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

July 24, 1956

Memorandum

To: The Files

From: George C. Selfridge
Special Assistant to the Administrator

Subject: Docket No. DMEA-4212 (Uranium)
Robert A. Pitzer
Mt. Hillers Property
Garfield County, Utah

Mr. Pitzer telephoned today to ask about the status of his application. The writer informed him that he would hear from us this week regarding a decision.

George C. Selfridge

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George C. Selfridge

GCSelfridge/esf
7/24/56
cc to: Docket
Admr. R. File
Mr. Selfridge

cw

700

FILE COPY
Surname:
Ching
Ellis
Kiilsgaard
Hosted
Hedge

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

23 JUL 1956

Mr. Robert A. Pitzer
125 North 8th
Post Office Box 237
Grand Junction, Colorado

Re: Docket No. DMEA-4212 (Uranium)
Mt. Millers Property
Garfield County, Utah

Dear Mr. Pitzer:

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

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

Careful study of all our information, although noting some uranium mineralization on your property, indicates to us that the probability of disclosing significant ore reserves is not sufficiently promising to justify Government participation. We regret to advise you that, under these circumstances, your application for exploration assistance is denied.

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

Sincerely yours,

Frank E. Johnson

ACTING Administrator

MChing/izm 7-19-56
cc to: Docket
Code 700
Mr. Ching
Admr.'s Reading File
Operating Committee
DMEA Field Team, Reg. III (2)
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

RCL

Docket Copy
700

Ching
Ellis

Summary of Proposed Project

July 19, 1956

Object: Denial of application for an exploration project.

Docket No.: DMEA-4212

Commodity: Uranium

Applicant: Robert A. Pitzer
125 North 8th
Post Office Box 237
Grand Junction, Colorado

Property: The Mt. Hillers property, consisting of 47 unpatented mining claims as follows: Lamar 1-15, Ada 1-12 and 15-19, Ada 15A, Happy Shep 1-7, Honky Tonk 1-2, and Don't Know 1-5, in an unsurveyed area in secs. 9, 10, 11, 12, 14, 15 and 16, T. 34 S., R. 11 E., S.L.B. and M., Garfield County, Utah. Applicant is the owner.

Date of Application: March 2, 1956

Amount of Application: $40,480.00

Work Proposed: Explore the basal unit of the Salt Wash member of the Morrison formation with a first stage of 22 holes in two rows south of the "White Cap" outcrops. Follow with 3,000 feet of drilling in a second stage. Estimated costs are as follows:

9,450 ft. plug drilling @ $2.00/ft.	$18,900.00	
4,000 ft. core drilling @ $3.00/ft.	12,000.00	
240 hrs. bulldozing @ $17.00/hr.	4,080.00	
Labor, supervision, consultants	4,500.00	
Miscellaneous	1,000.00	
TOTAL		$40,480.00
Government Participation @ 75%		$30,360.00

Field Team Report: Transmitted June 29, 1956
W. E. Young, USBM and Howard F. Albee, USGS:

The property lies at the south flank of Mount Hillers where the Salt Wash member is exposed in four places known locally as "Whitecaps." The intrusion of the Mount Hillers stock has tilted the sediments so that the Salt Wash dips as much as 82 degrees at the outcrops. Uranium mineralization occurs near the basal part of the Salt Wash which is about 420 feet thick in this area. To reach the basal horizon drilling depths would range from 300 to 700 feet. Inasmuch as the known ore bodies in this area are small, generally containing less than 5 tons each, these depths are much too great for the size of ore bodies that might be found.

In places these small ore bodies are clustered, and when near the surface, can be mined. However, the largest cluster mined from the area produced only 184 tons of ore. There are no known ore bodies present on the subject property although anomalous radioactivity about three times normal background was observed along the basal Salt Wash outcrop. An adit 105 feet in length driven into one outcrop, intersected the basal portion of the Salt Wash. Some material below ore grade was extracted. Recommendation is made that the application be denied.

Commodity Group Comments:

USGS, N. E. Nelson, July 10, 1956:

The Applicant wishes to explore the down-dip extensions of slightly mineralized outcrops of the Salt Wash sandstones and shales on the theory that the uranium values near the outcrop have been leached and possibly redeposited at lower levels. The "hinge" where the dips change abruptly and other irregularities might constitute traps and be the locus of higher uranium values. Since little evidence in support of this theory was found concurs with the Field Team's recommendation that the application be denied.

USBM, James Paone, July 11, 1956:

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

Rare & Misc. Metals Div., Michael Ching, July 19, 1956:

It does not appear likely that more mineralized material will be found in depth than at the uptilted "Whitecap" outcrops. Since drilling depths would be great and potential ore bodies small, an exploration project is not warranted.

Conclusions and Recommendations:

The chances of finding ore bodies by the proposed exploration are not good, and if found, they would not be of significant size. It is recommended that the application be denied.

~~Sincerely yours~~,

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

7-13-56

RECEIVED
JUL 13 1956

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

July 11, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

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

Subject: Report of Examination, DMEA Docket 4212 (Uranium)
Robert A. Pitzer (Mt. Hillers group of claims) Garfield County, Utah

I have reviewed the report of examination, DMEA Docket 4212, Robert A. Pitzer (Mt. Hillers group of claims) Garfield County, Utah, dated May 24 and received in this office July 9, 1956. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The examining team recommend that the request for Government assistance be denied because an exploration project is not justified for the type of mineralization exposed and the type of sandstone occurring in the area. The cost of exploration in the area will be excessive and unwarranted in view of the low-grade mineralization encountered.

We concur in the denial.

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

James Paone

James Paone

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

RECEIVED
JUL 13 1956

July 11, 1956

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To: Ernest William Ellis, DMEA Member
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We concur in the denial.

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

James Paone

7-11-56

IN REPLY REFER TO:

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

RECEIVED
JUL 11 1956

July 10, 1956

Re: DMEA 4212
Robert A. Pitzer
Mt. Hillers Group
Garfield Co., Utah
$40,480.00 - Uranium

Memorandum

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

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

Subject: Review of Field Team report.

The applicant requested assistance in exploring by deep core and plug drilling the down dip extensions of the slightly mineralized outcrops of Salt Wash sandstones and shale.

The rocks where they crop out on the flanks of Mt. Hiller have steep dips, 55-82°, but flatten abruptly at some lower point to about 10°.

The applicant based the application on the theory that the uranium values near the outcrop have been leached and possibly redeposited at lower levels. The 'hinge' where the dips change abruptly and other irregularities might constitute traps and be the locus of higher uranium values.

The examiners found little evidence in support of the general theory, and as the orebodies in the area are characteristically small, it would not be worthwhile to search for the like through from 300 to 700 feet of cover rocks.

The conclusion appears to fit the case and the recommendation of denial of the examiners and the Field Team is in keeping.

I concur with that recommendation.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

RECEIVED
JUL 11 1956

July 10, 1956

Re: DMEA 4212
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The conclusion appears to fit the case and the recommendation of denial of the examiners and the Field Team is in keeping.

I concur with that recommendation.

NENelson:btr
G 7/10/56

N. E. Nelson

N. E. Nelson

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

7-10-56

RECEIVED
JUL 2 - 1956

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

224 New Customhouse
Denver 2, Colorado

June 29, 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, Docket DMEA 4212 (Uranium) Robert A. Pitzer (Mt. Hillers group of claims) Garfield County, Utah

Enclosed are the original and three copies of an engineering and geologic report of examination on the subject property.

The field examiners believe that a significant amount of Uranium ore would not be found as a result of the proposed exploration. They recommend that the application be denied. We concur in this recommendation.

Reviewed by
DMEA OPERATING COMMITTEE
7-9-56
(date)

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

RECEIVED JUL 2 - 1956

DMEA
Date Rec'd.
MAY 23 1956
BUREAU OF MINES
Denver, Colorado

May 24, 1956

TRANSMITTED
JUN 29 1956

Memorandum

To: J. W. Townsend, Acting Executive Officer, DMEA Field Team, Region III

From: Stephen R. Wilson

Subject: Docket No. DMEA-4212 (Uranium), Robert A. Pitzer, (Mt. Hillers property), Garfield County, Utah

Enclosed are the original and ten copies of an engineering report relative to examination of the subject property for DMEA loan appraisal. The report was prepared by W. E. Young as a result of a joint examination made with H. F. Albee, Geological Survey, Grand Junction, Colorado. Also included is the original brochure transmitted to this office by John F. Shaw.

The applicant has requested a loan of $40,480 to drill 27 rotary-drill holes. A total of 47 unpatented lode claims is owned by the applicant. Uranium mineralization on the property is found near the basal part of the Salt Wash sandstone member of the Morrison formation. The mineralization is confined chiefly to a thin shale bed and is too low in grade near the surface to be commercially significant. The proposed drilling will require penetration of the full thickness of the Morrison formation which may be as great as 700 feet. Because of the low-grade uranium mineralization and the probable high cost of exploration as a result of the thickness of the Morrison formation, the examining engineer recommends that the loan request be denied. I am in accord with this recommendation.

The Mt. Hillers property was discussed with members of the Atomic Energy Commission.

Stephen R. Wilson
Stephen R. Wilson

Enclosure

cc: John F. Shaw
J. Bruce Clemmer

Reviewed by
DMEA OPERATING COMMITTEE
7-9-56
(date)

ROBERT A. PITZER
MT. HILLERS PROPERTY
GARFIELD COUNTY, UTAH
DMEA-4212
Uranium

RECEIVED
JUL 2 - 1956

TRANSMITTED
JUN 29 1956

Engineering Report

By W. E. Young
Mining Engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
7-9-56
(date)

ROBERT A. PITZER
MT. HILLERS PROPERTY
GARFIELD COUNTY, UTAH

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ILLUSTRATIONS

Fig. 1 Location map, Robert A. Pitzer, Mt. Hillers property, Garfield County, Utah

Fig. 2 Claim map

RECEIVED
JUL 2 - 1956

SUMMARY

The claims of Robert A. Pitzer, located on the south flank of Mt. Hillers laccolith, cover an outcrop of the Salt Wash sandstone member of the Morrison formation. Uranium mineralization occurs near the basal part of the truncated Salt Wash sandstone. The mineralization is confined to a thin shale member and is too low in grade near the surface to be economic. The applicant proposes to drill the formation at some distance from the laccolith, in which area the beds regain a near-horizontal position. It is theorized that this structure offers ideal conditions for leaching and redeposition of uranium. Cost of exploration in the area will be high because of excessive thickness of bedding. An exploratory project is not justified for the type of mineralization exposed and the type of sandstone occurring in the area. It is recommended that the request for Government assistance be denied.

INTRODUCTION

The property of Robert A. Pitzer was examined May 8, 1956, by a geologist of the Geological Survey and an engineer of the Bureau of Mines. Examination was made at the request of the Regional Field Team to determine the advisability of granting a Government-assistance loan. Robert A. Pitzer, owner, accompanied the examining personnel over the property.

The applicant proposes to explore the property by drilling 27 rotary drill holes. The estimated cost is $40,480.

LOCATION, TOPOGRAPHY AND PHYSICAL FEATURES

The property is located 52 miles south of Hanksville, Utah, on the south slope of Mt. Hillers. The claims lie in unsurveyed area but are tied to a section corner by stadia traverse. They are described in unsurveyed sections 9, 10, 11, 12, 14, 15 and 16, T. 34 S., R. 11 E., S.L.B. and M. (fig. 2).

Shipping points are located at Green River, Utah, and at the AEC buying station at White Canyon. Green River, Utah is 124 miles from the property; White Canyon is approximately 50 miles via ferry across the Colorado River at Hite, Utah.

OWNERSHIP, HISTORY AND PRODUCTION

A total of 47 mining claims is included in the group proposed for exploration. The claims are held by Robert A. Pitzer by right of location. Notices of location are recorded in the office of the Garfield County Recorder at Panguitch, Utah.

