd, staff geologist, Grand Junction AEC office, and Mr. R. N. Larsen, party chief of the AEC White Canyon project, were consulted and furnished much pertinent data on channel trends in the Red Canyon-White Canyon area.

Memoranda of James Paone, U. S. Bureau of Mines, and W. P. Williams, U. S. Geological Survey, were noted.

J. William Hasler
J. William Hasler,
Geologist

M. H. Salsbury
M. H. Salsbury,
Engineer

JWH/mlr

Enclosures
Report w/ figures 1, 2, 3, 4

FOR UNITED STATES GOVERNMENT USE ONLY

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

TRANSMITTED
AUG 9 1957

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY EXAMINING TEAM
REGION III

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RECEIVED AUG 12 1957

DATE	INITIALS	CODE

DMEA 4719

Ula Uranium, Inc.

PH, et al claims

San Juan County, Utah

Uranium

Joint Engineering and Geologic Report

by

H. F. Robertson
Bureau of Mines

F. M. Byers, Jr.
Geological Survey

July 1957

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

DMEA 4719
ULA URANIUM, INC.
PH, ET AL CLAIMS
SAN JUAN COUNTY, UTAH

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ILLUSTRATIONS

Figure	Follows page
1. Location map; Dix, Thunderbird, and PH groups, Ula Uranium, Inc., San Juan County, Utah	34
2. Geologic map of White Canyon area showing location of Teton, Sowbelly, PH, Thunderbird, and Dix claim groups, Ula Uranium, Inc., San Juan County, Utah	34
3. Map showing claim groups, topography, geology, etc., and proposed exploration, Ula Uranium, Inc., San Juan County, Utah	34
4. Ore reserve map of part of Ula channel, Radium King Mines -- Ula property, San Juan County, Utah	34

EXTRA COPY
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RECEIVED AUG 12 1957

DATE	INITIALS	CODE

DMEA 4719
ULA URANIUM, INC.
PH, ET AL CLAIMS
SAN JUAN COUNTY, UTAH

INTRODUCTION AND SUMMARY

Ula Uranium, Inc., 216 Luhrs Building, Phoenix, Arizona, applied for DMEA assistance in a proposed drilling program on their property in the Red Canyon area of the White Canyon mining district.

An examination of the property concerned was made on May 16, 1957 by H. F. Robertson, Bureau of Mines and F. M. Byers, Jr., Geological Survey. Mr. F. J. Frankovich, geologist for the applicant, accompanied the examining team.

The property consisted of four groups of claims, namely, PH Nos. 1 through 30; Thunderbird Nos. 13 through 30 and 39 through 44; Teton Nos. 1 through 12; and Sowbelly Nos. 1 through 8. The claims cover sedimentary rocks of the Moenkopi, Chinle, and Wingate formations of Triassic age. The potential ore deposits would lie in the Shinarump member of the Chinle formation and would be localized in paleo-stream channels scoured into the top of the Moenkopi formation. Evidence of several channels, one of which appears favorable for uranium deposits, were observed on the applicant's property.

The first proposal submitted by the applicant consisted of a total of 26,700 feet of core and rotary drilling, to be done in three stages at a total estimated cost of $63,948.00. This proposed program was

replaced by an alternate program upon evaluation of drill-hole data and subsequent geologic mapping by the applicant. The program, resulting from conferences between the applicant's geologist and the examining team, was submitted on June 10, 1957 and consisted of an estimated 30,260 feet of non-core drilling and 240 feet of core drilling in 165 holes. It consisted of fences of drill-holes spaced along projected Shinarump-filled channels. The drilling would be divided into stages, and further into phases with the division based on groups of profiles across the inferred channels. Each profile in each stage would have in it holes on 200-, 100-, and 50-foot centers.

Some further revision of the applicant's proposed program was believed justified and was discussed with the applicant's representative. A program was agreed upon and, briefly, is as follows:

The only channel containing thick channel-type conglomeratic sandstone facies and deep scour is the East PH channel and the recommended exploration program is confined to its' inferred trend. The East PH channel would be explored from an area of extensive drilling, easterly toward the regional area of channel-type conglomeratic sandstone facies of the Shinarump. A large portion of the inferred channel remains unexplored between PH 13 claim and Thunderbird 15 claim where a hole penetrated ore-bearing material. Six fences of drill-holes are proposed to test for the presence of the channel in this area. These fences are essentially those proposed by the applicant but have been moved slightly to take advantage of the gullies crossing the projected trend of the

East PH channel. Three more fences of drill-holes are proposed to test the channel to the limit of the project area, making a total of nine fences of holes to test approximately two miles along the inferred trend of the East PH channel.

The exploration program, as recommended by the examining team, would consist of an estimated 21,150 feet of non-core drilling and 1,800 feet of core drilling in three stages at an estimated overall cost of $49,511.63. Government participation at 75 percent would be $37,133.72.

The examining team's recommendation that the application be approved is based on the premise that ownership or control of the project area is satisfactorily established by the applicant. As the property boundaries stand now, much of the proposed exploration would be on possibly invalid claims and unsubordinated ground. At the present time, the applicant is attempting to gain valid and legal control of the property involved in the proposed and recommended project.

ACKNOWLEDGMENTS

Mr. Philip H. Dodd, staff geologist, Grand Junction AEC office, and Mr. R. N. Larsen, party chief of the AEC White Canyon project, were consulted and furnished much pertinent data on channel trends in the Red Canyon-White Canyon area. Data on production and reserves of mines in the area were obtained from the AEC Ore Reserves section in Grand Junction.

Mr. F. J. Frankovich, the applicant's geologist, and Mr. R. C. Robeck, consulting geologist, mapped the subject area in detail and supplied the

examining team with copies of the resulting maps.

Memoranda of James Paone, USBM, and W. P. Williams, USGS, were noted.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The 80 unpatented lode mining claims included in the subject DMEA application are in two virtually contiguous groups in unsurveyed secs. 21, 22, 23, 24, 26, and 27, T. 36 S., R. 15 E., Salt Lake Meridian, San Juan County, Utah (fig. 1). The locations with regard to sections are tentative only as the township has not been subdivided. The claims lie in an area locally known as the "Blue Canyon Fork of Red Canyon" and are about 40 miles from the Atomic Energy Commission Natural Bridges camp via the Red Canyon access road and the "Chocolate Drop" road (see fig. 2). About three hours driving time is required to reach the claim group from the AEC camp which is 50 miles west of Blanding, Utah and 260 miles from Grand Junction, Colorado, the nearest major supply center.

The Blue Canyon area is typical of the terrain in the White Canyon Mining district. The claims lie on dissected benches capped by Shinarump and other lower Chinle sediments, overlooking to the south and west steep-walled canyons tributary to Blue Canyon (fig. 2). To the north and east the surface rises terrace-wise with steadily increasing gradient over upper Chinle slopes which end abruptly against vertical Wingate cliffs. A moderately deep, southwesterly trending canyon bisects the project area and exposes evidence of Shinarump-filled channels at several points.

Previous and proposed drilling has been confined to the area not covered by the Wingate formation. Drill sites and roads can be constructed at reasonable cost.

The altitude of the claim area ranges from 5,000 to 6,000 feet. The climate is arid, extremely hot in the summer and mild to cold in winter. Violent storms may occur in any season. Run-off from even light rain-storms may cause flash-floods because of the absence of soil cover and vegetation other than sparse desert grasses, cactus, and some scrub pinon and juniper. Operations may be delayed for short periods but, in normal years, are feasible during all seasons.

Ore produced from the area can be trucked to the uranium processing plant at Monticello, Utah, or to the newly completed mill at Mexican Hat, Utah.

There are no unusual problems of supply, labor, power, or marketing other than those inherent in mining operations in remote locations with poor access roads.

Domestic water can be obtained in small quantities from springs in the lower canyons. Water for mining and drilling can be stored in limited amounts in reservoirs but, during dry seasons, may have to be hauled as much as fifty miles from lower Red Canyon near the Colorado River. Dry drilling techniques are used as much as possible.

The proposed drilling would be done by an independent contractor who would furnish equipment, housing, and supplies for his own personnel. The applicant has two 15-foot house-trailers which are used as office-living quarters by Company personnel.

HISTORY AND PRODUCTION

The exploration of the White Canyon region dates from 1950. Following the success of drilling operations by the Atomic Energy Commission and private interests in upper Red Canyon, the surrounding area was prospected and a limited amount of exploratory drilling was done. Blue Canyon has been partially explored but no uranium deposits of commercial size have been discovered.

There has been no uranium production from the applicant's property or from any property in the immediate area. The nearest significant production has come from the Radium King-Ula mines about four miles southeast of the claim group(fig. 2). Total production from the Radium King-Ula mines, as of March 31, 1957, is 14,544 tons of uranium ore averaging 0.38 percent U_3O_8. The Atomic Energy Commission ore reserve section's records show an indicated reserve of about 100,000 tons, averaging 0.31 percent U_3O_8, for the above mines.

OWNERSHIP AND EXTENT

The property included in the original application consisted of 74 claims. Subsequent conferences with the applicant's representative resulting in revision of the proposed exploration indicated that a change should also be made in the boundaries of the subordinated property. The following discussion of ownership concerns only those claims necessary for the proposed program.

The claims which should be subordinated (fig. 3) are as follows:

Claims	Locators	Recording Data Date	Book	Pages
PH 7 thru 30	Strategic Minerals Exp. Co.	7-17-54	131	204-218
Thunderbird 13 thru 30	Claude Bird;Wm. Davis	8-6-54	143	309-317
Thunderbird 39 thru 44	" " " "	8-6-54	143	322-324
Dix 13 thru 28	F.C.Dixon;Jack V. Dixon	6-28-54	117	198-203
Dix 31 and 32	" " " "	6-28-54	117	204
Regal 89	" " " " and H.A.Lewis	6-15-54	109	464
Regal 93	F.C. Dixon;Jack V. Dixon, and H.A. Lewis	6-15-54	109	466
Regal 96	" " " " " " "	6-15-54	109	467
Regal 99 thru 104	" " " " " " "	6-15-54	109	469-471
Dix Regal 1 and 2	F.C.Dixon; Jack V.Dixon	6-28-54	117	207
Dix Regal 8	" " " "	6-28-54	117	209
Lane Regal 9 and 10	" " " ", and Roy Shane	9-27-54	197	359

The above location notices are recorded at the County Courthouse of San Juan County, Monticello, Utah.

The claims listed above will be subject to change since there is some question as to complete and valid coverage of the project area(fig.3). As noted in a memorandum to the Executive Officer, dated June 21, 1957, the Ph claims Nos. 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, and 29, as actually marked on the ground, are over the maximum length of 1,500 feet for a valid lode mining claim. This leaves quite a large area of unclaimed ground between the Ph claim group and Dix (or Dixon) claim group. The applicant is aware of the question as to whether or not he controls the proposed project area and, at the present time, is attempting to remedy the situation. This may involve the locating of new claims, amending of old claims, and subordinating part of the Dix group of claims.

Consents to lien will probably be required as follows:

Claims	Consent to lien from
PH 7 thru 30	(1) Mid-Continent Uranium Corporation
Thunderbird 13 thru 30 and Thunderbird 39 thru 44	(1) Copper State Drilling Co. (2) William Davis (3) Claude Bird
Dix 13 thru 28 and Dix 31 and 32	(1) F. C. Dixon (2) Jack V. Dixon
Regal 89, 93, 96 and Regal 99 thru 104	(1) F. C. Dixon (2) Jack V. Dixon (3) H. A. Lewis
Dix Regal 1, 2, and 8	(1) F. C. Dixon (2) Jack V. Dixon
Lane Regal 9 and 10	(1) F. C. Dixon (2) Jack V. Dixon (3) Roy Shane

The above is compiled from documents submitted by the applicant and from location notices recorded in San Juan County, Utah. Subsequent transactions may have reduced the number of persons holding interests in the property but no evidence of such action was submitted with the application.

PRESENT STATUS

Exploration and Development

From the date of location until July of 1956, only reconnaissance work was done on the applicant's group of claims. Access roads were extended into the area and preparations made for future exploration. In July of 1956, Mid-Continent Uranium Corporation drilled 55 holes on the

PH group; of these 55 holes, 3 were classified as mineralized on the basis of probe readings. In November of 1956, Ula Uranium, Inc., drilled 29 holes on the Thunderbird group, one on the Teton group, and 9 on the Sowbelly group. Several holes penetrated mineralized material. The holes were drilled primarily for geologic information and indicated the presence and trends of several favorable Shinarump-filled channels and scours on the property.

Mining Equipment and Other Facilities

There are no mines or mining equipment on the property as of the date of this report. The applicant has two medium-size housetrailers on the PH claim No. 4 which serve as office-living quarters for Company personnel working in the area. Roads have been built to most sections of the property to facilitate exploration of any part with the exception of portions covered by the Wingate formation.

GEOLOGY

The properties included under the DMEA 4719 application of the Ula Uranium, Inc. are in Blue Canyon, which enters Red Canyon on the north about 8 miles above the confluence of Red Canyon and the Colorado River. As may be seen on figure 2, Blue Canyon is not a straight, narrow-walled canyon, but a complex dendritic system of many small canyons averaging about 50 feet deep and occupying a broad amphitheater-like area, about 8 miles in diameter between White Canyon and Red Canyon. The dip of the beds is about 2° WSW off the west flank of the Monument upwarp.

The oldest rocks exposed in Blue Canyon include the uppermost part of the Permian Cutler formation, exposed in a few places in the lowermost part of the canyons. The overlying lower Triassic Moenkopi formation is about 170 feet thick. The Shinarump sandstone member of the upper Triassic Chinle formation ranges from a knife edge to as much as 25 feet in thickness in the centers of the channels, which will be described in greater detail below. The remaining portion of the upper Triassic Chinle formation, overlying the Shinarump sandstone member, is about 800 feet thick and forms a moderate slope. The overlying massive Wingate and Kayenta formations erode to steep-walled cliffs, over 400 feet in height, and make an effective topographic barrier between Blue Canyon and Utah State Highway 95 in White Canyon to the northeast(fig. 2). Masses of talus breccia, composed of Wingate and Kayenta sandstones, overlie the Chinle formation at many places. These masses of talus breccia may be as much as 200 feet thick.

The Shinarump sandstone member in the area of the applicant's claims in Blue Canyon is not regarded as favorable for the occurrence of uranium ore deposits. Lithofacies studies of the Shinarump sandstone member by geologists of the U.S. Geological Survey and the Atomic Energy Commission, have demonstrated that the Blue Canyon area was an environment of flood plain deposition during Shinarump time. This facies consists of interbedded mudstone, sandy siltstone, and fine silty sandstone; coarse conglomeratic sandstone with quartzite pebbles, typical of an environment of channel deposition is notably lacking.

The inferred edges of the favorable conglomeratic sandstone facies representative of channel sedimentation are shown in figure 2. These inferred limits of the channel-type sedimentation are arbitrary and do not represent a sharp contact that may be observed in the field. Rather these boundaries set off Shinarump facies that are predominantly channel-type from those facies that are predominantly flood-plain type. Channel-type conglomeratic sandstone facies do actually occur sparingly in areas shown on figure 2 as dominantly flood-plain type, and conversely, flood-plain type Shinarump sediments occur with the area shown as predominantly channel-type facies. Nearly all the productive uranium mines in the White Canyon district (fig. 2) occur within the broad belt containing the channel-type conglomeratic sandstone facies of the Shinarump member. Conversely, the chances of finding a significant uranium ore body outside the major belt of channel-type Shinarump appears remote, although exceptions to this general rule may occasionally be found; for example, the Jomac mine (DMEA 1957, Contract Idm-E 397).

ORE DEPOSITS

The Teton, Sowbelly, PH, and Thunderbird groups, as may be seen on figure 2, are largely if not entirely, in an area of flood-plain facies of the Shinarump member. As already pointed out, this area is largely unfavorable but there are exceptions to this general rule. Of the four channels observed in outcrop on the applicant's properties, only the East PH channel appears worthy of further exploration. In the sections

that follow the less significant channels will be described first, followed by a description of the channel on which exploration is proposed. Finally, a brief description is included of the Ula channel, three miles to the south of the applicant's property, where Radium King Mines has recently developed a uranium ore tonnage in excess of 100,000 tons. The Ula channel is included in the descriptions because there are some similarities between the Ula channel and the East PH channel and furthermore because the Ula channel has been extensively drilled and a large ore tonnage indicated and inferred, thereby giving the DMEA an indication of the size and shape of the possible ore target.