A list of the unpatented mining claims is as follows:

Claim	Book	Page	
Lamar #1	82	371	Amended Notice of Location
" #2	"	372	" " " "
" #3	"	373	" " " "
" #4	"	374	" " " "
" #5	"	375	" " " "
" #6	"	376	" " " "
" #7	"	377	" " " "
" #8	"	378	" " " "
" #9	"	379	" " " "
" #10	"	380	" " " "
" #11	"	381	" " " "
" #12	"	382	" " " "
" #13	"	383	" " " "
" #14	"	384	" " " "
" #15	"	385	" " " "

Claim	Book	Page	
Ada #1	82	386	Amended Notice of Location
" #2	"	387	" " " "
" #3	"	388	" " " "
" #4	"	389	" " " "
" #5	"	390	" " " "
" #6	"	391	" " " "
" #7	"	392	" " " "
" #8	"	393	" " " "
" #9	"	394	" " " "
" #10	"	395	" " " "
" #11	85	220	Notice of Relocation
" #12	82	396	Amended Notice of Location
" #15	"	397	Notice of Location
" #15A	"	398	" " "
" #16	"	399	" " "
" #17	"	400	" " "
" #18	"	401	" " "
" #19	"	402	" " "
Happy Shep #1	"	403	Amended Notice of Location
" " #2	"	404	" " " "
" " #3	"	405	" " " "
" " #4	"	406	" " " "
" " #5	"	407	" " " "
" " #6	"	408	" " " "
" " #7	"	409	" " " "
Honky Tonk #1	"	410	" " " "
" " #2	"	411	" " " "
Don't Know #1	"	412	Notice of Location
" " #2	"	413	" " " "
" " #3	"	414	" " "
" " #4	"	415	" " "
" " #5	"	416	" " "

Exploration completed on the property to date consists of an access road, numerous small pits, and one adit 105 feet long. There has been no production from the claims or from any property in the general area. There are no known developed ore bodies.

DESCRIPTION OF THE DEPOSITS

The claim group is located on the south flank of the Mt. Hillers laccolith. Truncated exposure of sediments represents beds ranging in age from Permian to Cretaceous. Near the intrusive the full section of beds has a near-vertical dip, and a short distance away from the intrusive the beds all assume a near-horizontal position. The claims cover an outcrop of the Salt Wash sandstone member of the Morrison formation. The truncated edge of the basal part of the Salt Wash is exposed as whitecaps along the base of the mountain. These exposures stand out, whereas the rest of the Salt Wash and Brushy Basin members are covered with alluvium and talus. The Salt Wash sandstone in the area has a known thickness of more than 400 feet. The Brushy Basin member has a thickness greater than 300 feet. The Salt Wash member is a clean, fine-grained sandstone, with occasional thin shale members. The basal contact of the Salt Wash with the Summerville is poorly exposed because of alluvium. A thin shale member, apparently near the base of the Salt Wash, outcrops across each of the four whitecap exposures. Radiometric highs about three times the normal background count can be obtained along the outcrop of the shale member. The applicant has driven an adit 105 feet in length into one of the whitecaps. The adit intersects a portion of the Salt Wash near its base and cuts the shale member exposed at the surface. Some material below ore grade was extracted from this section.

PROJECT PROPOSALS

The applicant proposes to further explore the property by drilling. Eleven holes are designed to penetrate the full thickness of the Salt Wash member of the Morrison formation. The initial holes are estimated at 450 feet in depth and are spaced at 500-foot intervals along the outcrop. Another row of 11 holes, on 500-foot centers, 400 feet south of the first row, is also proposed. Depth of these holes is estimated at 500 feet. This constitutes stage one of the project. At this point the project is to be evaluated and if successful, 3,000 feet of additional drilling is to be allotted for offsetting ore holes. The applicant, on the basis of the above drilling, estimates a total of 27 holes aggregating 13,450 feet. It is further estimated that 4,000 feet of core drilling will be required to test ore horizons in the Salt Wash. Bulldozer work for access roads and drill sites is estimated at 240 hours.

Actually the depth of drilling for the second row of holes must be increased to an average of 700 feet because of the probable thickness of the Morrison formation in this area. This will increase the drilling footage to 15,400 feet for 27 holes. The necessary bulldozer work can probably be accomplished in 150 hours.

PROJECT COSTS

The applicant has submitted three sets of bids for drilling and three sets of bids for bulldozer work. The estimated time for completion of the work is 3 months. Based on the lowest bids submitted, the following project costs are estimated:

Independent Contracts

Drilling, 27 holes, 15,400 feet

Noncore
0' - 300', 8,100' at $1.65 -- $13,365.00
300' - 600', 3,300' at $1.85 -- 6,105.00

Total, noncore ---------- $19,470.00

Core
4,000 feet at $3.75 ---------- 15,000.00

Total drilling ---------- $34,470.00

Bulldozer work

RD-7, 150 hours at $12 per hour ---------- 1,800.00

Total, independent contracts ---------- $36,270.00

Supervision

Supervision includes direction of drilling, surveying, mapping, probing, and logging of holes and sampling

1 supervisor, 3 months at $500 per month ----	$ 1,500.00	
1 surveyor, ½ month at $650 per month -------	325.00	
1 geologist, 1 month at $650 per month ------	650.00	
1 bookkeeper, 1 month at $500 per month -----	500.00	
Total, supervision ----------		2,975.00

Operating Materials and Supplies

Gasoline and oil ----------	$ 400.00	
Core boxes, 100 at $0.75 ----------	75.00	
Sample sacks, 100 at $0.40 ----------	40.00	
Total, operating materials and supplies ----------		515.00

Operating Equipment

1 jeep (approximate value $3,000)

Depreciation over 36 months, 3 months at $83.33 per month - 250.00

Miscellaneous

Assaying, 200 samples at $5 each ---------- 1,000.00

Total, estimated cost of project ---------- $41,010.00

CONCLUSIONS AND RECOMMENDATIONS

Uranium mineralization occurs in a thin shale member near the base of the Salt Wash member of the Morrison formation, on the property of Robert A. Pitzer. The Salt Wash is known to be in excess of 400 feet thick in the area. It consists of clean, fine-grained sandstone, with thin shale members near the base. The overlying Brushy Basin is known to be in excess of 300 feet thick. Exploration on the property will be costly because of the thickness of the Morrison formation. Government participation in exploration of the type mineralization therefore does not appear warranted. Recommendation is made that the request for Government assistance be denied.

MINERAL DEPOSITS
DMEA
RECEIVED
JUN 28 1956
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

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

RECEIVED
JUL 2 - 1956

TRANSMITTED
JUN 29 1956

June 27, 1956

JUN 30 1956
BUREAU OF MINES
Denver, Colorado

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman

From: J. William Hasler

Subject: Transmittal of geologic report of examination, Robert A. Pitzer DMEA docket 4212 (Uranium), Mt. Hillers group of claims, Garfield County, Utah

Mr. Robert A. Pitzer applied to the Defense Minerals Exploration Administration for assistance to explore for uranium on the Mt. Hillers group of claims, Garfield County, Utah.

The application was referred to the field and an examination was made May 8, 1956, by W. E. Young, U. S. Bureau of Mines, and H. F. Albee, U. S. Geological Survey. Mr. Pitzer accompanied the examining team.

The property lies on the south flank of Mt. Hillers where the Salt Wash member of the Morrison formation is exposed in three places, locally known as the "Whitecaps". The Salt Wash dips as much as 82° in this area. The ore deposits in the area of the property are generally small, amounting to only a few tons each. There are no known deposits on the property and an exploration program to reach such deposits may extend as much as 700 feet in depth. To date there are no known ore bodies in this area in the Morrison formation that could be mined at such excessive depths.

In view of the fact that the ore bodies in the area are small and that drilling depths to these small ore bodies are excessive, it is recommended that the application be denied.

The Atomic Energy Commission was consulted relative to the evaluation of the property and they gave much valuable assistance. I concur with the conclusions and recommendations of the examining team.

Enclosed are the necessary figures for inclusion in an individual geologic report, as well as the applicant's brochure.

J. William Hasler
J. William Hasler,
Geologist

JWH/mlr
Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
7-9-56
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Fred A. Seaton, Secretary

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

RECEIVED
JUL 2 - 1956
TRANSMITTED
JUN 29 1956

DMEA 4212

Robert A. Pitzer, Mt. Hillers property

Garfield County, Utah

Uranium

Geologic report

by

Howard F. Albee,
U. S. Geological Survey

June 1956

Reviewed by
DMEA OPERATING COMMITTEE
7-9-56
(date)

INTRODUCTION AND SUMMARY

Robert A. Pitzer has applied to Defense Minerals Exploration Administration for assistance to explore for uranium on his Mt. Hillers group of claims, Garfield County, Utah. The applicant proposes to expend $40,480.00 for exploration by drilling 9,450 feet of plug drilling and 4,000 feet of core drilling in the Salt Wash member of the Morrison formation.

The claims lie in T. 34S., R. 11E., SLPM., in unsurveyed sections on the south flank of Mt. Hillers. The claims are accessible from Hanksville, Utah by 50 miles of improved access road. The road is open all year except for short periods of heavy summer rain.

The property was examined May 8, 1956 by W. E. Young, U. S. Bureau of Mines, and Howard F. Albee, U. S. Geological Survey, in company with the applicant, R. A. Pitzer.

Ore deposits in the general area are small, commonly only a few tons each. However, on the property no ore deposits are known. There is no known reason to expect ore deposits on the property, if they are present, to be larger than in other parts of the area. Drilling depths would range from about 300 feet to as much as 700 feet. These depths are unreasonably great for the size of ore bodies that could be expected. The examining team recommends that the application for assistance be denied.

The Atomic Energy Commission gave much valuable assistance in the evaluation of the property.

GEOLOGY AND ORE DEPOSITS

The Henry Mountains Basin is the major structural element of the region exclusive of that produced by the intrusion of the Henry Mountains. The basin is assymetrical with the Waterpocket fold forming the steep west flank.

The intrusion of the Mount Hillers stock has arched sediments in an arcuate pattern around the southern slope of the mountain with dips as high as 82 degrees south. A short distance south of the stock, dips flatten abruptly to less than 10 degrees.

The property lies at the south flank of Mount Hillers where the Salt Wash member of the Morrison formation is exposed in three places known locally as the "Whitecaps". The Salt Wash dips as much as 82 degrees at these exposures. The "Whitecaps" of Salt Wash have been bleached from the typical light gray, or buff of other areas, to white.

The Salt Wash on the property consists predominantly of fluviatile deposits of sandstone with lenses of conglomerate and minor mudstone. Logs and small fragments of silicified and carbonized wood are present in minor amounts and locally as concentrations.

A chert granule conglomerate occurs from 10 to 20 feet above the base of the Salt Wash. This conglomerate is anomalously radioactive over most of its exposed length but no concentrations of ore grade material were noted.

Atomic Energy Commission geologists have noted mineralized material in outcrops about 100 feet above the base of the Salt Wash. The material assayed less than 0.05 percent U_3O_8 and was mostly in the form of sparse coatings of carnotite in fractures in sandstone.

The Salt Wash in the south Henry Mountains area averages 420 feet thick and the ore bodies occur in the lower 100 feet. The ore bodies consist of small thin lenses of carnotite-impregnated sandstone and contain abundant carbon trash. The ore bodies average from three to five feet wide and generally contain less than five tons each. In places these small ore bodies are clustered and when near the surface can be mined. The largest cluster mined from the area produced 184 tons of ore.

Where such ore bodies are deep, mining or exploration for them is not economically feasible. Such is the case on the subject property. No known ore bodies are present and the ore-bearing horizon ranges from 300 to 700 feet below the surface. A drilling project designed for the size of ore bodies that could be expected would necessarily be on a spacing not greater than 20 feet.

PROPOSED EXPLORATION

The applicant proposes to drill 13,450 feet, of which 9,450 feet is to be non-core drilling at $2.00 per foot, and 4,000 feet is to be core drilled at $3.00 per foot. Two fences of 11 holes each are proposed with an estimated average depth of 611+ feet.

The total estimated cost of the project is $40,480.00;with Government participation at 75 percent would be $30,360.00.

Inasmuch as the examining team recommends denial of the application, an alternate drill program will not be proposed.

CONCLUSIONS AND RECOMMENDATIONS

Ore bodies in the area are small, usually less than five tons, and drilling depths to the ore horizon are as much as 700 feet. Ore bodies of the expected size cannot be exploited at such depths. The examining team, therefore, recommends that the application be denied.

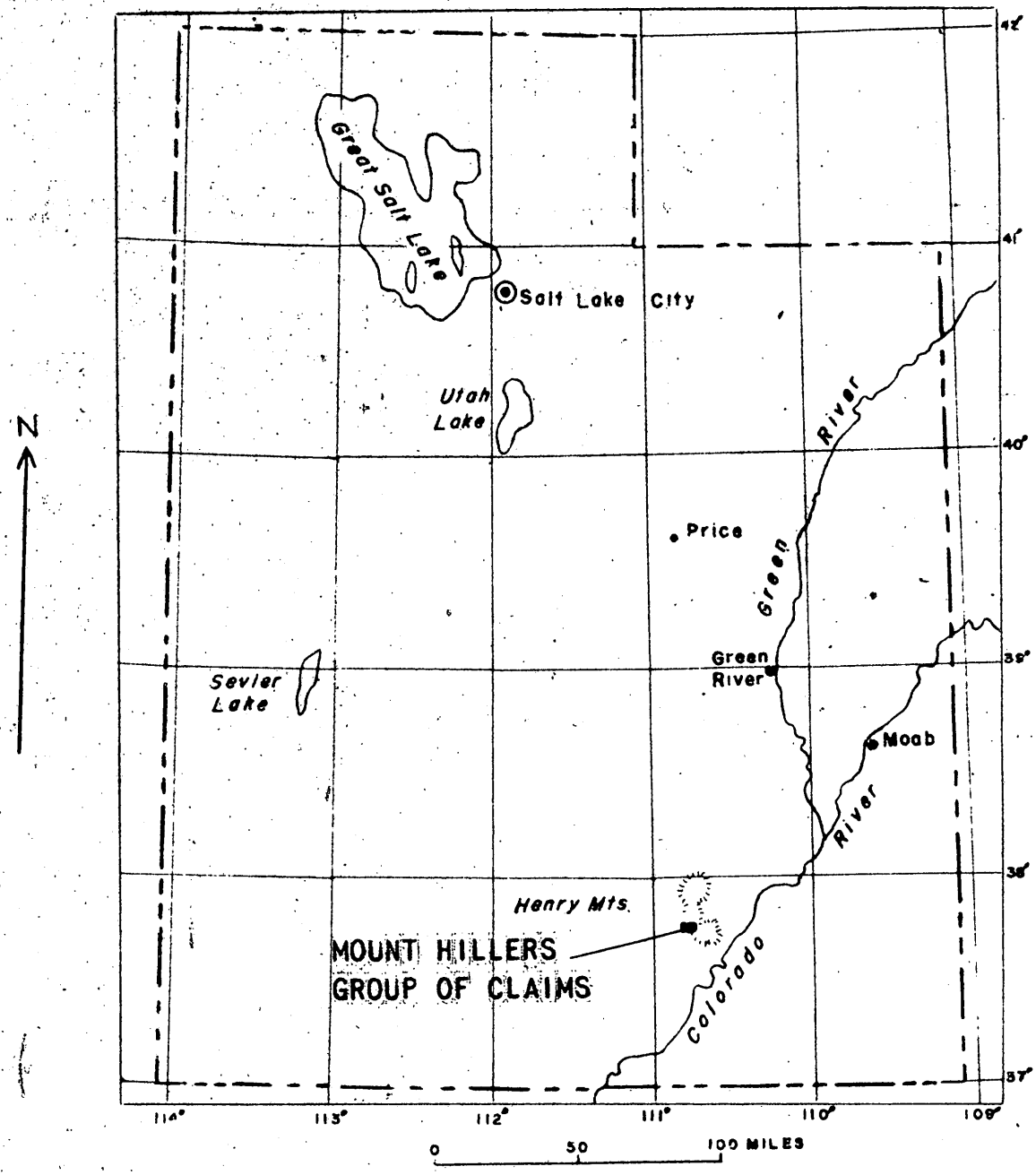
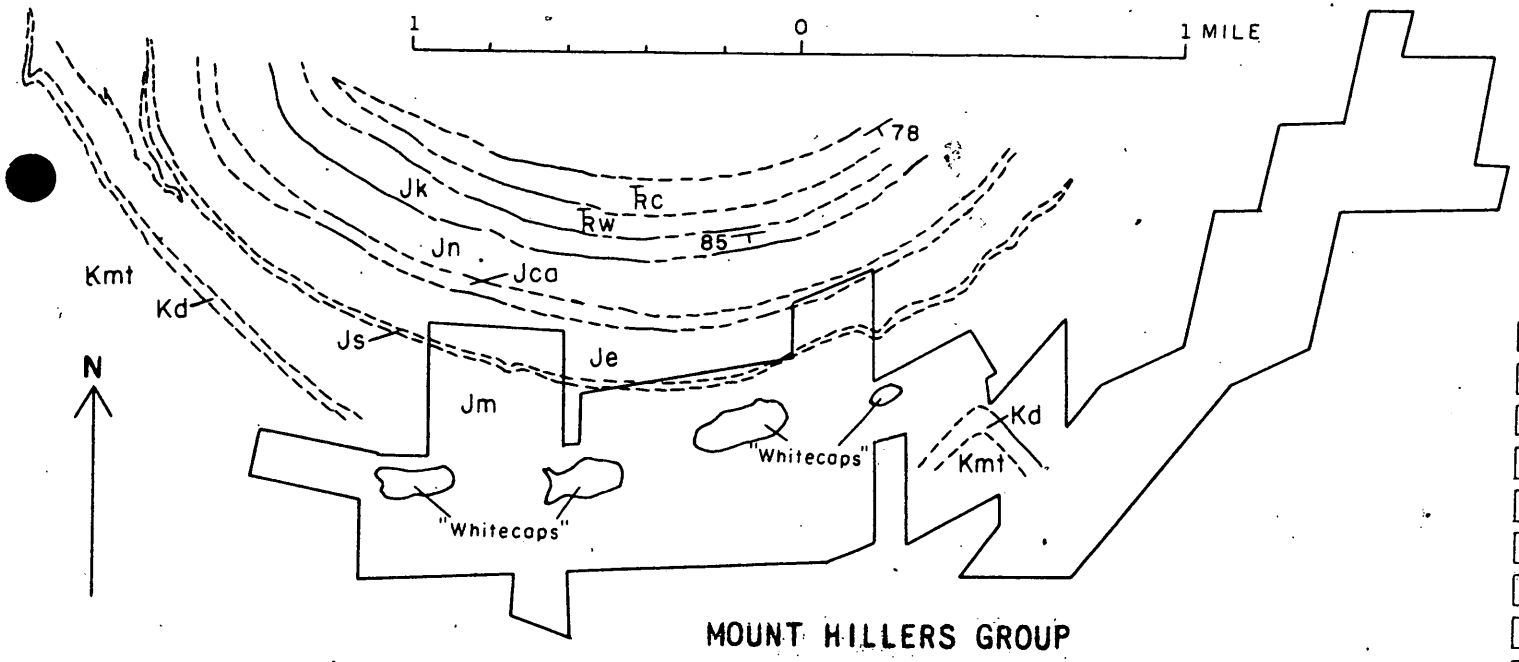


FIGURE 1. INDEX MAP OF UTAH SHOWING LOCATION OF THE MOUNT HILLERS GROUP OF CLAIMS, ROBERT A. PITZER, GARFIELD COUNTY, UTAH.

RECEIVED
JUL 2 - 1956

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JUNE 1956
DOCKET 4212



EXPLANATION

Kmt	TUNUNK SHALE MEMBER OF CRETACEOUS MANCOS SHALE
Kd	CRETACEOUS DAKOTA SANDSTONE
Jm	JURASSIC MORRISON FORMATION
Js	JURASSIC SUMMERVILLE FORMATION
Je	JURASSIC ENTRADA SANDSTONE
Jca	JURASSIC CARMEL FORMATION
Jn	JURASSIC(?) NAVAJO FORMATION
Jk	JURASSIC(?) KAYENTA FORMATION
Ꞧw	TRIASSIC WINGATE SANDSTONE
Ꞧc	TRIASSIC CHINLE FORMATION
- - -	GEOLOGIC CONTACT, DASHED WHERE APPROXIMATELY LOCATED
78	STRIKE AND DIP OF BEDS

Note: GEOLOGY MODIFIED FROM C.B. HUNT'S PROFESSIONAL PAPER 228 PLATE 12. PROPERTY BOUNDARY FROM APPLICANTS MAP.

FIGURE 2. GEOLOGIC MAP SHOWING THE MOUNT HILLERS GROUP OF CLAIMS, ROBERT A. PITZER, GARFIELD COUNTY, UTAH.

7-3-56

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

224 New Customhouse
Denver 2, Colorado

RECEIVED
JUL 2 - 1956

June 29, 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, Docket DMEA 4212 (Uranium) Robert A. Pitner (Mt. Hilbern group of claims) Garfield County, Utah

Enclosed are the original and three copies of an engineering and geologic report of examination on the subject property.

The field examiners believe that a significant amount of Uranium ore would not be found as a result of the proposed exploration. They recommend that the application be denied. We concur in this recommendation.

DMEA Field Team, Region III

By W. M. Traver

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
7-9-56
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY 1, UTAH

DMEA
Date Rec'd.
MAY 23 1956
BUREAU OF MINES
Denver, Colorado

RECEIVED
JUL 2 - 1956

May 24, 1956

TRANSMITTED
JUN 29 1956

Memorandum

To: J. W. Townsend, Acting Executive Officer, DMEA Field Team, Region III

From: Stephen R. Wilson

Subject: Docket No. DMEA-4212 (Uranium), Robert A. Pitzer, (Mt. Millers property), Garfield County, Utah

Enclosed are the original and ten copies of an engineering report relative to examination of the subject property for DMEA loan appraisal. The report was prepared by W. E. Young as a result of a joint examination made with H. F. Albee, Geological Survey, Grand Junction, Colorado. Also included is the original brochure transmitted to this office by John F. Shaw.

The applicant has requested a loan of $40,480 to drill 27 rotary-drill holes. A total of 47 unpatented lode claims is owned by the applicant. Uranium mineralization on the property is found near the basal part of the Salt Wash sandstone member of the Morrison formation. The mineralization is confined chiefly to a thin shale bed and is too low in grade near the surface to be commercially significant. The proposed drilling will require penetration of the full thickness of the Morrison formation which may be as great as 700 feet. Because of the low-grade uranium mineralization and the probable high cost of exploration as a result of the thickness of the Morrison formation, the examining engineer recommends that the loan request be denied. I am in accord with this recommendation.

The Mt. Millers property was discussed with members of the Atomic Energy Commission.

Stephen R. Wilson
Stephen R. Wilson

Enclosure

cc: John F. Shaw
J. Bruce Clemmer

Reviewed by
DMEA OPERATING COMMITTEE
7-9-56
(date)

RECEIVED
JUL 2 - 1956

ROBERT A. PITZER
MT. HILLERS PROPERTY
GARFIELD COUNTY, UTAH
DMEA-4212
Uranium

TRANSMITTED
JUN 29 1956

Engineering Report

By W. E. Young
Mining Engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
7-9-56
(Date)

ROBERT A. PITZER
MT. MILLERS PROPERTY
GARFIELD COUNTY, UTAH

CONTENTS

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Summary	2
Introduction	2
Location, topography and physical features	3
Ownership, history and production	3
Description of the deposits	5
Project proposals	6
Project costs	6
Conclusions and recommendations	8

ILLUSTRATIONS

Fig. 1 Location map, Robert A. Pitzer, Mt. Millers property, Garfield County, Utah

Fig. 2 Claim map

RECEIVED
JUL 2 - 1956

SUMMARY

The claims of Robert A. Pitzer, located on the south flank of Mt. Hillers laccolith, cover an outcrop of the Salt Wash sandstone member of the Morrison formation. Uranium mineralization occurs near the basal part of the truncated Salt Wash sandstone. The mineralization is confined to a thin shale member and is too low in grade near the surface to be economic. The applicant proposes to drill the formation at some distance from the laccolith, in which area the beds regain a near-horizontal position. It is theorized that this structure offers ideal conditions for leaching and redeposition of uranium. Cost of exploration in the area will be high because of excessive thickness of bedding. An exploratory project is not justified for the type of mineralization exposed and the type of sandstone occurring in the area. It is recommended that the request for Government assistance be denied.

INTRODUCTION

The property of Robert A. Pitzer was examined May 8, 1956, by a geologist of the Geological Survey and an engineer of the Bureau of Mines. Examination was made at the request of the Regional Field Team to determine the advisability of granting a Government-assistance loan. Robert A. Pitzer, owner, accompanied the examining personnel over the property.

The applicant proposes to explore the property by drilling 27 rotary drill holes. The estimated cost is $40,480.

LOCATION, TOPOGRAPHY AND PHYSICAL FEATURES

The property is located 52 miles south of Hanksville, Utah, on the south slope of Mt. Hillers. The claims lie in unsurveyed area but are tied to a section corner by stadia traverse. They are described in unsurveyed sections 9, 10, 11, 12, 14, 15 and 16, T. 34 S., R. 11 E., S.L.B. and M. (fig. 2).

Shipping points are located at Green River, Utah, and at the AEC buying station at White Canyon. Green River, Utah is 124 miles from the property; White Canyon is approximately 50 miles via ferry across the Colorado River at Hite, Utah.

OWNERSHIP, HISTORY AND PRODUCTION

A total of 47 mining claims is included in the group proposed for exploration. The claims are held by Robert A. Fitzer by right of location. Notices of location are recorded in the office of the Garfield County Recorder at Panguitch, Utah.