Sowbelly channel

The Sowbelly channel underlies mainly the Sowbelly group of claims where a number of drill holes in an irregular fence have been drilled across the channel (see section B-B', fig. 3). Results of drilling on the Sowbelly channel have been somewhat inconclusive. One drill hole, No. 49, penetrated one foot of ore containing 0.23 percent U_3O_8 by radiometric assay and several holes also penetrated weakly mineralized sandstone. This ore zone in hole 49 was 7 to 8 feet above the Moenkopi-Shinarump contact. Drill hole U1, drilled in June 1957, penetrated 1 foot of unoxidized uranium ore (0.20 percent U_3O_8) containing chalcopyrite. This ore was high on the south bank of the channel and 7 feet above the contact. Also, the weakly mineralized holes penetrated weakly mineralized sandstone or siltstone on different horizons (section B-B', fig. 3). The

westerly extension of the Sowbelly channel may have been penetrated in a mineralized drill hole on Teton 12 claim (fig. 3), in which hole 26 feet of Shinarump sandstone was reported. Eastward, the Sowbelly channel, as reported by the applicant, splits into two segments which he calls the Sowbelly North channel and the Sowbelly South channel, both of which are exposed on the outcrop (see fig. 3).

The exposure of the Sowbelly South channel on the PH 7 claim consists of rather monotonous crossbedded medium-grained sandstone and silty sandstone, the whole aggregating about 20 feet in thickness. The channel is about 75 feet wide at the lowest part and in places a coarse sandstone may be seen but without quartzite pebbles or granules. The maximum scour is about 10 feet (see also sec. B-B', fig. 3). The lowermost 1 foot of the channel, in particular the coarse sandstone, is stained black and green with copper carbonates. A sample was taken of the black-stained sandstone for spectroscopic analysis. This black sandstone was very weakly radioactive to about twice background. A spectroscopic analysis of the sample in Grand Junction proved the sample to contain 1.0 percent or more of copper, manganese, titanium, and iron. Cobalt, which the applicant's representative thought might be present, was not found.

The Sowbelly North channel was not visited by the examining team, inasmuch as the applicant's representative informed the team that this exposure was not as good as the one of the Sowbelly South channel.

West PH channel

The West PH channel (fig. 3) has about 30 feet of scour toward the local Shinarump pinchout on the south, but only about 10 feet of scour towards the Sowbelly channel on the north. Two holes, U4 and U5, were drilled 300 to 400 feet back of the rim and were barren and weakly mineralized.

The lithology of the West PH channel is somewhat more favorable than the Sowbelly South channel exposure. Pebbles and granules of quartzite appear in the lowermost unit of the West PH channel, an indication of formerly swifter currents capable of deeper scouring into the Moenkopi. The following stratigraphic section was made at the deepest scour on the West PH channel exposure:

Lithology	Thickness (feet)
sandstone, coarse, crossbedded, sparse to rare green mudstone pebbles	20
sandstone, very fine, silty, light gray	3
sandstone, coarse to very coarse with pebbles and granules of quartzite	4
Moenkopi formation, light greenish gray	1.3
Moenkopi formation, reddish brown	10+

The lowermost coarse sandstone unit filling the channel consists of a lens 4 feet thick at the thickest part and pinching out in about 40 feet in cross section on either side of its maximum thickness. This unit was stained black and green in the lower 4 inches. A sample of this black-

stained sandstone was found on spectroscopic analysis to contain 1.0 percent or more of copper, manganese, titanium, and iron. This channel exposure definitely appears somewhat more favorable than the Sowbelly South channel exposure, because of the presence of a four-foot maximum thickness of coarse sandstone with pebbles and granules of quartzite.

East PH channel

The East PH channel (fig. 3) is known in outcrop on the PH 8 claim and also by a considerable number of drill holes averaging about 1,800 feet back of the rim exposure. At the time this drilling was done, the trend of the channel was not known; in fact it is doubtful that the outcrop exposure of the East PH channel was even known. The drilling by Mid-Continent Uranium appears to have been in somewhat of a haphazard manner, but collar elevations and drill logs were kept. Cross section A-A', fig. 3, was prepared by John I. Schumacher and Associates (Strategic Minerals Exploration Company) in Grand Junction, on the supposition that the channel was trending southerly. This section, however, which trends obliquely at a low angle across the channel, shows the deepest part of the scour. As may be seen from this cross section, the south bank has about 40 feet of scour, whereas the maximum scour exposed by the drilling on the north bank is about 17 feet. Only one drill hole, No. 17, penetrated weakly mineralized sandstone. The width of the channel shown on figure 3 in the locality of these drill holes represents uncertainty in the location of the channel. F. J. Frankovich believes, from evidence in drill holes 36-41, that the channel is 400-500 feet north of the centerline of section A-A' on claim PH 13.

Slightly more than one mile easterly, another line of drill holes has penetrated the north bank and the middle of a channel, probably the East PH channel. This supposition is strengthened by the fact that one of the holes, No. 29, on the Thunderbird No. 15 claim, penetrated material of ore grade by radiometric assay, although this ore grade material was some 15 or 20 feet above the base of the Shinarump. In drill holes 5, 4, 3, 2, 1, 28, and 29 (fig. 3), extending southerly from Thunderbird 30 claim, the Shinarump sandstone thickens from about 10 feet in drill hole 5 on Thunderbird 30 claim to about 35 feet in hole nos. 1, 28, and 29. Also, from hole 5 toward hole 29, the base of the Shinarump drops about 20 feet and rises slightly toward the southerly bank in hole 29. Hence, it seems rather definite that the north part of a Shinarump channel has been discovered by this drilling. This channel, moreover, lies on the easterly projection of the East PH channel. The trend of the East PH channel shown on figure 3, is similar to that deduced by Frank J. Frankovich, geologist representing the applicant, who made a structure contour map based on the available drill hole data.

The section observed by the examining team at the rim exposure of the East PH channel on PH 8 claim, is by far the best and resembles somewhat the channel exposure of the productive Ula channel, 3 miles to the south, which will be described below. The following section was observed at the place of maximum scour on the exposure of the East PH channel on the PH 8 claim:

Lithology	Thickness (feet)
sandstone, coarse to very coarse, sparse quartzite pebbles up to 3/4 inch	13.0
sandstone and siltstone, crossbedded	3.5
sandstone, medium to coarse, rare to sparse quartzite pebbles up to 3/4 inch	4.0
sandstone, very fine, and siltstone	2.5
sandstone, conglomeratic, very coarse quartzite pebbles up to 1 inch diameter; green and blue copper carbonates and red hematite stain in lower 2 inches along contact. Radioactivity about twice background	8.5
Moenkopi formation, greenish gray grading down to yellow	4.0
Moenkopi formation, red	10.+

The conglomeratic sandstone lens is exposed in cross section for about 150 feet across the bottom of the channel. At each bank this sandstone lens is cut out by the rising contact with the Moenkopi formation. At least 30 feet of scour was observable in the south bank. As the rim was walked toward the north bank of the channel, all units except the uppermost sandstone unit or the cap rock, were progressively cut out by the rising contact of the Moenkopi formation, or equivalent to a total scour of about 20 feet.

Although only weak evidence of uranium mineralization has been found in the East PH channel, the channel exposure closely resembles the ore-bearing Ula channel as seen in outcrop three miles to the south.

Ula channel

The Ula channel contains the largest ore reserve of any in the White Canyon district, excepting possibly the Happy Jack mine. The Ula channel is very straight and is known for a linear extent of at least 2 miles. Four productive mines are strung out along the Ula channel for about 1-1/2 miles (see fig. 2). These are the West Hersey, Hersey, Dermis Fraction, and the Allen No. 2 mines. Through the courtesy of Philip H. Dodd, geologist of the Atomic Energy Commission, the examining team was able to procure an ore reserve map of part of the Ula channel, including the Hersey (No. 2 incline) and the Dermis Fraction (Radium King incline No.1) mines. This map is shown in figure 4 (for location see fig. 2), and shows the relationship of the ore reserve blocks to the outcrop of the channel visited by the examining team. The most impressive feature of the Ula channel outcrop, shown in figure 4, was the large quartzite cobbles in the conglomerate composing the Shinarump. In no other channel has the examining team seen cobbles in the Shinarump up to 3 inches in diameter. The common range for Shinarump pebbles in the Red Canyon area is from about 1/2 inch to 1 inch. Moreover, copper carbonates and black oxides stained the Shinarump conglomerate for 2 feet above its contact with the Moenkopi formation. Radioactivity was several times background through the lower few feet of the channel outcrop.

Another striking feature, shown on figure 4, is the long sinuous trend of the ore back from the outcrop. This ore band may be nearer one bank of the channel than the other, or may be in the center, but its average width is only about 60 feet and for most of its length, less

than 100 feet. The examining team wishes to emphasize with this illustration that a DMEA drilling program with drill holes spaced 100 feet along drill fences might easily miss such an ore body. Indeed, the Foley Brothers Uranium Co. is reported to have spent about $300,000 in an exploration program on the Ula channel. At the end of the drilling program, they concluded that there was no commercial ore body in the Ula channel and turned the property back to Ula Uranium, Inc., who subsequently leased the property to Radium King Mines. Foley Brothers Uranium Co. are reported to have drilled one hole that penetrated 16 feet of ore assaying 2.0 percent U_3O_8, but they threw out the assay as spurious.

Figure 4 may illustrate one other feature, namely leaching of uranium near the outcrop, a process which is believed to be significant by some AEC geologists. There are several examples in the Red Canyon district, of channels that were weakly mineralized for several hundred feet back of the outcrop but eventually produced ore as much as 1,500 to 2,000 feet back from the outcrop. Evidence of leaching of uranium is unmistakable, but the question arises as to what extent has leaching of uranium actually removed entire ore bodies. There are also many examples of ore bodies that are exposed in outcrop; for example, the Happy Jack mine. The Markey channel (DMEA 4392) contains a sizable ore body outlined by private and DMEA drilling (Contract Idm-E 1050) 2,000 feet back from the outcrop, but it should be remembered that the Anaconda Company mined a 1,000-ton ore body from the rim. Possibly the solution is a compromise between the leaching theory and a random chance of intersection, for the average channel

is ore-bearing through only a small portion of its length and thereby the chances of an outcrop intersecting an ore body is not likely. Further drilling and underground development are needed on the Ula channel near the outcrop (fig. 4) to demonstrate whether or not leaching has removed the ore near the outcrop.

ORE RESERVES

There are no known ore reserves on any of the claims submitted under the application. The ore reserves, as of April 1, 1957, in approximately 1-1/2 miles of the Ula channel (of which about half a mile has been removed by erosion) are tabulated below (courtesy of the AEC ore reserves section).

Mine or claim	Indicated ore		Inferred ore	
	Tons	% U_3O_8	Tons	% U_3O_8
Allen No. 2	7,235	0.28	none	
Hersey and Dermis Fraction	44,155	0.33	57,800	0.33
West Hersey	55,178	0.30	71,600	0.30
Total	106,568	0.31	129,400	0.31

PROPOSED EXPLORATION

The applicant's first proposal consisted of a total of 26,700 feet of core and non-core drilling, to be done in three stages at an estimated cost of $63,948.00. This proposed program was replaced by an alternate program upon evaluation of drill-hole data and subsequent geologic mapping by the applicant. The revised program was received on June 10, 1957

and was based on conferences between the applicant's geologist and the DMEA examining team. It consists of an estimated 30,260 feet of non-core drilling and 240 feet of core drilling in 165 holes. In essence, the applicant's program consists of fences of drill-holes spaced along projected Shinarump-filled channels. The proposed drilling would be divided into stages, and in places, further into phases. The division would not be based on drill hole spacing but rather on groups of profiles across the inferred channels. Each profile in each stage would have in it holes on 200-, 100-, and 50-foot centers. In each of the three areas the first stage of drilling would consist of three or four profiles to establish the existence and trend of a channel beyond the outcrop. Stage II would trace the channel beyond the zone of oxidation and test it for uranium mineralization. Stage III would apply only to the East PH channel and test it further beyond the zone of leaching.

Some revision of the above program was considered in order and discussed with the applicant's geologist. The following program resulted from the conference and is recommended for approval:

The only channel on which there appears to be a reasonable chance for a discovery of a significant ore body is the East PH channel. The applicant's drilling proposals on the West PH channel and the Sowbelly channel, are therefore rejected. Although considerable drilling has been done on the East PH channel with negative results, most of this drilling has been concentrated in one portion of the channel, about 1,800 feet east of the outcrop. It is proposed to explore the East PH

channel from the area of extensive drilling easterly toward the area of channel-type conglomeratic sandstone facies of the Shinarump. The applicant's proposed drilling fences A, B, and C (not shown on figure 3) between the rim exposure of the East PH channel and the area of extensive drilling on PH 13 claim are rejected, because the examining team feels that there is little chance for a significant discovery between the rim and this area of negative drilling, 2,000 feet back from the rim.

A large portion of the channel remains unexplored between PH 13 claim, the area of most extensive drilling, and Thunderbird 15 claim, where drill hole 29 penetrated ore-bearing material. Drilling fences D, E, F, H, and I are proposed to test for the presence of the East PH channel in this area (see fig. 3). These fences are essentially those proposed by the applicant's representatives but have been moved slightly to take advantage of the gullies, thereby avoiding thick talus breccia composed of Wingate sandstone blocks. The applicant's drill fence G has been eliminated, because it was too close to fence F. Fence J (fig. 3) consists of 3 drill holes, 200, 400, and 600 feet respectively, south of drill hole 28 to test the south bank of the east PH channel. Drill fence K is revised slightly from the applicant's location. Drill fences L and M have been added by the examining team to take advantage of two gullies that cross the projected easterly trend of the East PH channel and would further explore the channel toward the area of favorable Shinarump sandstone.

The examining team can not vouch for the accuracy of figure 3, in relation to drill holes, drainage, and claim boundaries; figure 3 was compiled from several sources and certain discrepancies between these sources were noted during the compilation. The drill fences are intended to be located with respect to stream drainages as shown on figure 3, rather than to any claim markers.

The proposed exploration program is divided into three stages, each stage to be completed before commencing the next stage. The stages are described as follows:

Stage I consists of two fences of holes, Fence D and Fence J. The location of these fences shall be fixed approximately as shown on figure 3 but the location of holes in any specific fence is not fixed with the exception of holes nos. J-1 and J-2. Drilling is to proceed outward from holes in the middle portion of the fences. The first two holes in fence J should be drilled at the locations shown (fig. 3)--the third hole may not be needed. This procedure is deemed necessary to locate the inferred channel and incorporates holes previously drilled by the applicant. Fence D is also designed to outline the true location of the projected channel and the operator should be permitted, without prior approval, to shift hole locations from one end of the fence to the other in order to bracket the channel.

The procedure to be followed in completing a fence of drill holes is described below. For the sake of clarity, the three steps are designated phases (a), (b), and (c). Prior Government approval should not be required for these phases.

Phase (a) The first hole is located as near to the center of the projected channel as possible. Subsequent holes are spaced along the fence at 200-foot intervals to roughly define the position of the channel. No more than six non-core holes should be used for this part of the fence. Lithologic and radiometric logs of the holes will indicate which hole penetrated the low point of the channel.

Phase (b) Utilizing the information gained by the holes on 200-foot centers, two holes are drilled within the fence at offset locations, 100 feet on either side of the phase (a) hole that penetrated the Shinarump-Moenkopi contact at the lowest elevation. These holes would be drilled non-core to the top of the Shinarump member, then core-drilled until at least three feet of red Moenkopi mudstone had been penetrated. It is estimated that an average of 50 feet of core and 250 feet of non-core drilling would be required for each hole. The purpose of these holes is to test the Shinarump member for uranium mineralization and to further delineate the bottom of the channel. Under certain conditions, only one of these offset holes may be necessary.

Phase (c) The third and last step in this method is to drill two 50-foot offset holes within the fence to further test the lowest point in the channel profile for uranium mineralization. These holes would, of course, offset the hole that penetrated the lowest point in the Shinarump-Moenkopi contact. They would be drilled non-core to the top of the Shinarump, then cored through the potential ore-bearing member and a short distance into the Moenkopi formation. Again, only one hole may be needed to give adequate information as to ore deposits in the channel.

The examining team is aware of the objections to 50-foot offsets where drilling depths average as much as 300 feet. However, following the example of private drilling on the Ula channel, it becomes obvious that drill fences with 100-foot spacing could very easily miss the ore-bearing part of a Shinarump channel, which is likely to be long and sinuous. A staggered grid is not feasible in the present case because of steep topography, Wingate talus breccia, and uncertainties in detail regarding the trend of the channel.