A list of the unpatented mining claims is as follows:

Claim	Book	Page	
Lamar #1	82	371	Amended Notice of Location
" #2	"	372	" " " "
" #3	"	373	" " " "
" #4	"	374	" " " "
" #5	"	375	" " " "
" #6	"	376	" " " "
" #7	"	377	" " " "
" #8	"	378	" " " "
" #9	"	379	" " " "
" #10	"	380	" " " "
" #11	"	381	" " " "
" #12	"	382	" " " "
" #13	"	383	" " " "
" #14	"	384	" " " "
" #15	"	385	" " " "

Claim	Book	Page	
Ada #1	82	386	Amended Notice of Location
" #2	"	387	" " " "
" #3	"	388	" " " "
" #4	"	389	" " " "
" #5	"	390	" " " "
" #6	"	391	" " " "
" #7	"	392	" " " "
" #8	"	393	" " " "
" #9	"	394	" " " "
" #10	"	395	" " " "
" #11	85	220	Notice of Relocation
" #12	82	396	Amended Notice of Location
" #15	"	397	Notice of Location
" #15A	"	398	" " "
" #16	"	399	" " "
" #17	"	400	" " "
" #18	"	401	" " "
" #19	"	402	" " "
Happy Shop #1	"	403	Amended Notice of Location
" " #2	"	404	" " " "
" " #3	"	405	" " " "
" " #4	"	406	" " " "
" " #5	"	407	" " " "
" " #6	"	408	" " " "
" " #7	"	409	" " " "
Honky Tonk #1	"	410	" " " "
" " #2	"	411	" " " "
Don't Know #1	"	412	Notice of Location
" " #2	"	413	" " "
" " #3	"	414	" " "
" " #4	"	415	" " "
" " #5	"	416	" " "

Exploration completed on the property to date consists of an access road, numerous small pits, and one adit 105 feet long. There has been no production from the claims or from any property in the general area. There are no known developed ore bodies.

DESCRIPTION OF THE DEPOSITS

The claim group is located on the south flank of the Mt. Millers laccolith. Truncated exposure of sediments represents beds ranging in age from Permian to Cretaceous. Near the intrusive the full section of beds has a near-vertical dip, and a short distance away from the intrusive the beds all assume a near-horizontal position. The claims cover an outcrop of the Salt Wash sandstone member of the Morrison formation. The truncated edge of the basal part of the Salt Wash is exposed as whitecaps along the base of the mountain. These exposures stand out, whereas the rest of the Salt Wash and Brushy Basin members are covered with alluvium and talus. The Salt Wash sandstone in the area has a known thickness of more than 400 feet. The Brushy Basin member has a thickness greater than 300 feet. The Salt Wash member is a clean, fine-grained sandstone, with occasional thin shale members. The basal contact of the Salt Wash with the Summerville is poorly exposed because of alluvium. A thin shale member, apparently near the base of the Salt Wash, outcrops across each of the four whitecap exposures. Radiometric highs about three times the normal background count can be obtained along the outcrop of the shale member. The applicant has driven an adit 105 feet in length into one of the whitecaps. The adit intersects a portion of the Salt Wash near its base and cuts the shale member exposed at the surface. Some material below ore grade was extracted from this section.

PROJECT PROPOSALS

The applicant proposes to further explore the property by drilling. Eleven holes are designed to penetrate the full thickness of the Salt Wash member of the Morrison formation. The initial holes are estimated at 450 feet in depth and are spaced at 500-foot intervals along the outcrop. Another row of 11 holes, on 500-foot centers, 400 feet south of the first row, is also proposed. Depth of these holes is estimated at 500 feet. This constitutes stage one of the project. At this point the project is to be evaluated and if successful, 3,000 feet of additional drilling is to be allotted forcoffsetting ore holes. The applicant, on the basis of the above drilling,estimates a total of 27 holes aggregating 13,450 feet. It is further estimated that 4,000 feet of core drilling will be required to test ore horizons in the Salt Wash. Bulldozer work for access roads and drill sites is estimated at 240 hours.

Actually the depth of drilling for the second row of holes must be increased to an average of 700 feet because of the probable thickness of the Morrison formation in this area. This will increase the drilling footage to 15,400 feet for 27 holes. The necessary bulldozer work can probably be accomplished in 150 hours.

PROJECT COSTS

The applicant has submitted three sets of bids for drilling and three sets of bids for bulldozer work. The estimated time for completion of the work is 3 months. Based on the lowest bids submitted, the following project costs are estimated:

Independent Contracts

Drilling, 27 holes, 15,400 feet

Noncore
0' - 300', 8,100' at $1.65 -- $13,365.00
300' - 600', 3,300' at $1.85 -- 6,105.00

Total, noncore ---------- $19,470.00

Core
4,000 feet at $3.75 ---------- 15,000.00

Total drilling ---------- $34,470.00

Bulldozer work

RD-7, 150 hours at $12 per hour ---------- 1,800.00

Total, independent contracts ---------- $36,270.00

Supervision

Supervision includes direction of drilling, surveying, mapping, peeling, and logging of holes and sampling

1 supervisor, 3 months at $500 per month ----	$ 1,500.00	
1 surveyor, ½ month at $650 per month ------	325.00	
1 geologist, 1 month at $650 per month ------	650.00	
1 bookkeeper, 1 month at $500 per month -----	500.00	
Total, supervision ----------		2,975.00

Operating Materials and Supplies

Gasoline and oil ----------	$ 400.00	
Core boxes, 100 at $0.75 ----------	75.00	
Sample sacks, 100 at $0.40 ----------	40.00	
Total, operating materials and supplies ----------		515.00

Operating Equipment

1 jeep (approximate value $3,000)

Depreciation over 36 months, 3 months at $83.33 per month - 250.00

Miscellaneous

Assaying, 200 samples at $5 each ---------- 1,000.00

Total, estimated cost of project ---------- $41,010.00

CONCLUSIONS AND RECOMMENDATIONS

Uranium mineralization occurs in a thin shale member near the base of the Salt Wash member of the Morrison formation, on the property of Robert A. Pitzer. The Salt Wash is known to be in excess of 400 feet thick in the area. It consists of clean, fine-grained sandstone, with thin shale members near the base. The overlying Brushy Basin is known to be in excess of 300 feet thick. Exploration on the property will be costly because of the thickness of the Morrison formation. Government participation in exploration of the type mineralization therefore does not appear warranted. Recommendation is made that the request for Government assistance be denied.

MINERAL DEPOSITS
DMEA
RECEIVED
JUN 28 1956
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

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

RECEIVED
JUL 2 - 1956
TRANSMITTED
JUN 29 1956

June 27, 1956

DMEA
Date Rec'd.
JUN 29 1956
BUREAU OF MINES
Denver, Colorado

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman

From: J. William Hasler

Subject: Transmittal of geologic report of examination, Robert A. Pitzer DMEA docket 4212 (Uranium), Mt. Hillers group of claims, Garfield County, Utah

Mr. Robert A. Pitzer applied to the Defense Minerals Exploration Administration for assistance to explore for uranium on the Mt. Hillers group of claims, Garfield County, Utah.

The application was referred to the field and an examination was made May 8, 1956, by W. E. Young, U. S. Bureau of Mines, and H. F. Albee, U. S. Geological Survey. Mr. Pitzer accompanied the examining team.

The property lies on the south flank of Mt. Hillers where the Salt Wash member of the Morrison formation is exposed in three places, locally known as the "Whitecaps". The Salt Wash dips as much as 82° in this area. The ore deposits in the area of the property are generally small, amounting to only a few tons each. There are no known deposits on the property and an exploration program to reach such deposits may extend as much as 700 feet in depth. To date there are no known ore bodies in this area in the Morrison formation that could be mined at such excessive depths.

In view of the fact that the ore bodies in the area are small and that drilling depths to these small ore bodies are excessive, it is recommended that the application be denied.

The Atomic Energy Commission was consulted relative to the evaluation of the property and they gave much valuable assistance. I concur with the conclusions and recommendations of the examining team.

Enclosed are the necessary figures for inclusion in an individual geologic report, as well as the applicant's brochure.

J. William Hasler
J. William Hasler,
Geologist

JWH/mlr
Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
7-9-56
(Date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Fred A. Seaton, Secretary

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
JUN 29 1956

DMEA 4212

Robert A. Pitzer, Mt. Hillers property

Garfield County, Utah

Uranium

Geologic report

by

Howard F. Albee,
U. S. Geological Survey

June 1956

Reviewed by
DMEA OPERATING COMMITTEE
7-9-56
(date)

INTRODUCTION AND SUMMARY

Robert A. Pitzer has applied to Defense Minerals Exploration Administration for assistance to explore for uranium on his Mt. Hillers group of claims, Garfield County, Utah. The applicant proposes to expend $40,480.00 for exploration by drilling 9,450 feet of plug drilling and 4,000 feet of core drilling in the Salt Wash member of the Morrison formation.

The claims lie in T. 34S., R. 11E., SLPM., in unsurveyed sections on the south flank of Mt. Hillers. The claims are accessible from Hanksville, Utah by 50 miles of improved access road. The road is open all year except for short periods of heavy summer rain.

The property was examined May 8, 1956 by W. E. Young, U. S. Bureau of Mines, and Howard F. Albee, U. S. Geological Survey, in company with the applicant, R. A. Pitzer.

Ore deposits in the general area are small, commonly only a few tons each. However, on the property no ore deposits are known. There is no known reason to expect ore deposits on the property, if they are present, to be larger than in other parts of the area. Drilling depths would range from about 300 feet to as much as 700 feet. These depths are unreasonably great for the size of ore bodies that could be expected. The examining team recommends that the application for assistance be denied.

The Atomic Energy Commission gave much valuable assistance in the evaluation of the property.

GEOLOGY AND ORE DEPOSITS

The Henry Mountains Basin is the major structural element of the region exclusive of that produced by the intrusion of the Henry Mountains. The basin is assymetrical with the Waterpocket fold forming the steep west flank.

The intrusion of the Mount Hillers stock has arched sediments in an arcuate pattern around the southern slope of the mountain with dips as high as 82 degrees south. A short distance south of the stock, dips flatten abruptly to less than 10 degrees.

The property lies at the south flank of Mount Hillers where the Salt Wash member of the Morrison formation is exposed in three places known locally as the "Whitecaps". The Salt Wash dips as much as 82 degrees at these exposures. The "Whitecaps" of Salt Wash have been bleached from the typical light gray, or buff of other areas, to white.

The Salt Wash on the property consists predominantly of fluviatile deposits of sandstone with lenses of conglomerate and minor mudstone. Logs and small fragments of silicified and carbonized wood are present in minor amounts and locally as concentrations.

A chert granule conglomerate occurs from 10 to 20 feet above the base of the Salt Wash. This conglomerate is anomalously radioactive over most of its exposed length but no concentrations of ore grade material were noted.

Atomic Energy Commission geologists have noted mineralized material in outcrops about 100 feet above the base of the Salt Wash. The material assayed less than 0.05 percent U_3O_8 and was mostly in the form of sparse coatings of carnotite in fractures in sandstone.

The Salt Wash in the south Henry Mountains area averages 420 feet thick and the ore bodies occur in the lower 100 feet. The ore bodies consist of small thin lenses of carnotite-impregnated sandstone and contain abundant carbon trash. The ore bodies average from three to five feet wide and generally contain less than five tons each. In places these small ore bodies are clustered and when near the surface can be mined. The largest cluster mined from the area produced 184 tons of ore.

Where such ore bodies are deep, mining or exploration for them is not economically feasible. Such is the case on the subject property. No known ore bodies are present and the ore-bearing horizon ranges from 300 to 700 feet below the surface. A drilling project designed for the size of ore bodies that could be expected would necessarily be on a spacing not greater than 20 feet.

PROPOSED EXPLORATION

The applicant proposes to drill 13,450 feet, of which 9,450 feet is to be non-core drilling at $2.00 per foot, and 4,000 feet is to be core drilled at $3.00 per foot. Two fences of 11 holes each are proposed with an estimated average depth of 611+ feet.

The total estimated cost of the project is $40,480.00;with Government participation at 75 percent would be $30,360.00.

Inasmuch as the examining team recommends denial of the application, an alternate drill program will not be proposed.

CONCLUSIONS AND RECOMMENDATIONS

Ore bodies in the area are small, usually less than five tons, and drilling depths to the ore horizon are as much as 700 feet. Ore bodies of the expected size cannot be exploited at such depths. The examining team, therefore, recommends that the application be denied.