Two 50-foot offsets per drill profile would locate the lowest point in the channel and might place one or two holes in ore, if any is present in that portion of the channel. In this case, the 50-foot offsets should not be regarded as "blocking out" ore. It should be emphasized that two 50-foot offset holes per drill fence would not result in anything approaching a drill hole grid on 50-foot centers. If two holes are drilled at 50-foot offset of previous DMEA holes in each of the nine fences, averaging 800 feet apart, the equivalent square grid pattern over the portion of the channel explored would equal the square root of $(50x800)ft^2$ or an equivalent 200-foot square grid. By concentrating a few drill holes close together along several fences, it is believed that maximum information will be obtained concerning the ore potentialities of an inferred length of channel totaling almost two miles.

An important consideration in drilling 50-foot offset holes is the possibility of "wandering" of drill holes at the depth of the target. However, most drilling contractors have devices and special drilling methods

to minimize the effect this may have on the accuracy of results obtained.

Stage II will depend on evaluation of the results obtained from the completed fences in Stage I and would require Government approval before commencing. The first stage holes should indicate the trend of the channel being explored, and further projections of the channel are to be tested with Stage II drill fences. In the second stage, Fences E, I, and K (fig. 3) would be completed, the procedure for each fence being the same as that described under Stage I. Results obtained by Stage II drilling will extend the known location of the channel being explored and indicate whether or not to continue the program with a third and final stage of exploration.

In Stage III, Fences F, H, L, and M (fig. 3) would be completed, each fence again being drilled according to the procedure described under Stage I. The completion of this stage will end the program and the channel will have been adequately explored.

Coring in phases (b) and (c) should commence near the top of the Shinarump formation. All holes drilled during the project should bottom in not more than ten feet of red Moenkopi mudstone. The usual contract specifications for a minimum of BX size core, recovery, splitting and storage of core, requirements for hole probing by the operator, submission of geologic and radiometric logs, and employment of a full-time supervisor-geologist should be incorporated.

SUMMARY OF DRILLING FOOTAGES

Drill fence	Phase	No. of holes	Aver. hole depth	Core footage	Plug footage	Total footage
			Stage I			
D	a	6	200	none	1,200	1,200
D	b	2	200	100	300	400
D	c	2	200	100	300	400
J	a	3	300	none	900	900
J	b	2	300	100	500	600
J	c	2	300	100	500	600
Total Stage I		17	241	400	3,700	4,100
			Stage II			
E	a	5	250	none	1,250	1,250
E	b	2	250	100	400	500
E	c	2	250	100	400	500
I	a	5	300	none	1,500	1,500
I	b	2	300	100	500	600
I	c	2	300	100	500	600
K	a	4	300	none	1,200	1,200
K	b	2	300	100	500	600
K	c	2	300	100	500	600
Total Stage II		26	283	600	6,750	7,350
			Stage III			
F	a	5	250	none	1,250	1,250
F	b	2	250	100	400	500
F	c	2	250	100	400	500
H	a	6	250	none	1,500	1,500
H	b	2	250	100	400	500
H	c	2	250	100	400	500
L	a	5	350	none	1,750	1,750
L	b	2	350	100	600	700
L	c	2	350	100	600	600
M	a	5	400	none	2,000	2,000
M	b	2	400	100	700	800
M	c	2	400	100	700	800
Total Stage III		37	311	800	10,700	11,500

Total for project:

	No. of Holes	Aver. Depth	Core footage	Plug footage	Total footage
Stage I	17	241	400	3,700	4,100
Stage II	26	283	600	6,750	7,350
Stage III	37	311	800	10,700	11,500
Totals	80	287	1,800	21,150	22,950

ESTIMATED COSTS OF PROPOSED PROGRAM

The following cost estimate is based on the bid by Scott Brothers Drilling Co. which gives the lowest overall cost. The bid by Sprague and Henwood, Inc. is very nearly the same as the above bid except for the charge for standby time. The prices used in the computation of estimated costs are as follows:

	Non-core	Core
Surface to 200 feet	$1.50	$3.50
200 ft. to 400 ft.	1.75	3.85
Standby time	$12.50 per hour	

Stage I - 17 holes averaging 241 feet in depth

Estimated time for completion - 1.0 month

Basis - 1 drill rig - 1 shift per day

25 days per month - 170 feet per day

(1) Independent Contracts

Drilling, non-core		
0-200 - 3,700 ft at $1.50/ft	$5,550.00	
200-400 - none	0.00	
Drilling, core		
0-200 - 72 ft at $3.50/ft.	252.00	
200-400 - 328 ft at $3.85/ft	1,262.80	
Standby for probing - 9 hrs at $12.50/hr	112.50	
Bulldozing - 50 hrs at $12.00/hr	600.00	
Total Independent Contracts		$7,777.30

(2) Labor, Supervision, and Technical Services

Geological and engineering services		
1 month at $750/mo.	$ 750.00	
Total Labor, Supervision, etc.		750.00

(3) Operating Materials and Supplies

Office and field supplies		
1 month at $100/mo.	$ 100.00	
Total Materials and Supplies		100.00

(4) Operating Equipment

Depreciation			
1 jeep valued at	$1,800.00		
1 hole probing unit	800.00		
	$2,600.00		
Depreciation on 60 months basis			
$\frac{2600}{60}$ = $43.33 per month			
Depreciation for 1 month		$ 43.33	
Total Operating Equipment			43.33

(7) Miscellaneous

Direct accounting costs at $50/mo.	$ 50.00	
Payroll taxes and ins. 8% of $750	60.00	
Chemical analysis for U_3O_8		
20 samples at $3.50 each	70.00	
Core boxes-40 at $1.25 each	50.00	
Total Miscellaneous		230.00

Total estimated cost of Stage I $8,900.63

Incidental allowance (Total costs less independent contracts, core boxes, and chemical analyses)

$\frac{\$1,053.33}{4100 \text{ ft.}}$ = $0.26 per foot

Stage II - 26 holes averaging 283 feet in depth

Estimated time for completion - 1.75 months

Basis - 1 drill rig - 1 shift per day

25 days per month - 170 feet per day

(1) Independent Contracts

Drilling, non-core		
0-200 - 5,200 ft at $1.50/ft.	$7,800.00	
200-400 - 1,550 ft at $1.75/ft.	2,712.50	
Drilling, core		
0-200 - none	0.00	
200-400 - 600 ft at $3.85/ft.	2,310.00	
Standby for probing - 13 hrs. at $12.50/hr	162.50	
Bulldozing - 75 hrs at $12.00/hr	900.00	
Total Independent Contracts		$13,885.00

(7) Miscellaneous

Chemical analyses for U_3O_8		
30 samples at $3.50 each	$ 105.00	
Core boxes-60 at $1.25 each	75.00	
Total Miscellaneous		180.00

Fixed Unit Costs (All costs less independent contracts, chemical analyses, and core boxes.)

Incidental allowance		
7,350 ft at $0.26/ft.	$1,911.00	
Total Fixed Unit Costs		$ 1,911.00
Total estimated cost of Stage II		$15,976.00

Stage III - 37 holes averaging 311 feet in depth

Estimated time for completion - 2.75 months

Basis - 1 drill rig - 1 shift per day

25 days per month - 170 feet per day

(1) Independent Contracts

Drilling, non-core		
0-200 - 7,400 ft at $1.50/ft.	$11,100.00	
200-400 - 3,300 ft at $1.75/ft.	5,775.00	
Drilling, Core		
0-200 - none	0.00	
200-400 - 800 ft at $3.85/ft.	3,080.00	
Standby for probing - 20 hrs at $12.50/hr	250.00	
Bulldozing - 100 hrs at $12.00/hr	1,200.00	
Total Independent Contracts		$21,405.00

(7) Miscellaneous

Chemical analyses for U_3O_8 40 samples at $3.50 each	$ 140.00	
Core boxes - 80 boxes at $1.25 each	100.00	
Total Miscellaneous		240.00

Fixed Unit Costs

Incidental allowance 11,500 ft at $0.26/ft.	$ 2,990.00	
Total Fixed Unit Costs		$ 2,990.00

Total estimated cost of Stage III $24,635.00

Summary of Proposed Program

	No. of Holes	Aver. Depth	Core feet	Plug bit	Total feet	Overall cost
Stage I	17	241	400	3,700	4,100	$ 8,900.63
Stage II	26	283	600	6,750	7,350	15,976.00
Stage III	37	311	800	10,700	11,500	24,635.00
Total	80	287	1,800	21,150	22,950	$49,511.63

Average overall cost per foot $ 2.157

Government participation - 75 percent or $37,133.72

Estimated time for completion 5½ months

CONCLUSIONS AND RECOMMENDATIONS

Outcrop and subsurface data indicate the presence of a southeasterly trending channel, which the applicant calls the "East PH channel," at the base of the Shinarump member of the Chinle formation. Other channels are noted on the project area, but in the opinion of the examining team, the East PH channel is the only one on which there appears to be a reasonable chance for the discovery of a significant ore body. The East PH channel outcrops on the PH 8 claim and has also been located by a considerable number of drill holes averaging about 1,800 feet back of the rim exposure. At the time the drilling was done, the trend of the channel was not known; in fact it appears doubtful that the correlation between the outcrop exposure and the channel delineated by the drill holes was suspected. The holes, although located somewhat haphazardly, indicate the presence of a channel which is weakly mineralized. Slightly more than one mile easterly, another line of drill holes delineate a possible projection of the East PH chanel. One of the holes penetrated material of ore grade by radiometric assay.

The results of the above drilling, information given by the applicant and AEC personnel, and physical inspection of the property, indicate, in the opinion of the examining team, that the East PH channel has possibilities of containing uranium ore deposits comparable in size and characteristics to the Ula channel three miles to the south.

Stage I drilling would consist of a maximum of 17 holes in 2 fences of holes as shown on figure 3. Not all Stage I holes would necessarily be drilled.

Recommended Stage II drilling would consist of a maximum of 26 holes in 3 fences to further define and explore the inferred East PH channel. Prior Government approval for Stage II should be required.

Stage III, as recommended by the examining team, would test the remainder of the East PH channel where known on the applicant's property. A maximum of 37 holes in 4 fences would be required to complete this stage and end the project. Prior Government approval for Stage III should be required.

Recommended Stage I drilling should be adequate to delineate the channel, test that portion of it for mineralization, and indicate the trend. The drill fences recommended for Stages II and III would further define and test the channel over a length of about two miles. Flexibility of contract terms to permit a limited latitude in designating hole locations as explained in the section on proposed exploration would permit the fences to be shifted along the line of the fence as required. This provision is very important in order to define and test the inferred channel as efficiently as possible. The examining team believes that the applicant's supervisor-geologist can competently carry out such a program. The contract should stipulate that the supervisor-geologist be physically present on the project while the drills are operating.

The location of fences, hole spacing within a fence, and a maximum number of holes in any specific fence should be fixed by contract terms, but the operator should be free to designate the drilling sites in each fence on the basis of results of drilling up to that point. This provision should apply to all three stages of exploration.

It is recommended that a three-stage project requiring a maximum of 21,150 feet of non-core drilling and 1,800 feet of core drilling in 80 holes be approved at an estimated cost of $49,511.63. Government participation at 75 percent would be $37,133.72.

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JULY 1957
DOCKET 4719

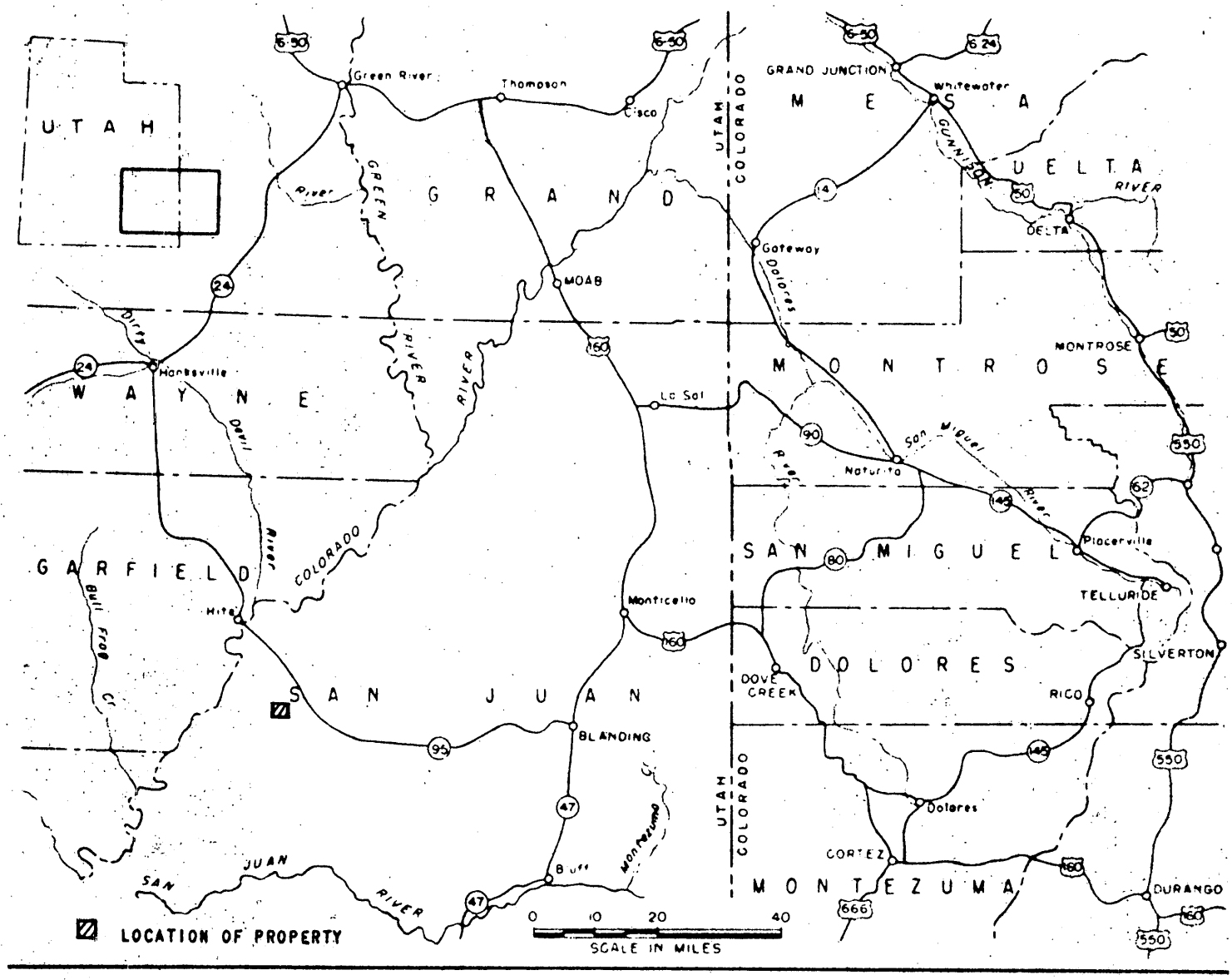

FIGURE 1.--LOCATION MAP; DIX, THUNDERBIRD, AND PHEASANT GROUPS, VULA URANIUM, INC.; SAN JUAN COUNTY, UTAH.

EXTRA COPY
DMEA
RECEIVED AUG 12 1957

DATE	INITIALS	CODE

MINERAL DEPOSITS
IN REPLY REFER TO:
DMEA
RECEIVED
JUN 24 1957
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
DMEA GEOLOGICAL SURVEY
DEPARTMENT OF THE INTERIOR
P. O. Box 360
JUN 25 1957
REGION III
DENVER, COLORADO

EXTRA COPY
DMEA
RECEIVED AUG 12 1957

DATE	INITIALS	CODE

June 21, 1957

Memorandum

To: W. H. King, Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman EMH
J. William Hasler JWH

From: F. M. Byers, Jr.,
H. F. Robertson

Subject: approval report, docket ~~DMEA 4719 (uranium)~~, Teton, Sowbelly, PH, Thunderbird claims, Ula Uranium, Inc., San Juan County, Utah

Please refer to E. N. Harshman's memorandum dated April 29, on the subject docket. In an attempt to contact the applicant's geologist, we learned from Mr. Darrow Thompson, president of Ula Uranium, Inc., that Ula has leased claims between the Shinarump rim and the northeast border of the PH group to the southwest. We believe a limited drilling program might be justified under DMEA contract on the east PH channel, which extends from the Shinarump rim on PH 8 claim, east-southeasterly across the PH group, thence probably between the PH group and the Shinarump rim; and finally extends easterly across the applicant's Thunderbird group. (Compare claim map, 1 inch = 400 feet, with their geologic map, 1 inch = 200 feet; unfortunately very few claim locations given on geologic map.)