RECEIVED
JUL 2 - 1956

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JUNE 1956
DOCKET 4212

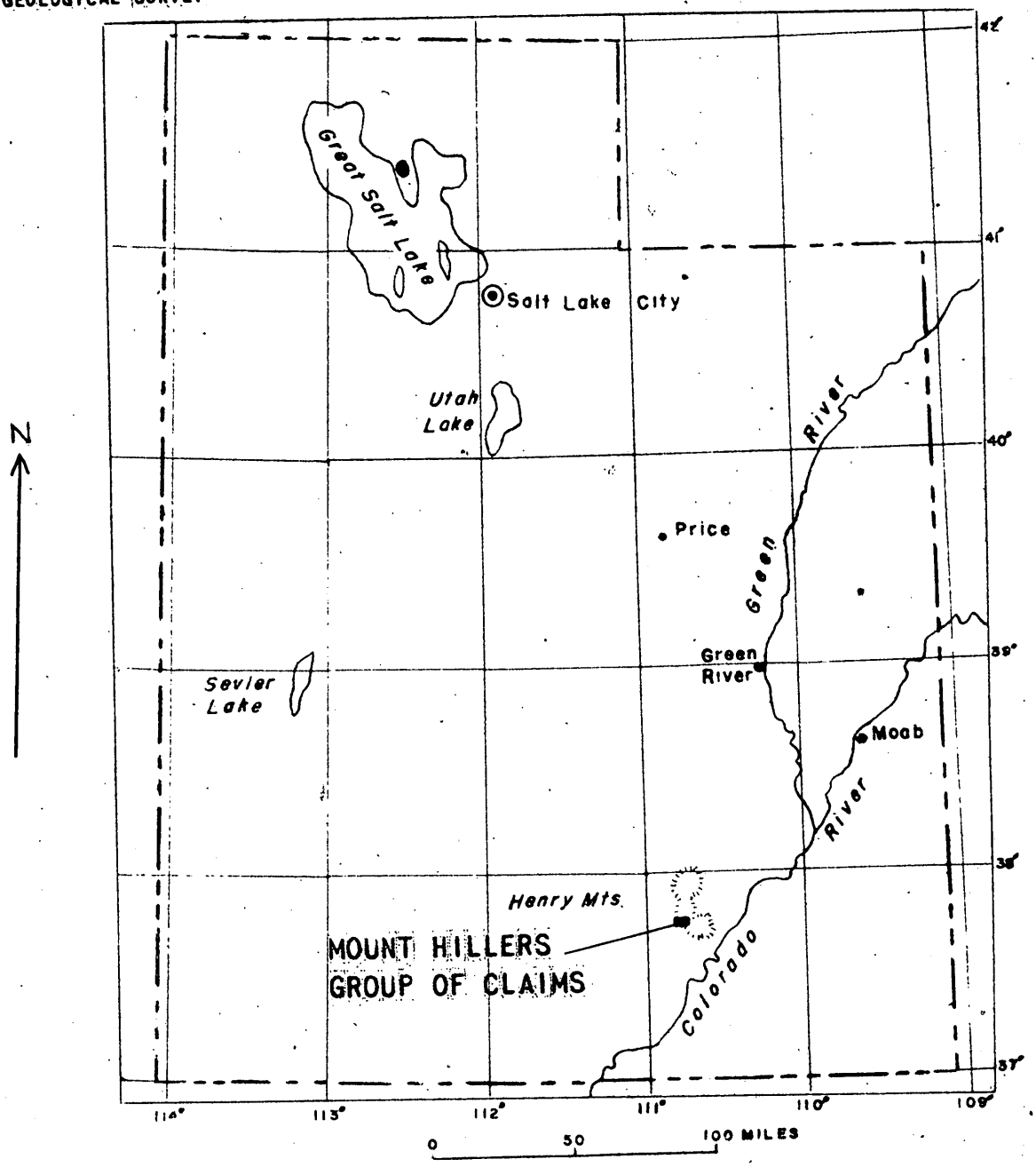
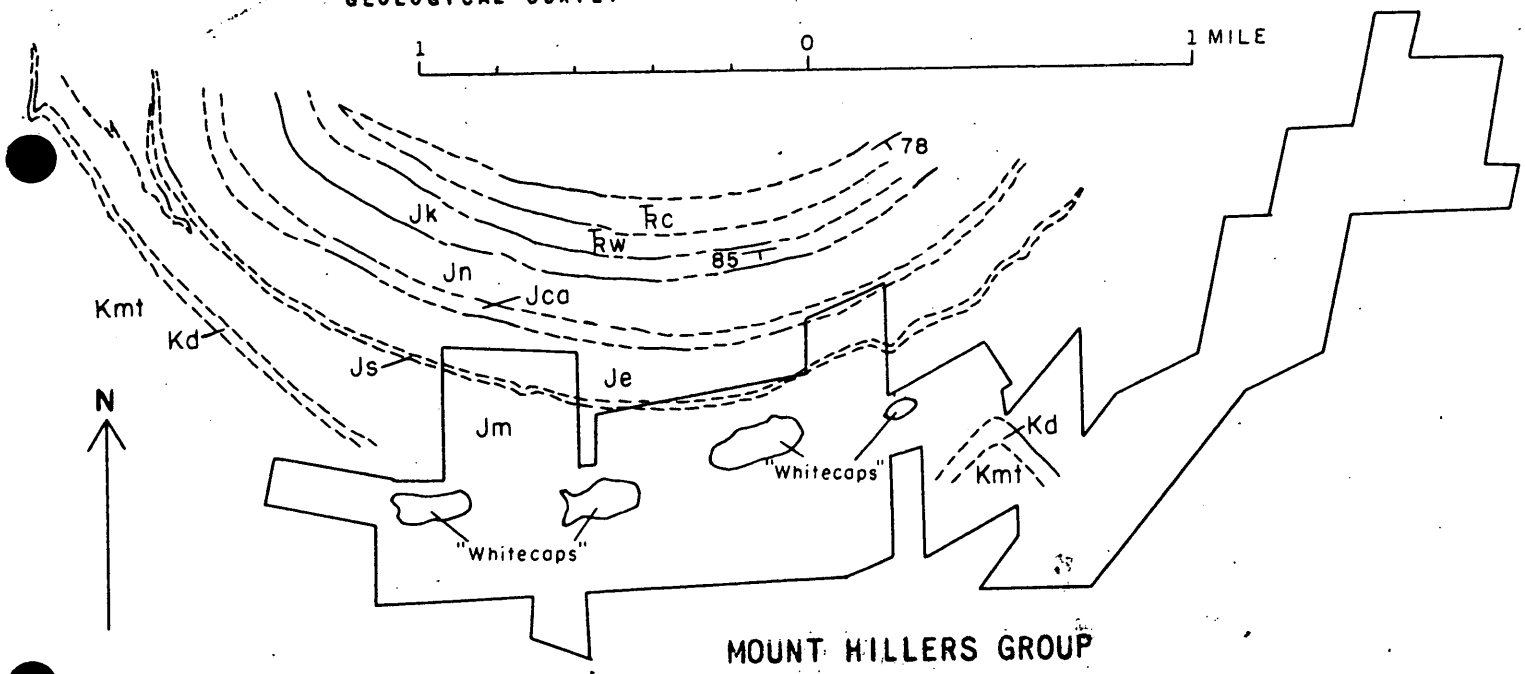


FIGURE 1. INDEX MAP OF UTAH SHOWING LOCATION OF THE MOUNT HILLERS GROUP OF CLAIMS, ROBERT A. PITZER, GARFIELD COUNTY, UTAH.

RECEIVED
JUL 2 - 1956

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
JUNE 1956
DOCKET 4212



EXPLANATION

Kmt	TUNUNK SHALE MEMBER OF CRETACEOUS MANCOS SHALE
Kd	CRETACEOUS DAKOTA SANDSTONE
Jm	JURASSIC MORRISON FORMATION
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Ꞧw	TRIASSIC WINGATE SANDSTONE
Ꞧc	TRIASSIC CHINLE FORMATION
- - -	GEOLOGIC CONTACT, DASHED WHERE APPROXIMATELY LOCATED
78	STRIKE AND DIP OF BEDS

Note: GEOLOGY MODIFIED FROM C.B. HUNT'S PROFESSIONAL PAPER 228 PLATE 12. PROPERTY BOUNDARY FROM APPLICANTS MAP.

FIGURE 2. GEOLOGIC MAP SHOWING THE MOUNT HILLERS GROUP OF CLAIMS, ROBERT A. PITZER, GARFIELD COUNTY, UTAH.

4-16-56

RECEIVED
APR 1 9 1956

April 11, 1956

Memorandum

To: E. R. Wilson

From: Superintendent, Beaver Experiment Station Reg. III

Subject: Docket DMEA 4212 (Uranium), Robert A. Pitzer (Mt. Hillers Property), Garfield County, Utah

Enclosed is the subject application in the amount of $40,480.00.

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

John F. Shaw

Enclosures

cc: W. M. Traver (3)
E. N. Harshman
J. W. Emaler
M. K. Salsbury
Sec. Op. Com. (2)

RECEIVED
APR 1 3 1956

April 11, 1956

Memorandum

To: S. N. Wilson

From: Superintendent, Denver Experiment Station Reg. III

Subject: Docket DMEA 4212 (Uranium), Robert A. Fitzer (Mt. Hillers Property), Garfield County, Utah

Enclosed is the subject application in the amount of $40,480.00.

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

John F. Shaw

Enclosures

cc: W. M. Traver (3)
E. N. Marshman
J. W. Hasler
M. E. Salsbury
Sec. Op. Com. (2)

4-9-56

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

RECEIVED
APR 9 - 1956

April 5, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: J. F. Shaw (2) (With brochure)
J. W. Hasler

From: Field Team, Region III

Subject: Docket DMEA 4212 (Uranium), Robert A. Fitzer (Mt. Hillers Property), Garfield County, Utah

Enclosed is the subject application in the amount of $40,480.00. A field examination and suitable report are requested. Also enclosed are copies of a letter from the Chairman, Operating Committee, dated April 2, 1956 and memoranda of review of the application by N. E. Nelson and John E. Crawford.

DMEA Field Team, Region III

W. M. TRAVER

By W. M. Traver
Executive Officer

Enclosures

HMC:ab

cc: Harshman
Chair. Op. Comm. (2)
Docket 4212
Chron.

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

RECEIVED
APR 9 - 1956

April 5, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: J. F. Shaw (2) (with brochure)
J. W. Hasler

From: Field Team, Region III

Subject: Docket DMEA 4212 (Uranium), Robert A. Pitzer (Mt. Hillers Property), Garfield County, Utah

Enclosed is the subject application in the amount of $40,480.00. A field examination and suitable report are requested. Also enclosed are copies of a letter from the Chairman, Operating Committee, dated April 2, 1956 and memoranda of review of the application by N. E. Nelson and John E. Crawford.

DMEA Field Team, Region III

W. M. TRAVER

By W. M. Traver
Executive Officer

Enclosures

HMC:ab

cc: Harshman
Chair. Op. Comm. (2)
Docket 4212
Chron.

Surname copy

700

Ching
Geehan
Nelson
Selfridge
Hjerson

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

APR 2 1956

Mr. Robert A. Pitzer
125 North 8th
Post Office Box 237
Grand Junction, Colorado

Re: Docket No. DMEA-4778 (Uranium)
Mt. Hillers Property
Garfield County, Utah

Dear Mr. Pitzer:

The application for assistance in exploring your property, under the captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred for a field examination to:

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

The Regional Office will contact you at the earliest opportunity in regard to your project.

Sincerely yours,

G. O. Mittendorf

Administrator

MChing/gla
3-30-56
cc to: Admr.'s Reading File
Docket
Code 700
Mr. Ching
DMEA Field Team, Region III (2)

R.A.P.

Surname copy

700

Ching
Selfridge

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

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

APR 2 1956

Re: Docket No. DMEA-4212 (Uranium)
Robert A. Pitner
Mt. Hillers Property
Garfield County, Utah

Dear Mr. Traver:

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

Enclosed are two copies each of memoranda, dated March 26, and 28, 1956, from N. E. Nelson, USGS, and John E. Crawford, USBM, respectively.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

Enclosures

APPROVED:

/s/ Robert W. Geehan
Member, Bureau of Mines

N. E. Nelson
Member, Geological Survey

MChing/gla
3-30-56
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Ching

R.C.S.

3/29/56 gla

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

RECEIVED
MAR 28 1956

March 28, 1956

RECEIVED
MAR 28 1956

Memorandum

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

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

Subject: Application for assistance, DMEA Docket 4212, Robert A. Pitzer, Mt. Hillers Property, Garfield County, Utah

I have reviewed the attached application, Mt. Hillers Property, DMEA Docket 4212, dated March 21 and received in this office March 23. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The applicant proposes to explore for uranium with Government participation by 9,450 feet of plug drilling at a unit cost of $2.00, 4,000 feet of core drilling at a unit cost of $3.00, and 240 hours of bulldozing at a unit cost of $17.00. The total estimated cost of the project is $40,480.00. A 7' X 8' "tunnel" has been driven into the Salt Wash formation outcropping on the subject property, but no significant mineralization has been encountered.