We recommend that the Teton and Sowbelly claim groups and PH claims 1 through 6 be excluded from subordination in any DMEA contract, inasmuch as we are recommending no work on those claims and there is very little likelihood that any production will ever come from these claims.

It has also come to our attention that the block of PH claims nearest the Shinarump rim are over the legal length, some by about several hundred feet; thus possibly as much as 2,000 feet along the length of the east PH channel may cross ground not subordinated by legal claims of the applicant.

We, therefore, recommend that the applicant be requested to subordinate additional Ula-leased claims between the present legal northeast boundary of the PH group and the Shinarump rim to the north, and that Consent to Lien forms be executed for these claims, as well as PH 7 through 30 claims and the Thunderbird group.

F. M. Byers Jr.
F. M. Byers, Jr.,
Geologist

(for) H. F. Robertson,
Engineer

FMB/mlr

1. (a) Ula Uranium, Inc.
216 Luhrs Bldg.
Phoenix, Arizona

(b) Corporation (Colorado)

(c) Darrow Thompson, President
216 Luhrs Bldg.
Phoenix, Arizona

Henry A. Smith, Vice President
399 Western Drive
Richmond, California

Marvin Henry, Secretary-Treasurer
Luhrs Bldg. Arcade
Phoenix, Arizona

3. (a) See attached legal documents.

(b) None

(c) Sowbelly Group - Owner
Teton Group - 1/2 ownership, lease from Mid-Continent to Ula on remaining 1/2.
P.H. Group - Lease from Mid-Continent
Thunderbird Group - 1/2 ownership, balance under operating agreement to Copper State Drilling Company.

(d) See 3 c.

(e) Outstanding royalty on Sowbelly Group,
2½% Claude Bird.
2½% William Davis.

(f) See attached legal documents for book and page number.

5. (a) Uranium

(b) See attached report.

(d) Darrow Thompson, President, Ula Uranium, Inc., 216 Luhrs Bldg., Phoenix, Arizona

5 years - Practicing law in Phoenix, Arizona
2 years - In uranium business - President of Ula Uranium, Inc., and other interests.

FORM MF-103

Ula Uranium, Inc.
216 Luhrs Bldg.
Phoenix, Arizona

Mr. Frankovich- Geologist

4 years - Experience in mining and with oil companies.
3 years - Experience(AEC) - Geologic reconnaissance of foreign and domestic uranium deposits.
2 years - Private work with uranium companies.

6. Estimate of Costs

All costs are computed on the basis of the exploration project continuing for four months:

		Total Cost	Cost per ft.
(a)	Independent Contracts.		
	(1) Drilling 26,700 feet	$ 44,150.00	$1.653
	(2) Bulldozer (D-7 or equivalent). 480 hours at $12/hr plus moving expense	6,060.00	0.227
(b)	Engineering and Geology		
	Engineer or Geologist, 4 mos. at $750/mo Sampler, 4 mos at $450/mo Subsistence	5,400.00	0.202
(c)	Assaying and Probing	1,085.00	0.041
(d)	Vehicle Use	960.00	0.036
(e)	None		
(f)	None		
(g)	Accounting, 4 mos. at $120/mo	480.00	0.018
(h)	Contingencies at 10%	5,813.00	0.218
	TOTAL	$63,948.00	$2.395

7. (a) Yes

(b) Money

LEGAL DESCRIPTION OF CLAIMS

		BOOK	PAGE
Sowbelly No.	1	143	330
	2	143	330
	3	143	331
	4	143	331
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	6	143	332
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Thunderbird No.	13	143	309
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	15	143	310
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	41	143	323
	42	143	323
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Tarion No.	1	127	144
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Continued - LEGAL DESCRIPTION OF CLAIMS

	BOOK	PAGE
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30	131	218

THUNDERBIRD P.H. SOMBELLY

AND TETON GROUPS

in

The Blue Canyon Fork of Red Canyon

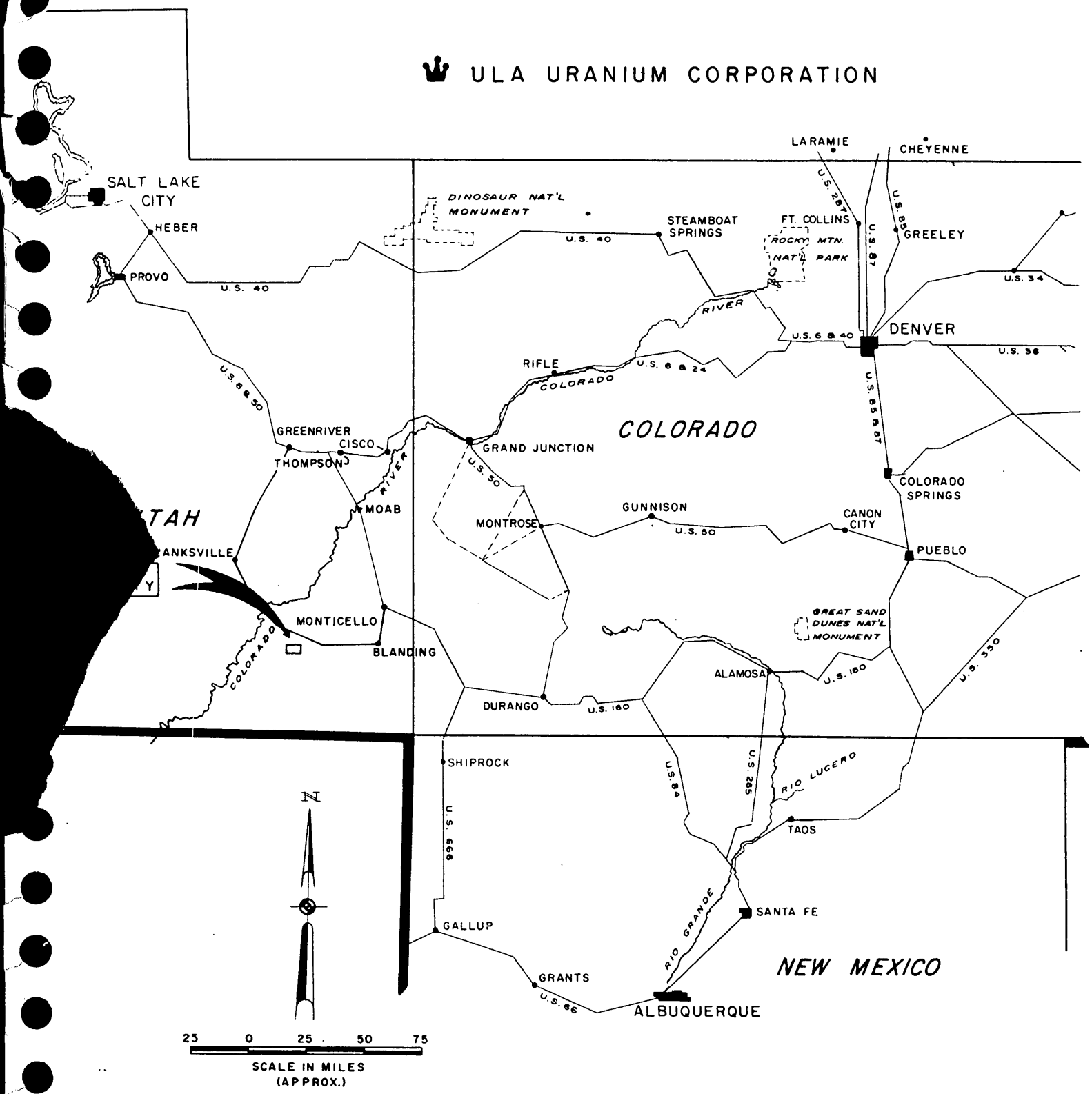
White Canyon Mining District

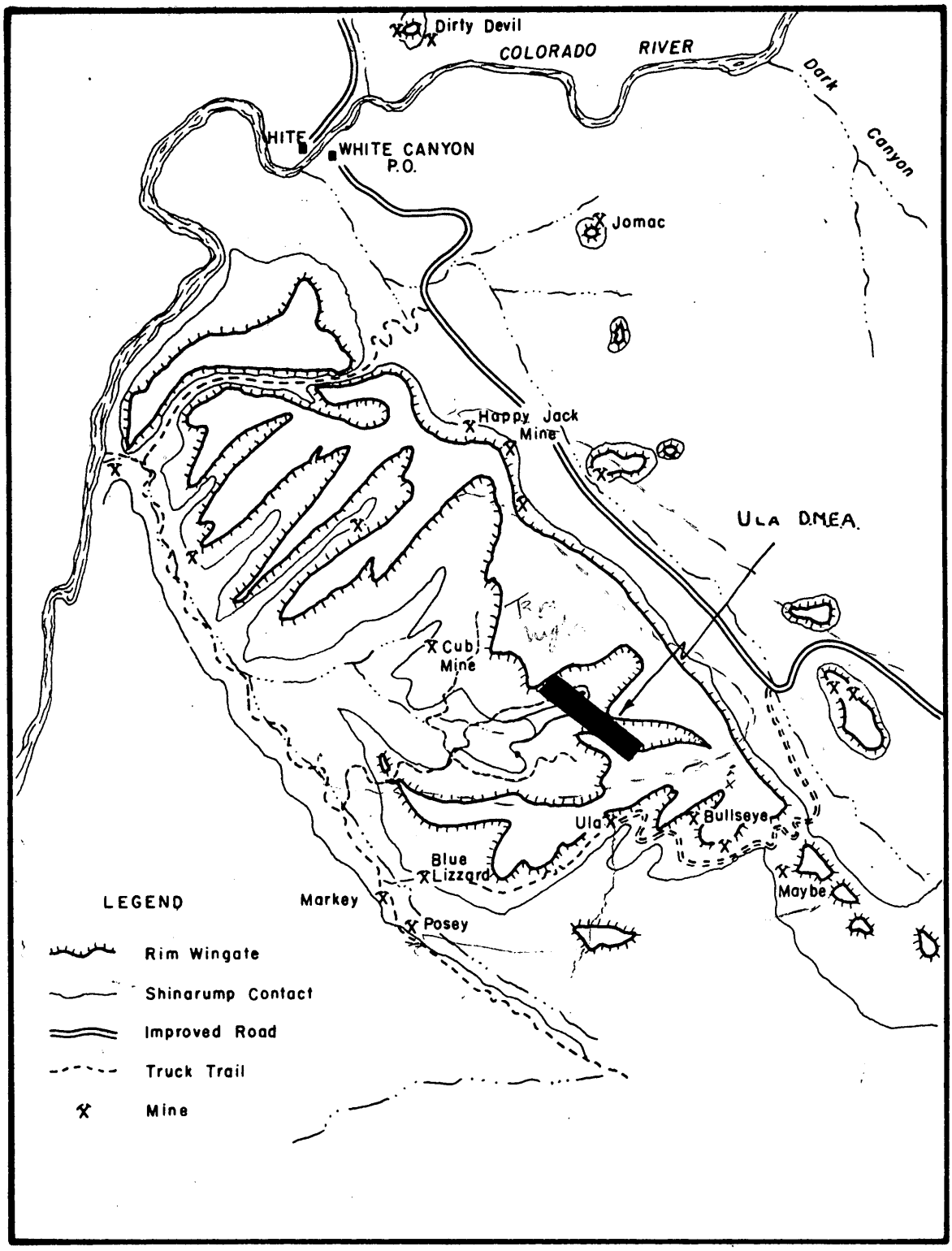
San Juan County, Utah

Ula Uranium, Inc.

JOHN I. SCHUMACHER
Registered Mining Engineer
March 22, 1957

ULA URANIUM CORPORATION





INDEX MAP RED-WHITE CANYON AREA

SAN JUAN COUNTY, UTAH

Ula Uranium, Inc.
216 Luhrs Bldg.
Phoenix, Arizona

Introduction

The property described in this report consist of 74 unpatented mining claims in the Blue Canyon Fork of Red Canyon, San Juan County, Utah. Red Canyon area is in the White Canyon Mining District. The included claims are controlled by Ula Uranium, Inc. either by ownership or lease.

Although the White Canyon Mining District has several large producing mines, the Red Canyon area and particularly the Blue Canyon Fork is relatively undeveloped due mainly to its remoteness and lack of good access roads. Practically all the exploration work and road construction in the Blue Canyon Fork has been done by Ula Uranium, Inc.

Location & Physiography

These groups of claims lie in T 36 S, R 15 E, (Sections Unsurveyed) S.L.M. Although this township has not as yet been recognized as being surveyed, field teams of the Bureau of Land Management have established the sections corners on the state owned land and it appears that these claims fall principally in Sections 21, 22, 23, 24, 26, 27 of this township.

The claims are approximately 80 miles southwest of Blanding, Utah and access to them is by 45 miles of Utah Highway 95 to Red House Springs. At the Red House Springs, the road proceeds down Red Canyon and approximately 6 miles beyond the Blue Lizard Mine, turns out of Red Canyon at the Chocolate Drop into Blue Canyon. The road beyond Red House Springs is primarily a truck trail. The newly completed access road to the Ula-Radium King mine is being improved to the Blue Lizard mine and should shorten the distance considerably to the Blue Canyon area.

Blue Canyon is typical of the terrain in the White Canyon Mining District, however, the general relief of the terrain in the drilling area is somewhat less severe in that the ore horizon more nearly conforms to a

Form MF-103

Ula Uranium, Inc.
216 Luhrs Bldg.
Phoenix, Arizona

Government Participation at 75%	$47,961.00
Ula Uranium, Inc. at 25%	$15,987.00
Total	$63,948.00

(continued - Location & Physiography)

dip slope, and the canyons are not as deep. Although the Chinle forms small rugged canyons, the Moenkopi benches generally make a good location for access roads. The elevation of the claims vary from 5,000 to 6,000 feet and some scrub pinon and juniper grows on the upper benches. Mining supplies and equipment are available in Monticello, Utah, Moab, Utah and Grand Junction, Colorado. Monticello is approximately 107 miles; Moab 164 miles, and Grand Junction 284 miles distance.

Property Title

The four groups of claims included herein are controlled as follows by Ula Uranium, Inc.

Sowbelly Group - Owned by Ula Uranium, Inc.

P. M. Group - This group of claims is leased from Mid-Continent Uranium Corp. (Copy of lease attached).

Thunderbird Group - 1/2 interest owned by Ula Uranium, Inc. Remaining 1/2 owned by Copper State Drilling Company, 216 Lhrs Building, Phoenix, Arizona, % Mr. Darrow Thompson. Ula Uranium, Inc. has granted an operating agreement to Copper State on this group of claims. However, because of the close association it appears to be more logical for Ula to apply for the exploration work.

Teton Group - Ula Uranium, Inc. owns 1/2 interest and the remaining 1/2 is owned by Mid-Continent Uranium Corporation. Mid-Continent's interest is leased to Ula Uranium. (Copy of agreement attached).