The application indicates that additional prospecting is warranted, but the area does not merit an exploration program at this time. Perhaps the field team may have information which would preclude an examination; referral to the field is recommended.

John E. Crawford

John E. Crawford

Attachment

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

RECEIVED
MAR 29 1956

March 26, 1956

[redacted]
Robert A. Pitner
Mt. Hillers Group
Garfield Co., Utah
($10,000.00 - Vanadium

Gentlemen:

To: E. R. Hide, Defense Minerals Exploration Administration

From: E. D. Ellers, U. S. Geological Survey

Subject: Review of application.

The Field Team has recommended that an examination of this property be made.

The applicant proposes assistance in exploring by drilling from the outcrop of upstanding beds of the Salt Wash member of the Morrison formation.

At several points along the east-west trending outcrop of the Salt Wash rocks uranium minerals, tyuyamunite, carnotite, and chrysocolla have been identified. Character samples of ore grade material have been taken from the outcrops and adit, but the general average is low. The idea is advanced that some of the original uranium values have been leached from the near surface rocks and have been redeposited at lower horizons where traps may have been formed, especially at the "kinks" where the dip of the beds changes from near vertical to near horizontal.

The work proposed consists of:--

2,400 feet of pilot drilling at $2.00/ft.	$4,800.00
1,000 feet of core drilling at $5.00/ft.	5,000.00
Hauls, 240 hours at $17.00	4,080.00
Labor, supervision, etc.	4,300.00
Miscellaneous	[illegible]
Total	$10,000.00

Perhaps the leaching and redeposition idea can be put to the test where a "kink" elsewhere has been exposed by erosion or in a canyon. At such places, if present, the lower of the two diamond holes should be completed.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

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

RECEIVED
MAR 29 1956

March 26, 1956

Re: [illegible]
Robert A. Pfuser
Mt. Hillers Group
Garfield Co., Utah
($6,[illegible].00 - Uranium

Memorandum

To: [illegible], Defense Minerals Exploration Administration

From: [illegible], U. S. Geological Survey

Subject: Review of application.

The Field Team has recommended that an examination of this property be made.

The applicant requests assistance in exploring by drilling some dip anticlines of upturned beds of the Salt Wash member of the Morrison Formation.

At several points along the east-west trending outcrop of the Salt Wash rocks uranium minerals, tyuyamunite, carnotite, and autunite have been identified. Character samples of ore grade material have been taken from the outcrops and adit, but the general average is low. The idea is advanced that some of the original uranium values have been leached from the near surface rocks and have been redeposited at lower horizons where traps may have been formed, especially at the "kinks" where the dip of the beds changes from near vertical to near horizontal.

The work proposed consists of:—

2,[illegible] feet of pilot drilling at $[illegible]/ft.	$[illegible],[illegible].00
[illegible] feet of core drilling at $[illegible]/ft.	12,[illegible].00
Roads, [illegible] hours at $[illegible].00	[illegible].00
Labor, supervision, etc.	[illegible].00
Miscellaneous	[illegible]
Total	$[illegible],[illegible].00

Perhaps the leaching and redeposition idea can be put to the test where a "kink" structure has been exposed by erosion of the [illegible]. At such place, if present, the issue of the loss discussed here could be complicated.

I agree with the Field Team that an examination is warranted. Referral to the Field Team is recommended.

E. E. Nelson

NENelson:iml
G-3/2 /56

cc: Director's reading, 4212
Branch reading, 4212
DMA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3[illegible]

3/27/56 gla

IN REPLY REFER TO:

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

RECEIVED
MAR 28 1956

March 26, 1956

Re: DMEA 4212
Robert A. Pitzer
Mt. Hillers Group
Garfield Co., Utah
$40,480.00 - Uranium

Memorandum

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

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

Subject: Review of application.

The Field Team has recommended that an examination of this property be made.

The applicant requests assistance in exploring by drilling down dip sections of upstanding beds of the Salt Wash member of the Morrison formation.

At several points along the east-west trending outcrop of the Salt Wash rocks uranium minerals, tyuyamunite, carnotite, and schrockingerite have been identified. Character samples of ore grade material have been taken from the outcrops and adit, but the general average is low. The idea is advanced that some of the original uranium values have been leached from the near surface rocks and have been redeposited at lower horizons where traps may have been formed, especially at the 'hinge' where the dip of the beds changes from near vertical to near horizontal.

The work proposed consists of:--

9,450 feet of plug drilling at $2.00/ft.	$18,900.00
4,000 feet of core drilling at $3.00/ft.	12,000.00
Roads, 240 hours at $17.00	4,080.00
Labor, supervision, etc.	4,500.00
Miscellaneous	1,000.00
Total	$40,480.00

Perhaps the leaching and redeposition idea can be put to the test where a 'hinge' structure has been exposed by erosion as in a canyon. At such places, if present, the tenor of the less disturbed beds should be exemplified.

Thermofax copies sent to Region

MR. SELFRIDGE:

The field exam. report will clear the Committee on 7/13/56.

Hazel

I agree with the Field Team that an examination is warranted. Referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

IN REPLY REFER TO:

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

March 26, 1956

Re: DMEA 4212
Robert A. Pitzer
Mt. Killers Group
Garfield Co., Utah
$40,480.00 - Uranium

Memorandum

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

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

Subject: Review of application.

The Field Team has recommended that an examination of this property be made.

The applicant requests assistance in exploring by drilling down dip sections of upstanding beds of the Salt Wash member of the Morrison formation.

At several points along the east-west trending outcrop of the Salt Wash rocks uranium minerals, tyuyamunite, carnotite, and sabrechingsvite have been identified. Character samples of ore grade material have been taken from the outcrops and adit, but the general average is low. The idea is advanced that some of the original uranium values have been leached from the near surface rocks and have been redeposited at lower horizons where traps may have been formed, especially at the 'hinge' where the dip of the beds changes from near vertical to near horizontal.

The work proposed consists of:--

9,450 feet of plug drilling at $2.00/ft.	$18,900.00
4,000 feet of core drilling at $3.00/ft.	12,000.00
Roads, 240 hours at $17.00	4,080.00
Labor, supervision, etc.	4,500.00
Miscellaneous	1,000.00
Total	$40,480.00

Perhaps the leaching and redeposition idea can be put to the test where a 'hinge' structure has been exposed by erosion as in a canyon. At such places, if present, the tenor of the less disturbed beds should be exemplified.

I agree with the Field Team that an examination is warranted. Referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-3/26/56

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

IN REPLY REFER TO:

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

March 26, 1956

Re: DMEA 4212
Robert A. Pitner
Mk. Millers Group
Garfield Co., Utah
$40,480.00 - Uranium

Memorandum

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

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

Subject: Review of application.

The Field Team has recommended that an examination of this property be made.

The applicant requests assistance in exploring by drilling down dip continuations of upstanding beds of the Salt Wash member of the Morrison formation.

At several points along the east-west trending outcrop of the Salt Wash rocks uranium minerals, tyuyamunite, carnotite, and autunite have been identified. Character samples of ore grade material have been taken from the outcrops and adit, but the general average is low. The idea is advanced that some of the original uranium values have been leached from the near surface rocks and have been redeposited at lower horizons where traps may have been formed, especially at the 'hinge' where the dip of the beds changes from near vertical to near horizontal.

The work proposed consists of:—

9,450 feet of plug drilling at $2.00/ft.	$18,900.00
4,000 feet of core drilling at $3.00/ft.	12,000.00
Roads, 240 hours at $17.00	4,080.00
Labor, supervision, etc.	4,500.00
Miscellaneous	1,000.00
Total	$40,480.00

Perhaps the leaching and redeposition idea can be put to the test where a 'hinge' structure has been exposed by erosion as in a canyon. At such places, if present, the tenor of the less disturbed beds should be exemplified.

I agree with the Field Team that an examination is warranted. Referral to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-3/26/56

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

IN REPLY REFER TO:

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

March 26, 1956

Re: DMEA 4212
Robert A. Pitzer
Mt. Killore Group
Garfield Co., Utah
$40,480.00 - Uranium

Memorandum

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

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

Subject: Review of application.

The Field Team has recommended that an examination of this property be made.

The applicant requests assistance in exploring by drilling down dip sections of upstanding beds of the Salt Wash member of the Morrison formation.

At several points along the east-west trending outcrop of the Salt Wash rocks uranium minerals, tyuyamunite, carnotite, and autunite have been identified. Character samples of ore grade material have been taken from the outcrops and adit, but the general average is low. The idea is advanced that some of the original uranium values have been leached from the near surface rocks and have been redeposited at lower horizons where traps may have been formed, especially at the 'hinge' where the dip of the beds changes from near vertical to near horizontal.

The work proposed consists of:--

9,450 feet of plug drilling at $2.00/ft.	$18,900.00
4,000 feet of core drilling at $3.00/ft.	12,000.00
Roads, 240 hours at $17.00	4,080.00
Labor, supervision, etc.	4,500.00
Miscellaneous	1,000.00
Total	$40,480.00

Perhaps the leaching and redeposition idea can be put to the test where a 'hinge' structure has been exposed by erosion as in a canyon. At such places, if present, the lower of the less disturbed beds should be exemplified.

I agree with the Field Team that an examination is warranted. Referral to the Field Team is recommended.

M. E. Nelson

M. E. Nelson

MENelson:iml
G-3/26/56

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

3/23/56

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

RECEIVED
MAR 22 1956

March 19, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Chairman, Operating Committee, DMEA

From: Field Team, Region III

Subject: Docket DMEA 4212 (Uranium), Robert A. Pitzer, Mt. Hillers Property, Garfield County, Utah

Enclosed are the original and three copies of a review of the subject application by members of the Grand Junction office. They recommend and we concur that a field examination of this property is warranted.

DMEA Field Team, Region III

By W. M. Traver
Executive Officer

Enclosures

(2)

DMEA
Date Rec'd. MAR 19 1956

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

MINERAL DEPOSITS
IN REPLY REFER TO:
DMEA
RECEIVED
MAR 16 1956
U.S. GEOLOGICAL SURVEY
DENVER, COLO.

BUREAU OF MINES
Denver, Colorado

March 13, 1956

Memorandum

DMEA 4212
RECEIVED
MAR 22 1956

To: Executive Officer, DMEA Field Team, Region III

From: J. William Hasler
M. H. Salsbury

Through: E. N. Harshman

Subject: Application for DMEA assistance, Robert A. Pitzer, Mt. Hillers property, Garfield County, Utah.

The Mt. Hillers property is in a district where the known ore deposits are small, and very close spaced drilling is required to find the ore. A drilling project is generally considered uneconomical even at shallow depths.

The Salt Wash member of the Morrison formation that crops out on the claims, however, lies at an angle of as much as 85° on the southern flank of the Mt. Hillers stock and is cut by dikes and faults. Known mineralized material occurs in strata near the base of the Salt Wash. In view of the unusual structure and mineralization, it is recommended that the property be examined in the field.

J. William Hasler
J. William Hasler,
U. S. Geological Survey

M. H. Salsbury
M. H. Salsbury,
U. S. Bureau of Mines

HFA/mlr

March 13, 1956
Subject: DMEA-4212
Re: Exploration Assistance
Mt. Hillers

Mr. Robert A. Pitzer
125 North 8th
Post Office Box 237
Grand Junction, Colorado

My dear Mr. Pitzer:

The receipt of your application dated March 2, 1956, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-4212 and referred to the Rare & Misc. Metals Division.

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

March 13, 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

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

DMEA - 4212 Robert A. Pitzer

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

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

RECEIVED
MAR 12 1956

March 8, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Application for DMEA Aid (Uranium), Robert A. Pitzer, Mt. Hillers Property, Garfield County, Utah

Enclosed are two copies of the subject application in the amount of $40,480.00.

One copy has been forwarded to the Grand Junction office for review and one copy is being retained in our files.

DMEA Field Team, Region III

By W. M. Traver
Executive Officer

Enclosures

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

RECEIVED
MAR 12 1956

March 8, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: J. W. Hasler

From: Field Team, Region III

Subject: Application for DMEA Aid (Uranium), Robert A. Pitzer, Mt. Millers Property, Garfield County, Utah

Enclosed is a copy of the subject application in the amount of $40,480.00. Will you please discuss this application with the Bureau of Mines representative in the Grand Junction office and the Atomic Energy Commission and forward this office eight copies of your joint recommendations concerning the desirability of making a field examination.

DMEA Field Team, Region III

W. M. TRAVER,

By W. M. Traver
Executive Officer

Enclosure

HMC:ab

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

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

RECEIVED
MAR 12 1956

March 8, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: J. W. Hasler

From: Field Team, Region III

Subject: Application for DMEA Aid (Uranium), Robert A. Pitzer, Mt. Hillers Property, Garfield County, Utah

Enclosed is a copy of the subject application in the amount of $40,480.00. Will you please discuss this application with the Bureau of Mines representative in the Grand Junction office and the Atomic Energy Commission and forward this office eight copies of your joint recommendations concerning the desirability of making a field examination.

DMEA Field Team, Region III

W. M. TRAVER,

By W. M. Traver
Executive Officer

Enclosure

HMC:ab

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

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

RECEIVED
MAR 12 1956

March 8, 1956

224 New Customhouse
Denver 2, Colorado

Mr. E. J. Mayhew
Consulting Geological Engineer
Suite 1, Arches Building
Moab, Utah

Dear Mr. Mayhew:

This will acknowledge receipt of your letter dated March 2, 1956 and four copies of the DMEA application for Robert A. Fitzer on Mt. Hillers Property, Garfield County, Utah. The application has been forwarded to the Washington office, DMEA for further processing.

Very truly yours,

W. M. TRAVER,

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

HMC:ab

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

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

RECEIVED
MAR 12 1956

March 8, 1956

224 New Customhouse
Denver 2, Colorado

Mr. E. J. Mayhew
Consulting Geological Engineer
Suite 1, Arches Building
Moab, Utah

Dear Mr. Mayhew:

This will acknowledge receipt of your letter dated March 2, 1956 and four copies of the DMEA application for Robert A. Pitzer on Mt. Killers Property, Garfield County, Utah. The application has been forwarded to the Washington office, DMEA for further processing.

Very truly yours,

W. M. TRAVER,

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

HMC:ab

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

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

RECEIVED
MAR 12 1956

March 8, 1956

224 New Customhouse
Denver 2, Colorado

[redacted]

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Application for DMEA Aid (Uranium), Robert A. Pitzer, Mt. Hillers Property, Garfield County, Utah

Enclosed are two copies of the subject application in the amount of $40,480.00.

One copy has been forwarded to the Grand Junction office for review and one copy is being retained in our files.

DMEA Field Team, Region III

W. M. TRAVER,

By W. M. Traver
Executive Officer

Enclosures

DMEA
Date Rec'd.
MAR 8 1956
BUREAU OF MINES
Denver, Colorado

March 2, 1956

United States Department of the Interior
Defense Minerals Exploration Administration
Grand Junction, Colorado

Dear Sirs:

Herewith are five copies each of D. M. E. A. forms MF-103 together with maps, reports, estimates and other required data.

Should you desire further information or data of any kind please contact Mr. Robert A. Pitzer, Post Office Box 237, Grand Junction, Colorado, or E. J. Mayhew, Post Office Box 132, Moab, Utah.

Very truly yours,

E. J. Mayhew
Geological Engineer

EJM:jj
Encl: 5 appl.-DMEA

MF-103
(Revised April 1952)

DMEA
Date Rec'd.

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved
Budget Bureau No. 56-R1035.2.

RECEIVED
MAR 12 1956
BUREAU OF MINES
Denver, Colorado

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

Not to be filled in by applicant

Docket No. DMEA-4212
Metal or Mineral Uranium
Date Received 3-12-56
Estimated Cost $40,480.00
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Mr. Robert A. Pitzer
125 North 8th
Post Office Box 237
Grand Junction, Colorado

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

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

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

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

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

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

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

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

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

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

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. No production

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

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

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

16—66551-1

See attached supplemental sheet

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

(*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 supplemental sheet) also Exhibit 4

(*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 supplemental sheet

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:

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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.

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(*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 2, 1956

R. A. [illegible]
(Applicant)

By E. J. Moylan, Engineer

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

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

RECEIVED

MAR 12 1955

UNITED STATES DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

RE: Application for aid in an exploration project, pursuant to DMEA Order 1, under the Defense Production Act of 1950, as amended

FOR: Robert A. Pitzer
Post Office Box 237
Grand Junction, Colorado

3. (a) Legal Description: (See Exhibit I, Property Map)
(See Exhibit II, Abstract of Title)
(See Exhibit IV and IIIA., Geological Reports by Mr. Pitzer and Mr. Harlan)

The Hilltop Claims 1 through 13 are not included in this application for D. M. E. A. loan, however, maps and abstract of these claims are included to show their location and description since they may be construed as being sufficiently near subject claims to benefit by the exploration.

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Ada #15 through #19
Ada #15-A
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The D. K. R. #1 and D. K. R. #2 are located geologically below the Salt Wash outcrop and therefore are not effected for D. M. E. A. loan. They are not owned by anyone party to this application.

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The writer has no financial or stock interest in this property or in any other property in its vicinity.

(b) This property has produced no ore. It is a prospect and must be explored further before ore can be blocked out or production started.

(c) (See Exhibit III) That portion of the property on which applicant proposes to drill lies in the following claims: Happy Shop 1 to 6 inclusive and the north half of the Ada 1 to 11 inclusive.

D. M. E. A. APPLICATION

Page 1-A

Robert A. Pitzer
Box 237
Grand Junction, Colo.

CLAIM NAMES

GARFIELD COUNTY, UTAH

Claim	Book	Page	
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Lamar #10	82	380	" " " "
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Ada #11	85	220	Notice Of Re-Location
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D. M. E. A. APPLICATION

Robert A. Pitzer
Box 237
Grand Junction, Colorado

CLAIM NAMES

(Page Two-Continued)

Claim	Book	Page	
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Don't Know #3	82	414	" " "
Don't Know #4	82	415	" " "
Don't Know #5	82	416	" " "

Robert A. Pitzer
Post Office Box 237
Grand Junction, Colorado

4. (c) (continued) The Salt Wash strike on these claims is nearly due east and outcrops in three "hogbacks" with a near vertical dip. The minerals Tyuyamunite, Carnotite and Schroekingerite are identifiable at several points along the outcrop, in the open pits and in the tunnel.

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(d) The Mt. Hillers property is accessible all year by dirt road fifty-two (52) miles south of Hanksville, Utah. Housing must be supplied on the property for an active mining operation.

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Water is present on the property. Electrical power is not available. Power must be obtained from internal combustion engines.

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D. M. E. A. APPLICATION

Page Three

Robert A. Pitzer
Post Office Box 237
Grand Junction, Colorado

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9,450 feet of plug drilling at $2.00 /feet	$18,900.00
4,000 feet of core drilling at $3.00 /feet	12,000.00

B. Roadbuilding, locations and rock work

240 hours @ $17.00 /hour	4,080.00

(b) Labor, Supervision, Consultants:

Consultant Supervision of Project 60 days @ $75.00 /day	4,500.00

(g) Miscellaneous

A. Analytical and account	1,000.00
Total	$40,480.00

Robert A. Pitzer

Robert A. Pitzer
Box 237
Grand Junction, Colorado

DELAYED
2 0 3 1 2 1 0 0 5

SEE EXHIBIT I ON BACK PAGE

OF

EXHIBIT 3A

B. A. PITZER
P. O. BOX 237
GRAND JUNCTION, COLO.

DMEA
Date Rec'd

MAR 8 1956

BUREAU OF MINES
Denver, Colorado

March 2, 1956

United States Department of the Interior
Defense Minerals Exploration Administration
Grand Junction, Colorado

Dear Sirs:

Herewith are five copies each of D. M. E. A. forms MP-103 together with maps, reports, estimates and other required data.

Should you desire further information or data of any kind please contact Mr. Robert A. Pitzer, Post Office Box 237, Grand Junction, Colorado, or E. J. Mayhew, Post Office Box 132, Moab, Utah.

Very truly yours,

E. J. Mayhew

E. J. Mayhew
Geological Engineer

EJM:jj
Encl: 5 appl.-DMEA

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 38-R1085.2.

RECEIVED
MAR 12 1956
BUREAU OF MINES
Denver, Colorado

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

Not to be filled in by applicant

Docket No. DMEA-4212
Metal or Mineral Uranium
Date Received 3-12-56
Estimated Cost $40,480.00
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Mr. Robert A. Pitzer
125 North 8th
Post Office Box 237
Grand Junction, Colorado

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

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

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

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

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

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

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

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

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

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

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. No production

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

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

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

16—66551-1

See attached supplemental sheet

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

(*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 supplemental sheet)also Exhibit 4

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(Applicant)

By E J Moyhen, Engineer

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MAR 1 8 1955

D. M. M. A. APPLICATION

Page 1-A

Robert A. Pitzer
Box 237
Grand Junction, Colo.

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GARFIELD COUNTY, UTAH

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D. M. E. A. APPLICATION

Robert A. Pitzer
Box 237
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CLAIM NAMES

(Page Two-Continued)

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D. M. E. A. APPLICATION

Page Three

Robert A. Fitzer
Post Office Box 237
Grand Junction, Colorado

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(g) Miscellaneous

A. Analytical and account	1,000.00
Total	$40,480.00

Robert A. Fitzer

Robert A. Fitzer
Box 237
Grand Junction, Colorado

RECEIVED
MAR 1 2 1986

SEE EXHIBIT I ON BACK PAGE

OF

EXHIBIT 3A

220 Whiteside Bldg.
Phone: PO 3-5131
Lubbock, Texas

SCOTT BROS.
drilling company
"Exploration Drilling Services"

Branch:
641 Glenwood Ave.
Phone: 45
Grand Junction, Colo.

RECEIVED
MAR 12 1956

March 5, 1956

Mr. R. A. Pitzer
Box 237
Grand Junction, Colorado

Dear Mr. Pitzer:

We would like to quote the following prices for drilling requested in the vicinity of Henry Mountains:

Plug-Bit Drilling

0-300 ft.....$1.65 per ft.
300-600 ft.....$1.85 per ft.

Core Drilling

0-300 ft.....$3.50 per ft.
300-600 ft.....$3.75 per ft.

Stand-by Time.....$12.00 per hr.

Thank you.

Sincerely,

L. W. Scott Partner

SCOTT BROS. DRILLING CO.

LWS:lan

MOAB DRILLING COMPANY
DIAMOND CORE DRILLING CONTRACTORS
BOX 307
MOAB, UTAH

TELEPHONE 3-4181

CHARLES A. STEEN
PRESIDENT
ALBERT HRBACEK, JR.
GENERAL MANAGER

RECEIVED
MAR 12 1956

March 1, 1956

Moab Uranium Company
Moab, Utah

Dear Mr. Pitzer:

Mr. Hickman has indicated that you would be interested in knowing of drilling services offered by Moab Drilling Company. In this connection, we are pleased to supply the following information.

We offer a complete service which includes geologists to follow and coordinate the drilling program, the surveying of holes, logging of holes and core, final ore reserve calculation, and final reports calculation, and final reports covering results of any drilling program. In addition, we have laboratory facilities in which quick and accurate assays of cores can be made if the client desires. Any reasonable number of copies of drill logs, maps and repots are supplied.

Our charge is $4.00 per foot. We feel that in view of the services offered, and our guarantee of a 90% or better core recovery, our price is competitive and reasonable. Because hazards and costs increase with depth, most drilling companies have a price differential in effect after a depth of approximately 1000 feet is reached. Through the best equipment and methods and experienced personnel, we are prepared to take the risk of drilling deeper holes at no extra charge beyond our flat rate, The only extras we charge for are cat work and lost circulation materials.

Our equipment includes nine rigs, one cat dozer, water trucks, tank trucks, air compressors as well as logging units and other technical eq ipment. Most of our equipment is new or practically new. We maintain a large inventory of drill bits, diamond core barrels, diamond bits, necessary fishing tools, etc. One feature of our service is a close contact between the field, main offices and clients by means of radio communication.

We hope this information is what you require. If further details

MOAB DRILLING COMPANY
DIAMOND CORE DRILLING CONTRACTORS
BOX 367
MOAB, UTAH

TELEPHONE 3-4181

CHARLES A. STEEN
PRESIDENT
ALBERT HRBACEK, JR.
GENERAL MANAGER

RECEIVED
MAR 12 1958

are desired, we will be glad to supply any additional information.

Very truly yours

Moab Drilling Co.

Albert Hrbacek Jr.
Albert Hrbacek, Jr.
General Manager

AHJ/bb

Atlas Uranium Corporation
P. O. BOX 746
MOAB, UTAH

LEAD
SILVER
ZINC

MINING

MILLING

URANIUM
OIL & GAS
COPPER

Feburary 29,1956

Bob Pitzer
Grand Junction,Colorado

Dear Sir

I wish to submit a bid for drilling your proposed San Rafel project.My understanding is that there will be approxmately 9450 feet of plug drilling,and 4000 feet of coreing.