General Geology

Blue Canyon area is on the southwest dipping slope of the monument uplift. The beds dip approximately 45 degrees southwest about 1/2 to 1½ degrees. Small structural features such as faults and minor

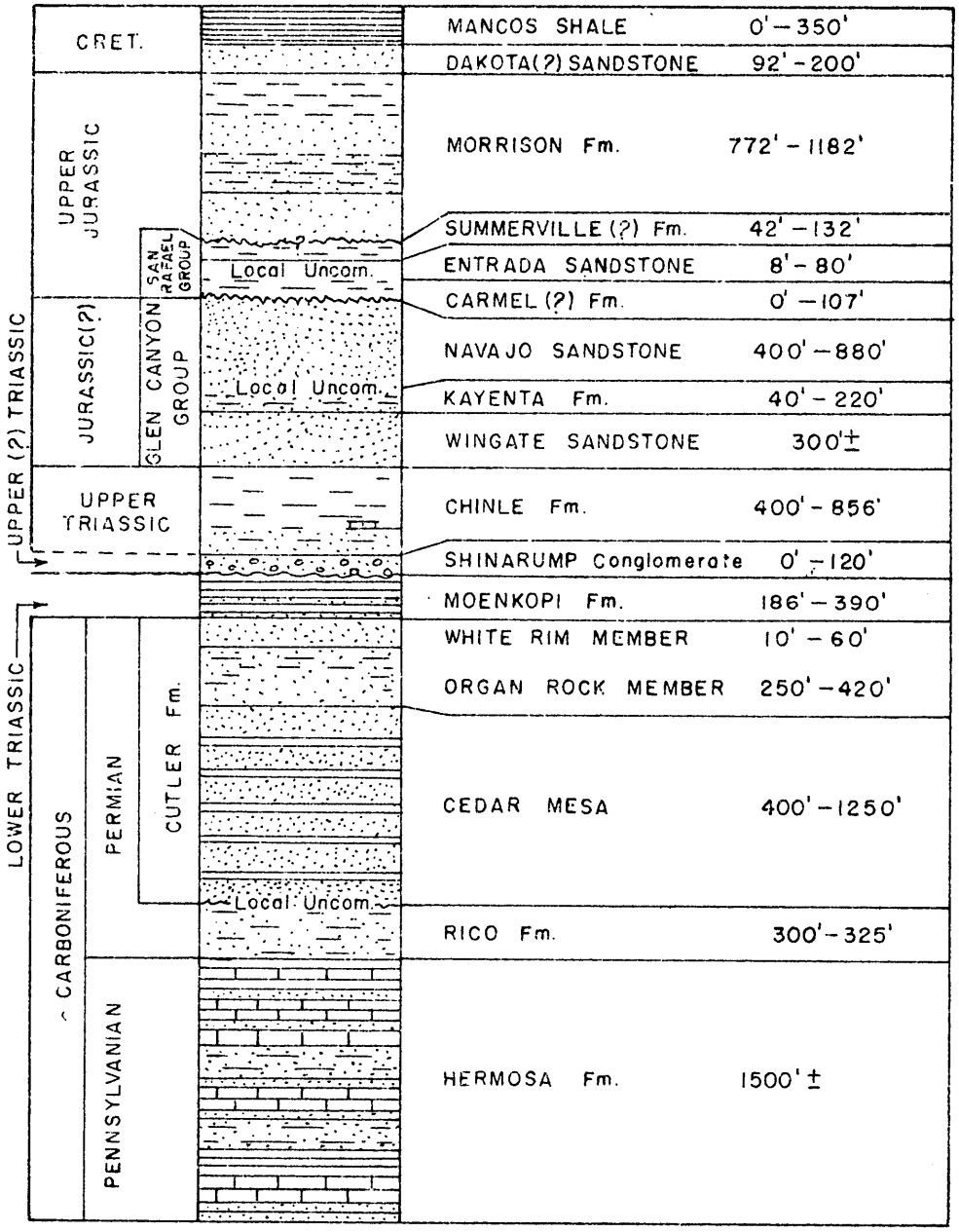
(continued - General Geology)

domal uplifts appear to have played a small part in deposition of the ore. Formations exposed (See attached sketch) range from the Mancos formation of the Cretaceous Age in the northwest part of White Canyon, to the Hermosa formation of Pennsylvania Age in the deep canyon of the Colorado River. The main ore bearing formation is the Shinarump conglomerate of upper Triassic Age which lies unconformably on the Moenkopi. The Shinarump formation consists primarily of intermittent sand lenses and fingers of mudstone and conglomerate. The conglomerate particularly predominates in the scours which have eroded into the Moenkopi. The thickness of the Shinarump varies from a thin feather edge in the southwestern part of the district up to 40 to 50 feet of thickness along the Mossback Ridge. The apparent channel pattern is to the northwest from the area around the Maybe mine through the Ula-Radium King mine and continues on to the Happy Jack mine. These scours, favorable for mineral deposition, are characterized by their coarse conglomeratic lenses, mudstones, carbon trash, secondary copper mineralization, and altered Moenkopi. The ore generally occurs along the edges of the scours particularly where the mudstone has interfingered with the conglomerate or sandstone to form small stratographic traps.

Previous Exploration

Previous to July of 1956, only reconnaissance work had been done in the area of these claims. In July of 1956, Mid-Continent Uranium Corp. drilled 55 holes on the P.H. Group; of these 55 holes, 3 were classified as mineralized on the basis of probe readings. It appeared that these holes

TAKEN FROM PRELIMINARY REPORT ON HAPPY JACK MINE



GENERALIZED GEOLOGIC SECTION OF WHITE CANYON DIST.

(continued - Previous Exploration)

had intersected several channels as shown on the accompanying map and further exploration was warranted.

November of 1956, Ula Uranium, Inc. drilled 29 holes on the Thunderbird Group of claims, one on the Teton Group, and 9 on the Sowbelly Group. The record of the above holes is attached. Several channels had also been intersected and this drilling and sections are shown on the accompanying map. Although this drilling was done primarily for geologic information, it has shown that there are several favorable mineralized channels which would warrant future exploration.

Producing Properties in Red Canyon Area

The number of producing properties in the Red Canyon area is relatively few. However, the size of the ore bodies being mined make it one of the more favorable areas for an exploration program. The most productive mines along the main northwest trend have been the Maybe mine, Spook & D, Bulls Eye, Radium-King-Ula mine and the Happy Jack mine. Although the production and reserve data is not available, these mines are generally considered to be in excess of 100,000 tons each and the actual reserves on the Radium King-Ula property are in excess of 300,000 tons. Other producing properties which are probably on branches of the main channel trend are the B & D mine, Blue Lizard and Posey mine.

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Conclusions

From the experience and knowledge that Ula has gained in its initial exploration program on the Hersey Group of claims, it is felt that the claims included herein offer similar possibilities judging from the geologic information obtained in past drilling. Lack of exploration capital and access roads have retarded the exploration and development of this area. Several geologic criteria so far indicated, warrant an exploration program of considerable size.

John I. Schumacher

JOHN I. SCHUMACHER
Registered Mining Engineer
March 22, 1957

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Exploration Plans

The proposed project consists of drilling in three stages.

Stage I

A total of 59 holes are planned for Stage 1. These holes will be drilled to delineate probable extensions of favorable areas shown by private drilling. Drilling depths will vary and are expected to average about 225 feet. Holes will be drilled by means of rotary-type drills using air for sample recovery.

"Fence" drilling on approximately 200-foot centers will be done. Total footage will be 13,200 feet of non-core drilling.

Stage II

Stage II drilling will also be "fence" drilling to determine extensions of channels or favorable areas as shown by Stage I drilling. The length of the fences will be determined by the favorability outlined by Stage I and 100-foot centers will be used. An estimate of 30 holes at an average depth of 225 feet totals 6,750 feet.

Stage III

For Stage III drilling, 30 holes are estimated. As in stages I and II an average depth of 225 feet is used. Proposed holes will be offsets of ore holes located by previous drilling. Each hole will be non-

(continued - Exploration Plans)

cored to about 7.5 feet above the ore horizon and into the underlying Moenkopi. Average thickness of the ore horizon is estimated to about 35 feet for an average of 50 feet of core per hole. Total footage for Stage III will thus be 5,250 feet of non-coring and 1500 feet of coring.

Summary of Drilling

Stage	Non-Coring Footage	Coring Footage	Total
I	13,200		
II	6,750		
III	5,250	1,500	
TOTAL	25,200	1,500	26,700

Drilling Bids:

Following is a summary of bids obtained from three drilling contractors:

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DRILL COST CALCULATIONS

Stage I	Holes	Depth	$1.50/foot Feet	$1.50/foot Cost	$1.75/foot Feet	$1.75/foot Cost	$3.50 Ft.	$3.50 Cost	$3.55 Ft.	$3.55 C.	TOTALS
Line 1	8	250	1,600	$2,400	400	$700					$3,100.00
Line 2	7	300	1,400	2,100	700	1225					3,325.00
Line 3	10	275	2,000	3,000	750	1312.50					4,312.50
Line 4	10	125	1,250	1,875							1,875.00
Line 5	9	150	1,350	2,025							2,025.00
Line 6	7	250	1,400	2,100	350	612.50					2,712.50
Line 7	8	250	1,600	2,400	400	700					3,100.00
								Subtotal			$ 20,450.00
Stage II											
	30	225	6,000	9,000	750	1312.50					$ 10,312.50
Stage III											
	30	225	5,250	7,875		750	$2,625				
							750	2887.50			13,387.50
								Grand Total			$ 44,150.00

Based on bid submitted by Scott Bros. Drilling Co.

	Minerals Eng.Co.		Scott Bros.Drill Co.		Sprague & Henwood	
Interval	Non-Core	Core	Non-Core	Core	Non-Core	Core
0 - 200	2.50	5.00	1.50	3.50	1.60	3.80
200-400	3.00	6.25	1.75	3.85	1.60	3.80

On the basis of the bid by Scott Bros. Drilling Company, cost for Stage I is $20,450, Stage II is $10,312.50, and Stage III is $13,387.50, or $44,150 grand total.

Cost of Project

On the basis of four months for this project (two drill rigs), the following costs are calculated:

(1)	Contract Drilling	
	25,200 feet of non-core and 1,500 feet of core	$ 44,150.00
(2)	Drill site preparation (D-7 Bulldozer or equivalent) 480 hrs at $12 per hour	5,760.00
	Moving expense at $150 per move	300.00
(3)	Engineering and Geology	
	Engineer or geologist full time at $750/mo	3,000.00
	Sampler full time for 4 mos for $450/mo	1,800.00
	Subsistence for 2 at $6/day for 4 mos.	600.00
(4)	Assaying and Probing	
	200 samples at $3.00	600.00
	Counter & probe rental at $100/mo	400.00
	100 core boxes at 85 cents/box	85.00
(5)	Vehicle Mileage	
	9600 miles at $0.10/mile	960.00
(6)	Accounting and office supplies	480.00
(7)	Contingencies - An estimated 10% is added to cover unforseen delays and expenses	5,813.00

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Summary of Costs

Item	Total	Unit Cost per foot
Contract Drilling	$ 44,150.00	1.653
Site Preparation	6,060.00	0.227
Engineering and Geology	5,400.00	0.202
Assaying and Probing	1,085.00	0.041
Vehicle Mileage	960.00	0.036
Accounting, Office expense	480.00	0.018
Contingencies	5,813.00	0.218
Totals	$ 63,948.00	$ 2.395

Government Participation at 75%	$ 47,961.00
Ula Uranium, Inc. at 25%	15,987.00
Total	$ 63,948.00

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DRILL HOLE LOGS
THUNDERBIRD GROUP

Hole No.	From	To	Rock	Color	Grain	MS in SS	Remarks
UT # 1	0	109.0					Chinle
	109.0	113.0	SS, Sh				
	113.0	117.0	SS	Dk Gy	F		
	117.0	125.0	SS	LGy	C		
	125.0	129.0	SS, Sh	LGy			
	129.0	133.0	SS	LGy	C		
30'	133.0	139.0	SS, Sh	Gy			Pyritic
2'	139.0	141.0	MS	Gn			
	141.0	150.0	MS	R			
			Probe - Barren				
UT # 2	0	85.0					Chinle
	85.0	109.0	SS,Sh	Gy	F		
	109.0	113.0	Sh	DkGy			Cu, FeS_2
33	113.0	118.0	SS	LGy	M		FeS_2
0.5	118.0	118.5	MS	Gn			
	118.5	130.0	MS	R			
			Probe - Barren				
UT # 3	0	70.0					Chinle
	70.0	78.0	SS,Sl	Gy	F		
29	78.0	99.0	SS	LGy	C		Cu, FeS_2
2	99.0	101.0	MS	Gn			
	101.0	110.0	MS	R			
			Probe - Barren				
UT # 4	0	69.0					Chinle
	67.0	77.0	Sh, SS		F		
22.5	77.0	89.5	Ss, Sh	DkGy	C		FeS_2, Cu
0.5	89.5	90.0	MS	Gn			
	90.0	106.0	Sh	R			
			Probe - Barren				
UT # 5	0	45.0					Chinle
	45.0	57.0	Ss, Sh	LGy	F		
22	57.0	66.0	Ss	DkGy	C		FeS_2, Cu
1	66.0	67.0	Ms	Gn			
	67.0	74.0	Ms	R			
			Probe - Barren				

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(continued - Drill Logs - Thunderbird Group)

Hole No.	From	To	Rock	Color	Grain	MS in SS	Remarks
UT # 6	0	46.0					Chinle
	46.0	55.0	SS,Sh	Gy	F		
13/1	55.0	59.0	SS	DkGy	C		
	59.0	60.0	Ms	Gn			
	60.0	69.0	Ms	R			
			Probe - Barren				
UT # 7	0	52.0					Chinle
	52.0	57.0	SS,Sh		F		
15/2	57.0	65.0	SS	Gy	C		
	65.0	67.0	Ms	Gn			
	67.0	79.0	Sh	R			
			Probe - Barren				
UT # 8	0	32.0					Chinle
	32.0	36.0	SS,Sh	LGy	F		
	36.0	44.0	SS	LGy, DGy	C		FeS2,Cu
	44.0	45.0	Ms	Gn			
	45.0	55.0	Sh	R			
			Probe - Barren				
UT # 9	0	17.0					Chinle
	17.0	32.0	SS,Sh	Gy	C		
	32.0	33.5	Ms	Gn			
	33.5	42.0	Sh	R			
			Probe - 22.0 to 24.0 - Weakly Radioactive				
UT # 10	0	9.0	Ovbd				
	9.0	13.0	SS		F		
	13.0	17.0	SS,Sh	DkGy			
	17.0	32.0	SS,	DGy,Yw	C,Cg		
	32.0	33.0	Ms,	Gn			
	33.0	42.0	Sh	R			
			Probe - 17.0-19.0, 27.0-28.0 -Wkly Radioactive				
UT # 11	0	27.0					Ovbd,Chinle
	27.0	33.0	SS	Lgy	F		
	33.0	34.0	Ms	Gn			
	34.0	43.0	Sh	R			
			Probe - Barren				

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(Continued - Drill Logs - Thunderbird Group)

Hole No.	From	To	Rock	Color	Grain	MS In SS	Remarks
UT # 12	0	13.0	ovbd				
	13.0	28.0					Chinle
	28.0	36.0	SS	Gy,Yw	C		
	36.0	38.5	Ms	Gn			
	38.5	50.0	Sh	R			
			Probe 31.0,37.0 Weakly Radioactive				
UT # 13	0	18.0					Chinle
	18.0	33.0	SS,Sh		F,C.		
	33.0	35.0	Ms	Gn			
	35.0	45.0	Sh	R			
			Probe - Barren				
UT # 14	0	9.0	Ovbd				
	9.0	29.0	Ss, Sh	Gy,Yw	F,C		FeS_2,Cu
	29.0	30.0	Ms	Gn			
	30.0	40.0	Sh	R			
			Probe - Barren				
UT # 15	0	5.0	Ovbd				
	5.0	19.5					Chinle
	19.5	36.5	Ss	Gy,Yw	M,C.		
	36.5	37.5	Ms	Gn			
	37.5	48.0		Sh	R		
			Probe 32 to 35 0.03 %				
WUT # 16	0	8.0	Ovbd				
	8.0	27.0					Chinle
	27.0	41.5	Ss	Gy,Yw	M		
	41.5	42.0	Ms	Gn			
	42.0	44.0	Sh	R			
			Probe - Barren				
WUT # 17	0	6.0	Ovbd				
	6.0	31.0					Chinle
	31.0	36.0	SS	LGy	M		
	36.0	39.0	SS	Yw	C		
	39.0	39.5	Ms	Gn			
	39.5	44.0	Sh	R			
			Probe - Slight count at 39.0				

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(continued - Drill Logs - Thunderbird Group)

Hole No.	From	To	Rock	Color	Grain	MS In SS	Remarks
WUT # 18	0	19.0					Chinle
	19.0	33.0	SS	Yw,Gy	M		
	33.0	36.0	Ms	Gy			Cu
	36.0	37.0	Ms	Gn			
	37.0	42.0	Sh	R			
			Probe Slightly radioactive 36.0-37.0				
WUT # 19	0	18.0					Chinle
	18.0	20.0	St		F		
	20.0	25.5	Ss	Gy			
	25.5	26.0	Ms	Gn			
	26.0	28.0	Sh	R			
			Probe - Very weak radioactivity at 25.0				
WUT # 20	0	19.0					Chinle
	19.0	26.0	SS	LGy			
	26.0	27.0		No return			
	27.0	30.0	Sh	R			
			Probe - Barren				
WUT # 21	0	14.0					Chinle
	14.0	21.0	SS	Gy	C		
	21.0	22.0	Ms	Gn			
	22.0	26.0	Sh	R			
			Probe 16.0 to 16.5 0.03%				
WUT # 22	0	9.0					Chinle
	9.0	21.0	SS	Yw	C		Highly oxidized
	21.0	22.0	Ms	Gn			
	22.0	24.0	Sh	R			
			Probe - Barren				
WUT # 23	0	7.0	Ovbd				
	7.0	24.0					Chinle
	24.0	30.0	SS	Gy	C		
	30.0	31.0	Ms	Gn			
	31.0	34.0	Sh	R			
			Probe - Barren				
WUT # 24	0	11.5	Ovbd				
	11.5	13.5					Chinle
	13.5	34.5	SS	LGy	C		
	34.5	35.0	Ms	Gn			
	35.0	36.0	Sh	R			
			Probe - Barren				

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(Continued - Drill Logs - Thunderbird Group)

Hole No.	From	To	Rock	Color	Grain	MS in SS	Remarks
WUT # 25	0	7.0	Ovbd				
	7.0	29.0					Chinle
	29.0	43.0	SS	LGy	C		
	43.0	44.0	Ms	Gn			
	44.0	46.0	Sh	R			
			Probe - Barren				
WUT # 26	0	6.0	Ovbd				
	6.0	51.0					Chinle
	51.0	63.0	SS	Gy	C		
	63.0	66.0	Sh	R			
			Probe - Barren				
WUT # 27	0	52.0					Chinle
22.5	52.0	74.5	SS	LBr	C		
0.5	74.5	75.0	Ms	Gn			
	75.0	78.0	Sh	R			
			Probe - Barren				
WUT # 28	0	122.0					Chinle
	122.0	136.0	SS	L,DGy	F,M	A	FeS2, Cu
	136.0	150.0	SS,Sh	L,Gy			
36	158.0	160.0	SS	Gy		A	FeS2, Cu
	160.0	161.0	Ms	Gn			
	161.0	166.0	Sh	R			
			Probe - Barren				
WUT # 29	0	56.0	Ovbd				
	56.0	112.0					Chinle
34	112.0	146.0	SS	L,D Gy			
1	146.0	147.0	Ms	Gn			
	147.0	150.0	Sh	R			
			Probe 118.0 to 120.0 Min. Assay 0.14%				

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DRILL HOLE LOGS
SOWBELLY GROUP

Hole No.	From	To	Rock	Color	Grain	Ms in SS	Remarks
SB # 1	0	39.9					Chinle
	39.9	66.4	SS	LGy	C		FeS_2,Cu
	66.4	67.8	Ms	Gn			
	67.8	72.9	Sh	R			
			Probe 50.5 and 62.0 Weakly mnlzd.				
SB # 2	0	41.7					Chinle
	41.7	67.8	SS	LGy	C	S;Gn	
	67.8	68.3	Ms	Gn			
	68.3	74.4	Sh	R			
			Probe 47.5 to 48.5 Weakly mnlzd.				
SB # 3	0	48.5					Chinle
	48.5	56.0	SS		M,F		
	56.0	74.0	Sh		R		
			Probe - Barren				
SB # 4	0	102.5					Chinle
	102.5	122.5	Sh		R		No Shinarump
			Probe - Barren				
SB # 5	0	22.0					Chinle
	113.5	118.5	Sh		R		No Shinarump
			Probe - Barren				
SB # 6	0	22.0					Chinle
	22.0	44.0	SS,Sh	Gy			
	44.0	46.0	Ms	Gn			
	46.0	48.5	Sh	R			
			Probe 38.0 to 39.5 Weakly mnlzd.				
SB # 7	0	38.0					Chinle
	38.0	61.5	SS,Sh	Gy			
	61.5	62.5	Ms	Gn			
	62.5	73.0	Sh	R			
			Probe 40.0 to 49.0 0.02to 0.04%				

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(Continued - Drill Hole Logs - Sowbelly Group)

Hole No.	From	To	Rock	Color	Grain	Ms in SS	Remarks
SB # 8	0	43.5					Chinle
	43.5	71.5	SS, Sh	LGy			
	71.5	72.0	MS	Gn			
	72.0		Sh	R			
			Probe - Barren				
SB # 9	0	53.5					Chinle
	53.5	66.0	SS				
	66.0	66.5	Ms	Gn			
	66.5	83.5	Sh	R			
			Probe - Barren				

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DRILL HOLE LOGS
PH GROUP

Hole No.	From	To	Rock	Color	Relative Collar Elev.	Remarks
PH # 1	0	5			100	Ovbd.
	5	13	Ms	Gy		
	13	22	SS	Gy		
	22	23	Ms	Gy		
	23	24	Ms	R		
			Probe - Barren			
PH # 2	0	6	SS	R		
	6	16	Ms	Gy	106	
	16	21	SS	Gy		
	21	25	Ms	Gy		
	25	27	SS	Gy		
	27	29	Ms	Gy		
	29	30	Ms	R		
			Probe - Barren			
PH # 3	0	24	Ms	Gy		
	24	28	SS	Gy	115	
	28	43	SS	Y		
	43	46	Ms	Gy		
	46	48	Ms	R		
			Probe - Barren			
PH # 4	0	27	MS	Gy		
	27	46	SS	Gy	116	
	46	47	Ms	Gy		
	47	48	Ms	R		
			Probe - Barren			
PH # 5	0	43	Ms	R, Gy, Y		
	43	69	SS	Gy	125	
	69	71	Ms	Gy		
	71	72	Ms	R		
			Probe - Barren			
PH # 6	0	52	Ms			
	52	69	SS	Gy	128	
	69	75	Ms	Gy		
	75	78	Ms	R		
			Probe Barren			

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(continued - Drill Hole Logs -PH Group)

Hole No.	From	To	Rock	Color	Relative Collar Elev.	Remarks
PH # 7	0	56	Ms			
	56	74	SS	Gy	129	
	74	80	Ms	Gy, R		
			Probe - Barren			
PH # 8	0	57	Ms			
	57	80	SS	Gy	129	
	80	82	Ms	Gy		
	82	84	Ms	R		
			Probe - Barren			
PH # 9	0	76	Ms			
	76	87	SS	Gy	133	
	87	89	Ms	Gy		
	89	90	Ms	R		
			Probe - Barren			
PH # 10	0	81	Ms			
	81	90	SS	Gy	135	
	90	95	Ms	Gy		
	95	99	Ms	R		
			Probe - Barren			
PH # 11	0	68	Ms			
	68	96	SS	Gy	138	
	96	97	Ms	Gy		
	97	99	Ms	R		
			Probe - Barren			
PH # 12	0	70	Ms			
	70	99	SS	Gy	142	
	99	100	Ms	Gy		
	100	102	Ms	R		
			Probe - Barren			
PH # 13	0	72	Ms			
	72	100	SS	Gy	144	
	100	101	Ms	Gy		
	101	102	Ms	R		
			Probe - Barren			
PH # 14	0	83	Ms			
	83	115	SS	Gy	154	
	115	116	Ms	Gy		
	116	117	Ms	R		
			Probe - Barren			

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(continued - Drill Hole Logs - PH Group)

Hole No.	From	To	Rock	Color	Relative Collar Elev.	Remarks
PH # 15	0	97	Ms			
	97	128	SS	Gy	166	
	128	129	SS	Gy		
	129	132	Ms	R		
			Probe - Barren			
PH # 16	0	87	Ms			
	89	121	SS	Gy	162	
	121	122	Ms	Gy		
	122	123	Ms	R		
			Probe - Barren			
PH # 17	0	102	Ms			
	102	129	SS	Gy		
	129	130	Ms	Gy		
	130	132	Ms	R		
			Probe - Mineralization at 129			
PH # 18	0	80	Ms			
	80	110	SS	Gy	162	
	110	111	Ms	Gy		
	111	114	Ms	R		
			Probe - Barren			
PH # 19	0	99	Ms			
	99	119	SS	Gy	172	
	119	122	Ms	Gy		
	122	126	SS	Gy		
	126	128	Ms	Gy		
	128	129	Ms	R		
			Probe - Barren			
PH # 20	0	113	Ms			
	113	136	SS	Gy	185	
	136	141	Ms	Gy		
	141	144	Ms	R		
			Probe - Barren			
PH # 21	0	112	Ms			
	112	127	SS	Gy	185	
	127	128	Ms	Gy		
	128	129	Ms	R		
			Probe - Barren			

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(continued - Drill Hole Logs - PH Group)

Hole No.	From	To	Rock	Color	Relative Collar Elev.	Remarks
PH # 22	0	132	Ms			
	132	162	SS	Gy		
	162	163	Ms	Gy		
	163	164	Ms	R		
	164	166	Ms,SS	Gy		
	166	175	Ms	Gy, R		
	175	177	Ms	R		
			Probe - Barren			
PH # 23	0	91	Ms			
	91	125	SS	Gy		
	125	126	Ms	Gy		
	126	129	Ms	R		
			Probe - Barren			
PH # 24	0	88	Ms			
	88	118	SS	Gy		
	118	121	Ms	Gy		
	121	123	Ms	R		
			Probe - Barren			
PH # 25	0	65	Ms			
	65	102	SS	Gy		
	102	103	Ms	Gy		
	103	105	Ms	R		
			Probe - Barren			
PH # 26	0	62	Ms			
	62	88	SS	Gy		
	88	90	Ms	Gy		
	90	93	Ms	R		
	93	100	SS	Gy		
	100	101	Ms	Gy		
	101	105	Ms	R		
			Probe - Barren			
PH # 27	0	62	Ms			
	62	91	SS	Gy		
	91	93	Ms	Gy, R		
	93	102	SS	Gy		
	102	103	Ms	Gy		
	103	105	Ms	R		
			Probe - Barren			

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(continued - Drill Hole Logs - PH Group)

Hole No.	From	To	Rock	Color	Relative Collar Elev.	Remarks
PH # 28	0	73	Ms			
	73	100	SS	Gy		
	100	101	Ms	Gy		
	101	105	Ms	R		
			Probe - Barren			
PH # 29	0	67	Ms			
	67	102	SS	Gy		
	102	103	Ms	Gy		
	103	108	Ms	R		
			Probe - Barren			
PH # 30	0	76	Ms			
	76	101	SS	Gy		
	101	103	Ms	Gy		
	103	107	Ms	R		
			Probe - Barren			
PH # 31	0	100	Ms			
	100	130	SS	Gy		
	130	132	Ms	Gy		
	132	136	Ms	R		
			Probe - Barren			
PH # 32	0	100	Ms			
	100	128	SS	Gy		
	128	130	Ms	Gy		
	130	132	Ms	R		
			Probe - Barren			
PH # 33	0	69	Ms			Abandoned
PH # 34	0	76	Ms			
	76	99	SS	Gy		
	99	104	Ms	Gy		
	104	109	Ms	R		
			Probe - Barren			
PH # 35	0	77	Ms			
	77	99	SS	Gy		
	99	102	Ms	Gy		
	102	108	Ms	R		
			Probe - Barren			

Ula Uranium Corp.
216 Luhrs Bldg.
Phoenix, Arizona

(continued - Drill Hole Logs - PH Group)

Hole No.	From	To	Rock	Color	Relative Collar Elev.	Remarks
PH # 36	0	58	Ms			
	58	76	SS	Gy		
	76	80	Ms	R		
			Probe - Barren			
PH # 37			No Log			
PH # 38	0	67	Ms			
	67	89	SS	Gy		
	89	95	Ms	Gy, R		
	95	101	SS	Gy		
	101	104	Ms	R		
			Probe - Barren			
PH # 39			No Log			
PH # 40	0	68	Ms			
	68	82	SS	Gy		
	82	100	Ms	Gy		
	100	102	Ms	R		No return 91-99
			Probe - Barren			
PH # 41	0	80	Ms			
	80	85	SS	Gy		
	85	97	Ms	Gy		
	97	100	SS	Gy		
	100	102	Ms	R		
			Probe - Barren			
PH # 42	0	82	Ms			
	82	85	SS	Gy		
	85	97	Ms	Gy		
	97	109	-	-		
	109	111	Ms	R		
			Probe - Barren			
PH # 43	0	34	Ms			Abandoned
PH # 44	0	53	Ms			
	53	60	Ms	R		
PH # 45	0	45	Ms			
	45	48	SS	L Br		
	48	55	Ms	Gy		
	55	60	Ms	R		
			Probe - Barren			

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DRILL HOLE LOGS
SOWBELLY GROUP

Hole No.	From	To	Rock	Color	Grain	Ms in SS	Remarks
SB # 1	0	39.9					Chinle
	39.9	66.4	SS	LGy	C		FeS_2,Cu
	66.4	67.8	Ms	Gn			
	67.8	72.9	Sh	R			
			Probe 50.5 and 62.0 Weakly mnlzd.				
SB # 2	0	41.7					Chinle
	41.7	67.8	SS	LGy	C	S;Gn	
	67.8	68.3	Ms	Gn			
	68.3	74.4	Sh	R			
			Probe 47.5 to 48.5 Weakly mnlzd.				
SB # 3	0	48.5					Chinle
	48.5	56.0	SS		M,F		
	56.0	74.0	Sh		R		
			Probe - Barren				
SB # 4	0	102.5					Chinle
	102.5	122.5	Sh		R		No Shinarump
			Probe - Barren				
SB # 5	0	22.0					Chinle
	113.5	118.5	Sh		R		No Shinarump
			Probe - Barren				
SB # 6	0	22.0					Chinle
	22.0	44.0	SS,Sh	Gy			
	44.0	46.0	Ms	Gn			
	46.0	48.5	Sh	R			
			Probe 38.0 to 39.5 Weakly mnlzd.				
SB # 7	0	38.0					Chinle
	38.0	61.5	SS,Sh	Gy			
	61.5	62.5	Ms	Gn			
	62.5	73.0	Sh	R			
			Probe 40.0 to 49.0 0.02to 0.04%				

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(continued - Drill Hole Logs - PH Group)

Hole No.	From	To	Rock	Color	Relative Collar Elev.	Remarks
PH # 46	0	16	Ms			
	16	29	SS	L Br		
	29	32	SS	Gy		
	32	35	Ms	Gy		
	35	39	Ms	R		
			Probe - Barren			
PH # 47	0	21	Ms			
	21	24	SS	Gy		
	24	30	SS	L Br		
	30	40	Ms	Gy		
	40	42	SS	Gy		
	42	45	Ms	R		
			Probe - Barren			
PH # 48	0	32	Ms			
	32	38	SS	Gy		
	38	40	Ms	Gy		
	40	45	Ms	R		
			Probe - Barren			
PH # 49	0	34	Ms			
	34	37	SS	Gy		
	37	40	Ms, SS	Gy		
	40	42	SS	Gy		
	42	45	Ms	R		
			Probe-Mineralized 29 to 31, 33.8 to 34.8 0.23% Max.			
PH # 50	0	33	Ms			
	33	38	SS	Gy		
	38	40	Ms	Gy		
	40	42	Ms	R		
			Probe-Mineralized 32.5 to 36.0 0.02% to 0.08 %			
PH # 51	0	38	Ms			
	38	43	SS, Ms	Gy		
	43	44	Ms	Gy		
	44	48	Ms	R		
			Probe Mineralized at 32.0			

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(continued - Drill Hole Logs - PH GROUP)

Hole No.	From	To	Rock	Color Relative Collar Elev.	Remarks
PH # 52	0	29	Ms		
	29	32	SS	Gy	
	32	41	Ms	Gy	
	41	44	Ms,SS	Gy	
	44	48	Ms	R	
			Probe - Barren		
PH # 53	0	17	Ms		
	17	19	SS		
	19	26	Ms		
	26	33	SS	LBr	Hard
	33	36	Ms	Gy	
	36	39	Ms	R	
			Probe - Barren		
PH # 54	0	32	Ms		
	32	33	SS	Gy	
	33	41	Ms	Gy	
	41	43	Ms,SS	Gy	
	43	56	Ms	Gy	
	56	60	Ms	R	
			Probe - Barren		
PH # 55	0	56	Ms		
	56	60	Ms	R	

Ula Uranium, Inc.
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Phoenix, Arizona

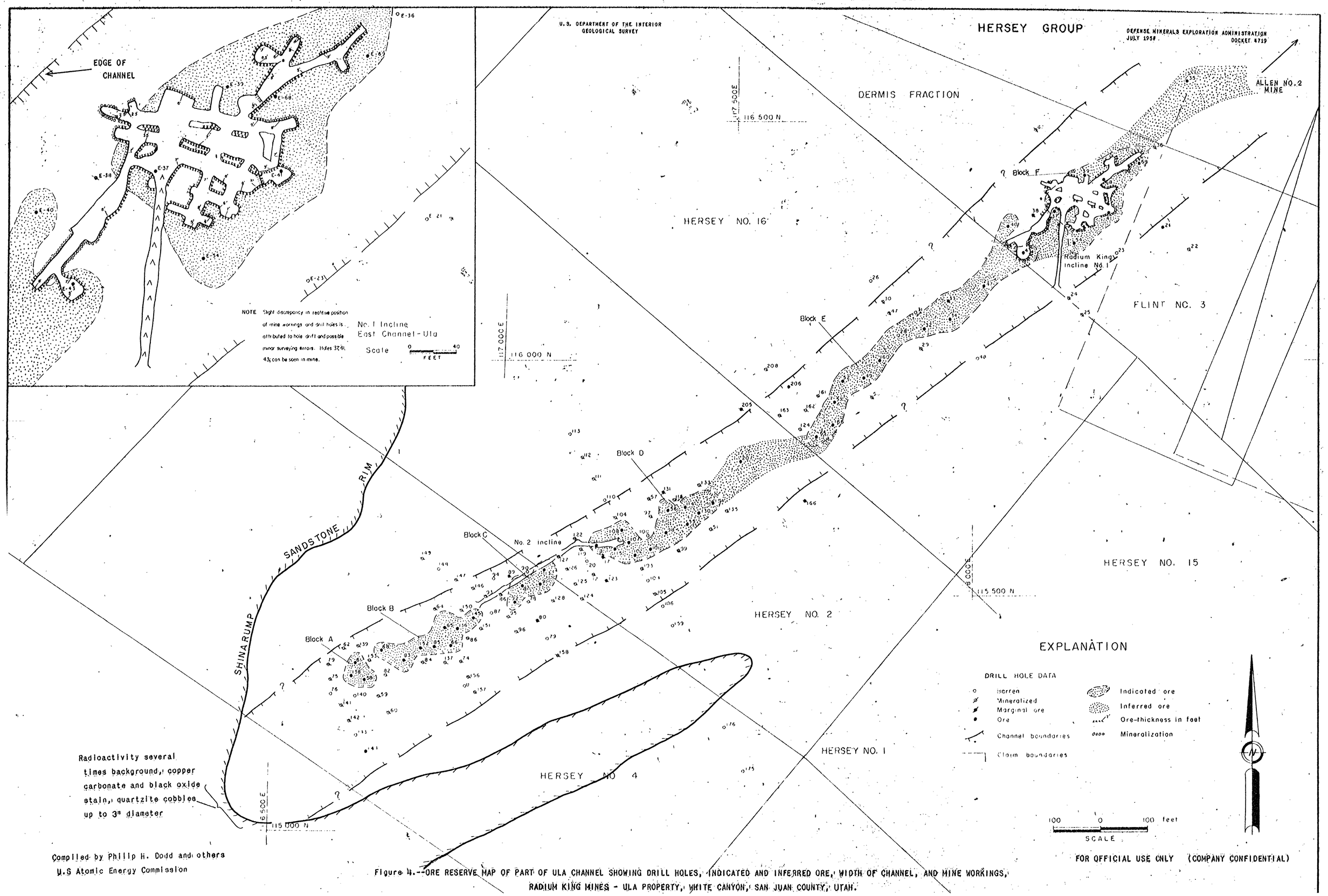
PROBE RESULTS - P.H. GROUP

Hole No. P.H. 49

Footage	U_e		Assay
29	.00)		
29'-3"	.04)		
29'-6"	.05)		
29'-9"	.19)	Max. 23	0.04
30'-3"	.08)		
30'-6"	.07)		
30'-9"	.05)		
31'-0"	.05)		
33'-9"	.04		
34'	.07		
34'-6"	.06		
34'-9"	.04		

Hole No. P.H. 50

32'-6"	.02
32'-9"	.06
33'	.08
33'-3"	.02
35'-3"	.02
35'-6"	.06
35'-9"	.04
36'	.02



Compiled by Philip H. Dodd and others
U.S Atomic Energy Commission

Figure 4.--ORE RESERVE MAP OF PART OF ULA CHANNEL SHOWING DRILL HOLES, INDICATED AND INFERRED ORE, WIDTH OF CHANNEL, AND MINE WORKINGS, RADIUM KING MINES - ULA PROPERTY, WHITE CANYON, SAN JUAN COUNTY, UTAH.

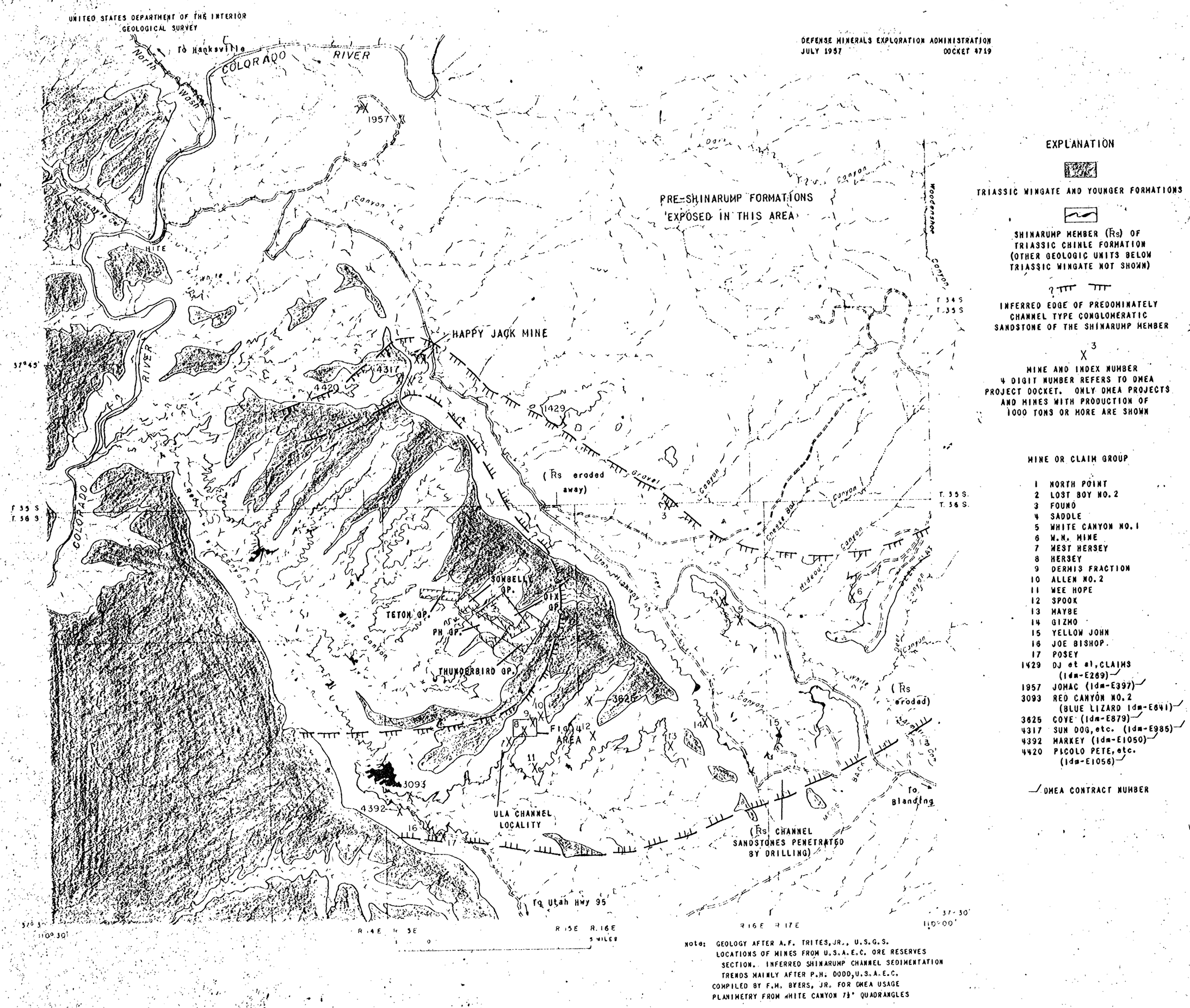


FIGURE 2.--GENERALIZED GEOLOGIC MAP OF WHITE CANYON AREA SHOWING LOCATION OF TETON, SOWBELLY, PH, THUNDERBIRD, AND DIX CLAIM GROUPS WITH RESPECT TO SHINARUMP FACIES TRENDS AND HERSEY AND DERMIS FRACTION MINES (FIGURE 4 AREA), ULA URANIUM, INC., SAN JUAN COUNTY, UTAH.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JULY 1957 DOCKET 4719

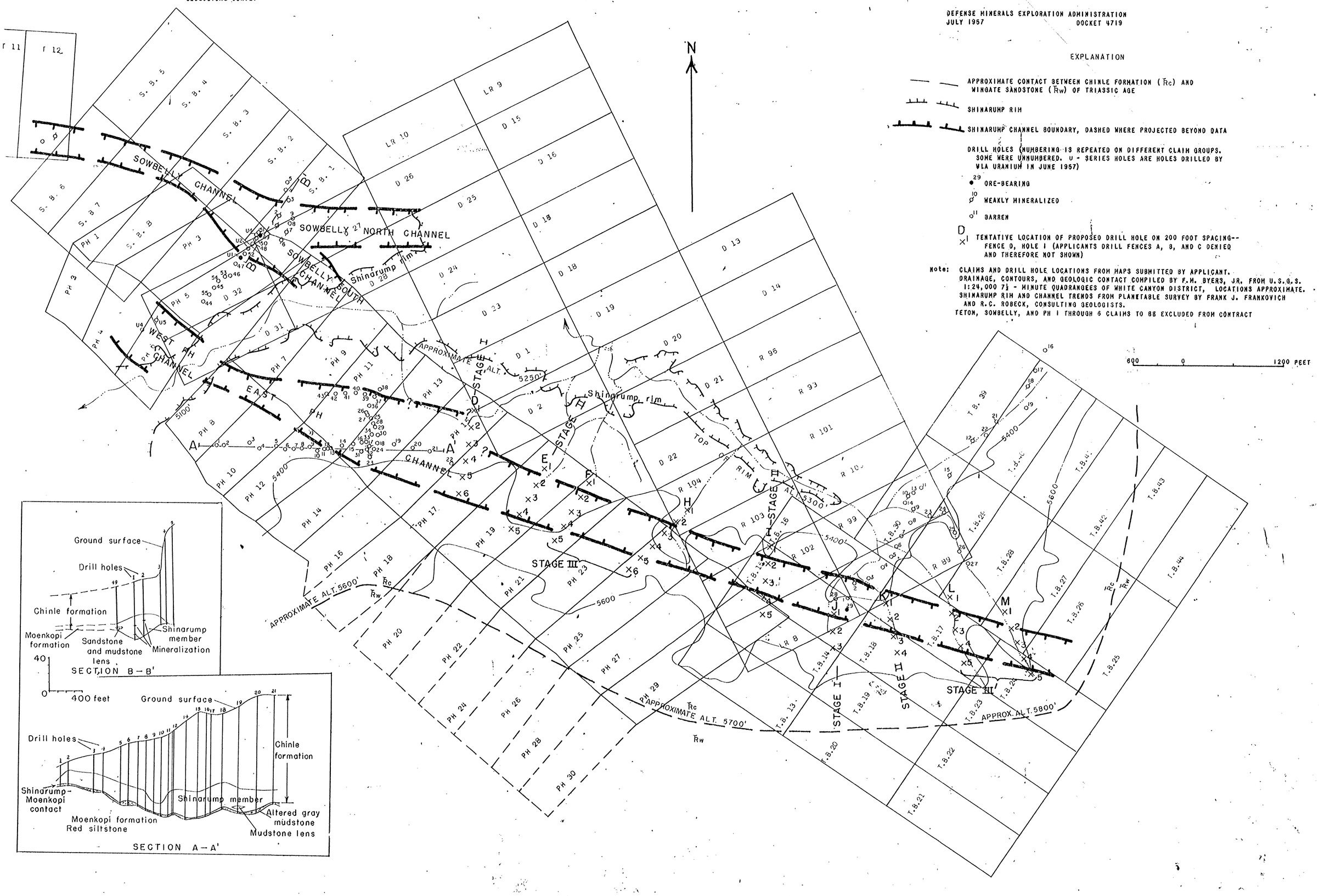


Figure 3.--CLAIM SURVEY MAP SHOWING GENERALIZED TOPOGRAPHY, DRILL HOLES AND PROPOSED STAGE I DRILL HOLES, PH 7 THROUGH PH 30, DIX GROUP, THUNDERBIRD 13 THROUGH 30, AND THUNDERBIRD 39 THROUGH 114 CLAIMS, ULA URANIUM, INC., WHITE CANYON MINING DISTRICT, SAN JUAN COUNTY, UTAH.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET 4719

AUGUST 1957

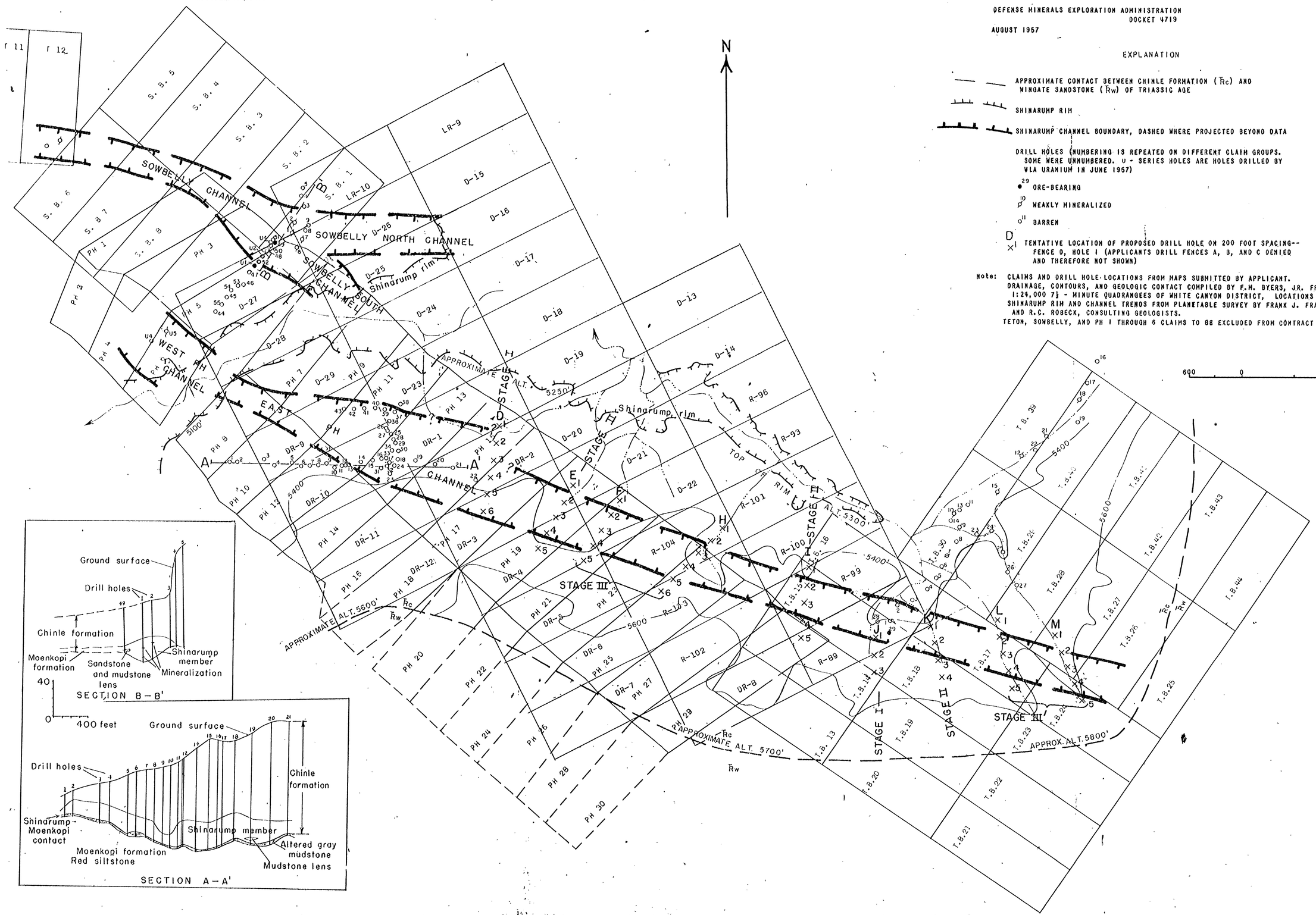
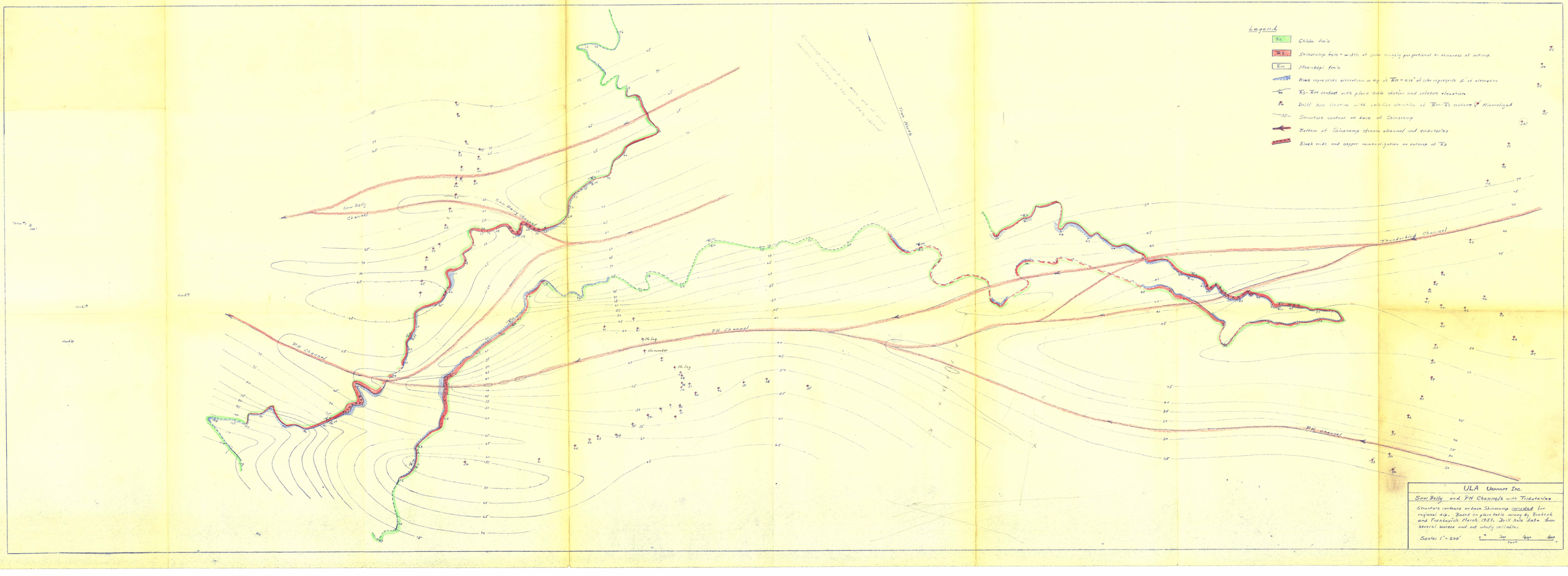
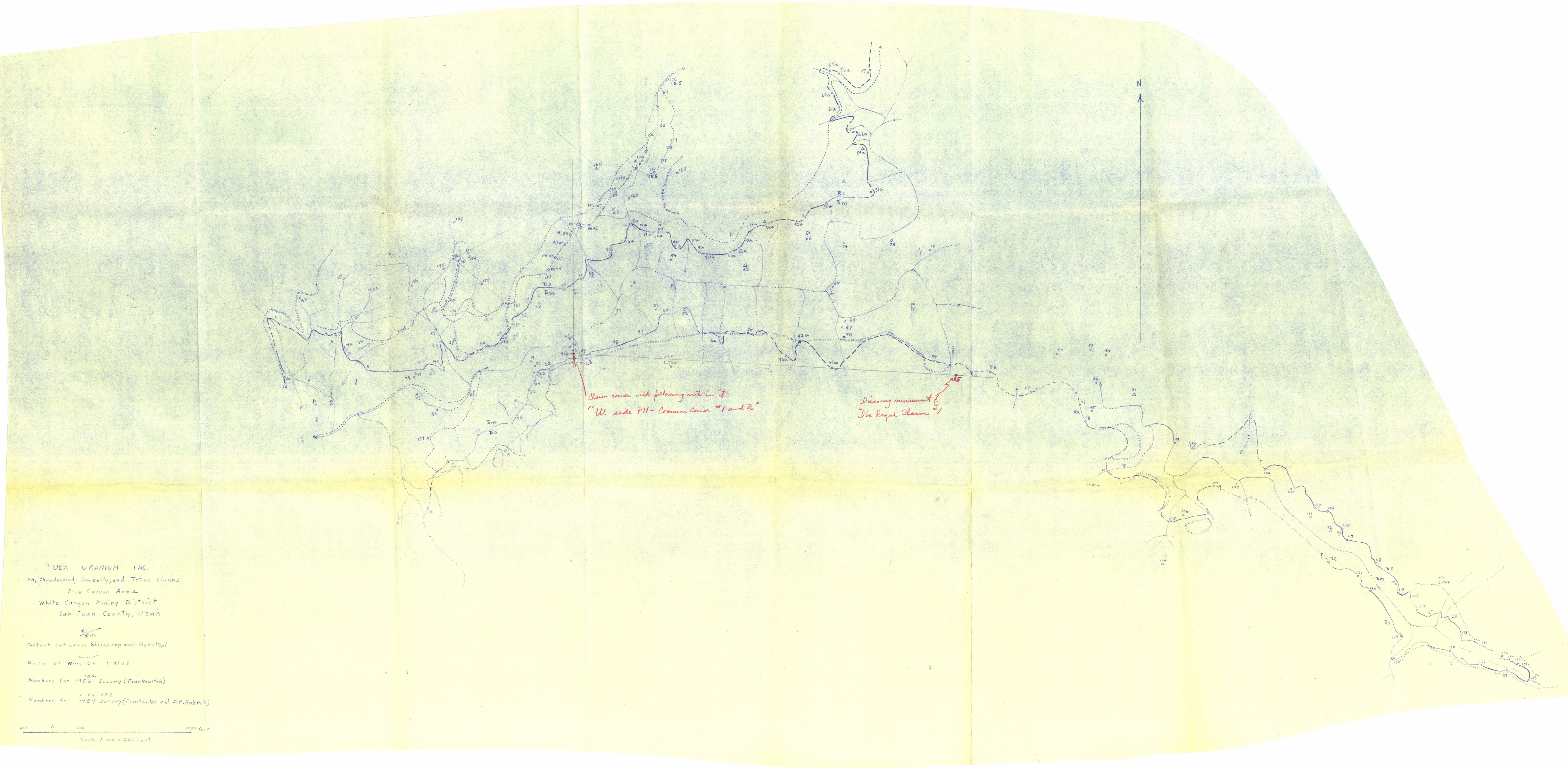


Figure 3.--CLAIM SURVEY MAP SHOWING GENERALIZED TOPOGRAPHY, DRILL HOLES AND PROPOSED STAGE I DRILL HOLES, PH 7 THROUGH PH 30, DIX GROUP, THUNDERBIRD 13 THROUGH 30, AND THUNDERBIRD 38 THROUGH 104 CLAIMS, ULA URANIUM, INC., WHITE CANYON MINING DISTRICT, SAN JUAN COUNTY, UTAH.

ULA URANIUM INC.
THUNDERBIRD, PH, SOWBELLY, TETON & SUNSTROKE CLAIMS
SECTION UNSURVEYED, RANGE 18E, TOWNSHIP 36S
WHITE CANYON MINING DISTRICT
SAN JUAN COUNTY, UTAH
MARCH 1977
LEGEND
Survey Claim Boundary
Property Claim Boundary
Section Monument
Drill hole location and number
Mineralized Area
Approximate Boundary Favorable Zone
Tentative location of proposed drill hole
SECTION B-B'
SECTION A-A'
GROUP
TETON
SUNSTROKE
SOWBELLY
THUNDERBIRD
Sowbelly Wash Channel
Wingate
Chinle
Moenkopi
Cutler
Drill Holes
Ground Surface
Scale in Feet
Figure 3 - Claim Survey map showing geologic topography, drill holes, and proposed trips 2 drill holes, PH 7 through PH 30, the Thunderbird 13 through 20, the Thunderbird 34 through 44 claims, Ula Uranium, Inc. White Canyon mining district, San Juan County, Utah


Legend
Chinle, fm'n
Shinarump fm'n - width of color roughly proportional to thickness at outcrop.
Moenkopi fm'n
Blue represents aggradations in dip at Tm-Ts = 0.10' of color represents 2' of aggradation
Ts-Tm contact with plane-table station and relative elevation
Drill hole location with relative elevation at Tm-Ts contact if Mineralized
Structure contour on base of Shinarump
Bottom of Shinarump stream channel and tributaries
Black oxide and copper mineralization on outcrop of Ts
Saw Belly Channel
Saw Belly Channel
PH Channel
PH Channel
Thunderbird Channel
PH Channel
True North
ULA Uranium Inc.
Saw Belly and PH Channels with Tributaries
Structure contours on base Shinarump corrected for regional dip. Based on plane table survey by Babcock and Pushkaitis March 1955. Drill hole data from several sources and not wholly reliable.
Scales 1" = 200'
0 200 400 600
Feet


N
Claim corner with following note in it:
"W. side PH - Common Corner #1 and 2"
Discovery monument of
Dix Regal Claim #1
ULA URANIUM INC.
PH, Thunderbird, Sawbelly, and Teton claims
Blue Canyon Area
White Canyon Mining District
San Juan County, Utah
Contact between Shinarump and Moenkopi
Base of Wingate talus
Numbers for 1956 Survey (Frankovitch)
Numbers for 1957 Survey (Frankovitch and R.C. Roberts)
200 0 200 1000 feet
Scale 1 inch = 200 feet

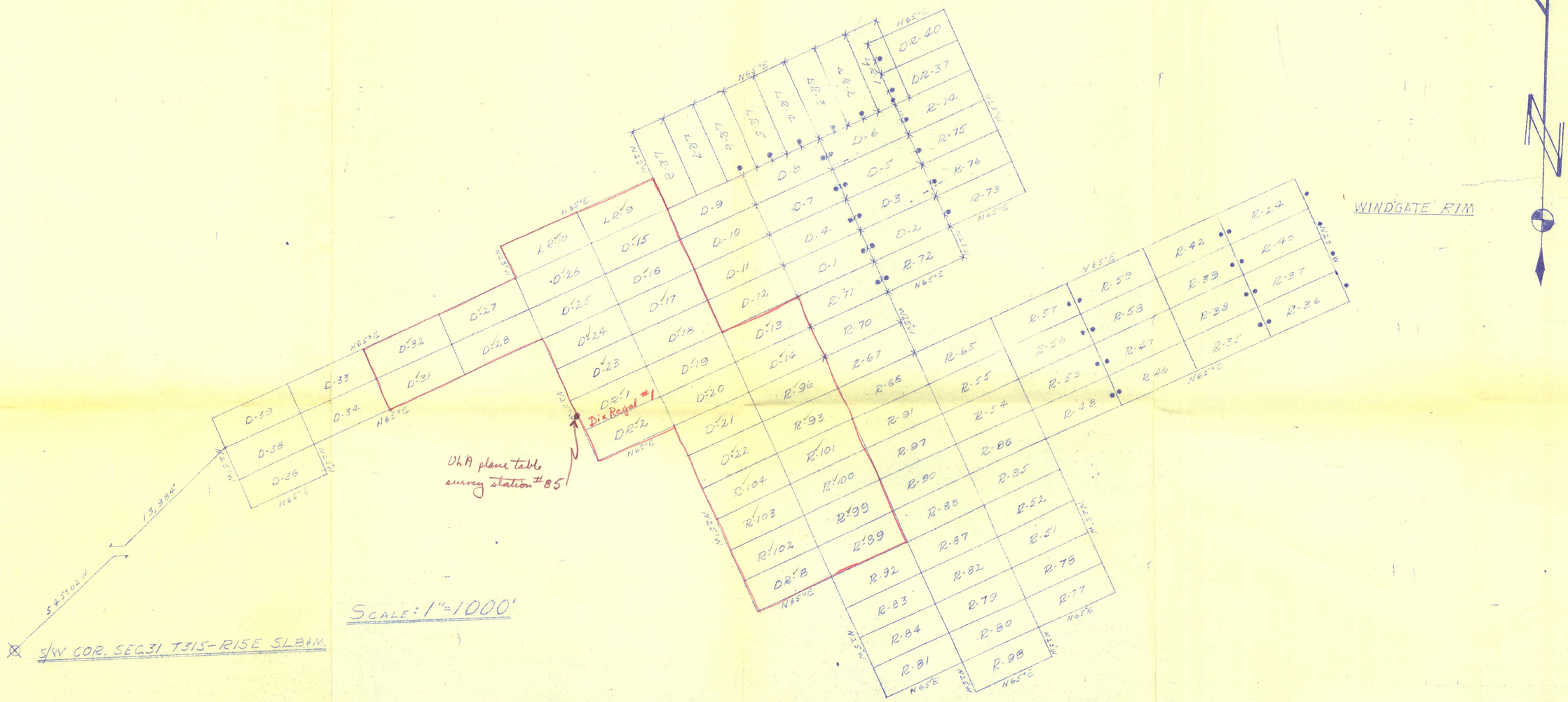
ULA URANIUM INC.
PH, Thunderbird, Sawbelly, and Teton claims
Blue Canyon Mining District
San Juan County, Utah

Contact between Shinarump and Monitor
Base of Winnie talus
Numbers for 1956 Survey (Frankovich)
Numbers for 1957 Survey (Frankovich and R.C. Robert)
Surface elevations

Scale 1 inch = 200 feet

200 0 200 1000 feet

RCR 44457



"DIX URANIUM CORP"

SAN JUAN COUNTY, UTAH.

REGISTERED LAND SURVEYOR No. 1770 GEORGE M. NEWELL STATE OF UTAH

Certified to be correct to the best of my knowledge and belief.

George M. Newell
Registered Surveyor
Utah License No. 1770

NOTE:

STADIA SURVEY

ALL CLAIMS 600 x 1500

ALL BEARINGS N65°E & N25°W

Scale: 1" = 1000'

X - PAINTED COR'S

• - AMMENDED NOTICE

D - DIX

R - REGAL

LR - LANE-REGAL

Proposed Drilling Program for PH, Teton, Sow Belly, & Thunderbird Groups
by: F. J. Frankovich
For: ULA Uranium, Inc.
Profiles are laid out to take advantage of topography, existing holes and roads.
Pencil line represents proposed line of profile with holes shown by heavy pencil dot. First holes would be on 200' centers. It is proposed that these holes would be shifted along the line of profile to the limits shown, as might be indicated by the results of drilling the previous profile.
ULA URANIUM INC.
PH, Thunderbird, Sowbelly, and Teton claims
Blue Canyon Area
White Canyon Mining District
San Juan County, Utah
Contact between Shinarump and Moenkopi
Base of Wingate talus
Numbers for 1956 Survey (Frankovitch)
Numbers for 1957 Survey (Frankovitch and R.C. Robeck)
451' = Surface elevation
Scale 1 inch = 200 feet
Base of steep slope
Top of middle terrace
Top (edge) of upper terrace
Edges of Rcs channel
Thunderbird Channel
PH Channel
East PH Channel
West PH Channel
Sow Belly North Channel
Sow Belly South Channel
Stage 1 Drilling Sow Belly Channel
Stage 2 Drilling Sow Belly Channel
Stage 1 Drilling East PH Channel
Stage 2 Drilling East PH Channel
Stage 1 Drilling West PH Channel
Stage 2 Drilling PH West Channel
Profile A (7 holes)
Profile B (6 holes)
Profile C (7 holes)
Profile D (10 holes)
Profile E (10 holes)
Profile F (7 holes)
Profile G offset
Profile H (10 holes)
Profile I (6 holes)
Profile J (7 holes)
Profile E (8 holes) with 2 off-set holes
TB-15
TB-16
TB30
N
T 10
T 11
T 12
SB 5
SB 6