Plug drilling

0 to 200 feet	$ 1.50 per foot
200 to 300 feet	1.75 per foot
300 to 350 feet	2.00 per foot
350 to 500 feet	2.25 per foot

Coreing

Per foot $3.50 per foot

We can also furnish samples on any interval,1,2,5, or 10'.

Sincerely

Atlas Uranium Corporation

By J.C.Burgess

Clorence Engston
Box 472
moab Utah

mar 2-1956

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MAR 12 1956

R. A. Pitzer

Bid on Dozer work with D-8 Cat
& Dozer on Road & Drilling sites
at $16.00 per hr Waiting time on Driller at
$8.00 per hr
moving Cat to Location $1.25 per mi one way
Estimate 240 hr at 16.00 per hr
would be $3840.00

Clorence Engston

Grand Jct Colo.
~~Feb~~ March 5 1956

Bid on estimated 250 hrs
dozer work.
If job runs over $1500.00
no hauling charge. If less $1.00 per mile.
hauling.
D-8 cat @ $14.00 per hr.
D-7 cat @ $12.00 per hr.

Hector E. Grigsby
1019 Glenwood Ave
Grand Jct. Colo.

220 Whiteside Bldg.
Phone: PO 3-5131
Lubbock, Texas

SCOTT BROS.
drilling company
"Exploration Drilling Services"

Branch:
641 Glenwood Ave.
Phone: 45
Grand Junction, Colo.

RECEIVED
MAR 12 1956

March 5, 1956

Mr. R. A. Pitzer
Box 237
Grand Junction, Colorado

Dear Mr. Pitzer:

We would like to quote the following prices for drilling requested in the vicinity of Henry Mountains:

Plug-Bit Drilling

0-300 ft.....$1.65 per ft.
300-600 ft.....$1.85 per ft.

Core Drilling

0-300 ft.....$3.50 per ft.
300-600 ft.....$3.75 per ft.

Stand-by Time.....$12.00 per hr.

Thank you.

Sincerely,

L. W. Scott Partner

SCOTT BROS. DRILLING CO.

LWS:lan

MOAB DRILLING COMPANY
DIAMOND CORE DRILLING CONTRACTORS
BOX 307
MOAB, UTAH

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MAR 12 1956

CHARLES A. STEEN
PRESIDENT
ALBERT HRBACEK, JR.
GENERAL MANAGER

TELEPHONE 3-4181

March 1, 1956

Moab Uranium Company
Moab, Utah

Dear Mr. Pitzer:

Mr. Hickman has indicated that you would be interested in knowing of drilling services offered by Moab Drilling Company. In this connection, we are pleased to supply the following information.

We offer a complete service which includes geologists to follow and coordinate the drilling program, the surveying of holes, logging of holes and core, final ore reserve calculation, and final reports calculation, and final reports covering results of any drilling program. In addition, we have laboratory facilities in which quick and accurate assays of cores can be made if the client desires. Any reasonable number of copies of drill logs, maps and repots are supplied.

Our charge is $4.00 per foot. We feel that in view of the services offered, and our guarantee of a 90% or better core recovery, our price is competitive and reasonable. Because hazards and costs increase with depth, most drilling companies have a price differential in effect after a depth of approximately 1000 feet is reached. Through the best equipment and methods and experienced personnel, we are prepared to take the risk of drilling deeper holes at no extra charge beyond our flat rate, The only extras we charge for are cat work and lost circulation materials.

Our equipment includes nine rigs, one cat dozer, water trucks, tank trucks, air compressors as well as logging units and other technical equipment. Most of our equipment is new or practically new. We maintain a large inventory of drill bits, diamond core barrels, diamond bits, necessary fishing tools, etc. One feature of our service is a close contact between the field, main offices and clients by means of radio communication.

We hope this information is what you require. If further details

MOAB DRILLING COMPANY

DIAMOND CORE DRILLING CONTRACTORS

BOX 387

MOAB, UTAH

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MAR 12 1956

CHARLES A. STEEN
PRESIDENT

ALBERT HRBACEK, JR.
GENERAL MANAGER

TELEPHONE 3-4181

are desired, we will be glad to supply any additional information.

Very truly yours

Moab Drilling Co.

Albert Hrbacek Jr.

Albert Hrbacek, Jr.
General Manager

AHJ/bb

Atlas Uranium Corporation

P. O. BOX 746
MOAB, UTAH

LEAD
SILVER
ZINC

MINING

MILLING

URANIUM
OIL & GAS
COPPER

Feburary 29,1956

Bob Pitzer
Grand Junction,Colorado

Dear Sir

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Plug drilling

0 to 200 feet	$ 1.50 per foot
200 to 300 feet	1.75 per foot
300 to 350 feet	2.00 per foot
350 to 500 feet	2.25 per foot

Coreing

Per foot $3.50 per foot

We can also furnish samples on any interval,1,2,5, or 10'.

Sincerely

Atlas Uranium Corporation

By J.C.Burgess

K. L. ETTER CONSTRUCTION CO.
1637 Gunnison Boulevard
GRAND JUNCTION, COLORADO

March 6, 1956

Mr. R. A. Pitzer
Box 237
125 No. 8th
Grand Junction, Colo.

We will furnish TD18A International Bulldozer with operator or D7 Caterpillar Bulldozer with operator for $ 12.00 per hr. with a minimum of 250 hours or $ 3,000.00 to make roads and drill locations, work to be done in the Henry Mountain Area approximately 50 miles from Hanksville, Utah, three thousand dollars ($ 3,000.00) to be placed in escrow in a local bank before the job is started. Tractor to be paid in full every two weeks after the job is started.

Signed: K. L. Etter
K. L. ETTER CONSTRUCTION CO.

Clarence Egerton
Box 1172
Vernal Utah

Mar 2-1956

RECEIVED
MAR 12 1956

R. A. Potter

Bid on dozer work with D-8 Cat
+ dozer on Road + drilling sites
at $16.00 per hr working time on drilling at
$8.00 per hr
moving Cat to location $1.25 per mi one way
estimate 240 hr at 16.00 per hr
total $3900.00

Clarence Egerton

K. L. ETTER CONSTRUCTION CO.
1637 Gunnison Boulevard
GRAND JUNCTION, COLORADO

RECEIVED
MAR 12 1956

March 6, 1956

Mr. R. A. Pitzer
Box 237
125 No. 8th
Grand Junction, Colo.

We will furnish TD18A International Bulldozer with operator or D7 Caterpillar Bulldozer with operator for $ 12.00 per hr. with a minimum of 250 hours or $ 3,000.00 to make roads and drill locations, work to be done in the Henry Mountain Area approximately 50 miles from Hanksville, Utah, three thousand dollars ($ 3,000.00) to be placed in escrow in a local bank before the job is started. Tractor to be paid in full every two weeks after the job is started.

Signed: K. L. Etter
K. L. ETTER CONSTRUCTION CO.

Grand Jct Colo.
March 5 1956

Bid on estimated 250 hrs
dozer work.
If job runs over $1500.00
no hauling charge. If less $1.00 per mile.
hauling.
D-8 cat @ $14.00 per hr.
D-7 cat @ $12.00 per hr.

Hector E. Grigsby
1019 Glenwood Ave
Grand Jct. Colo.

EXHIBIT V

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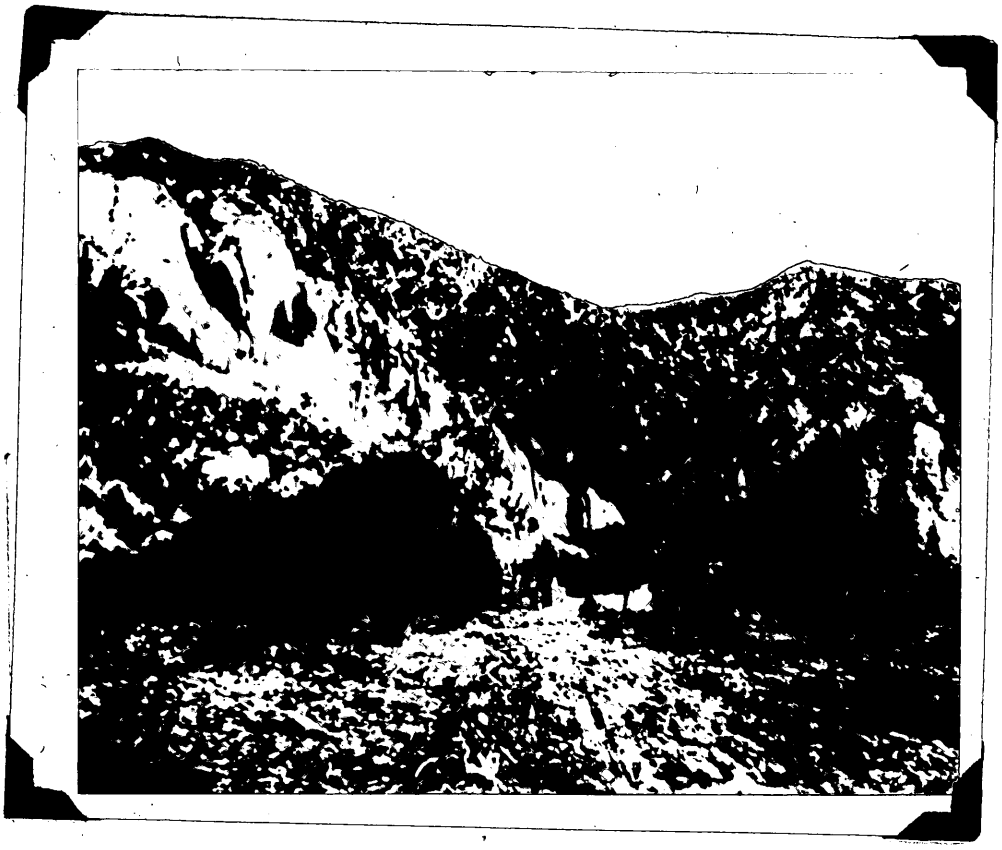
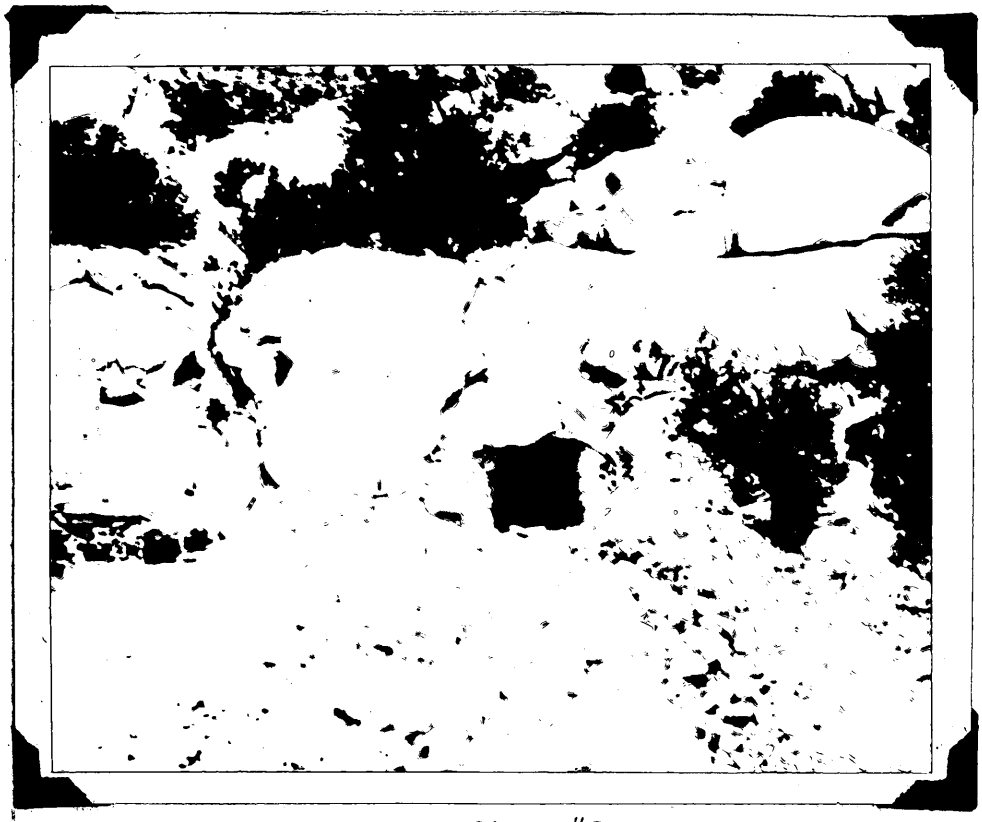
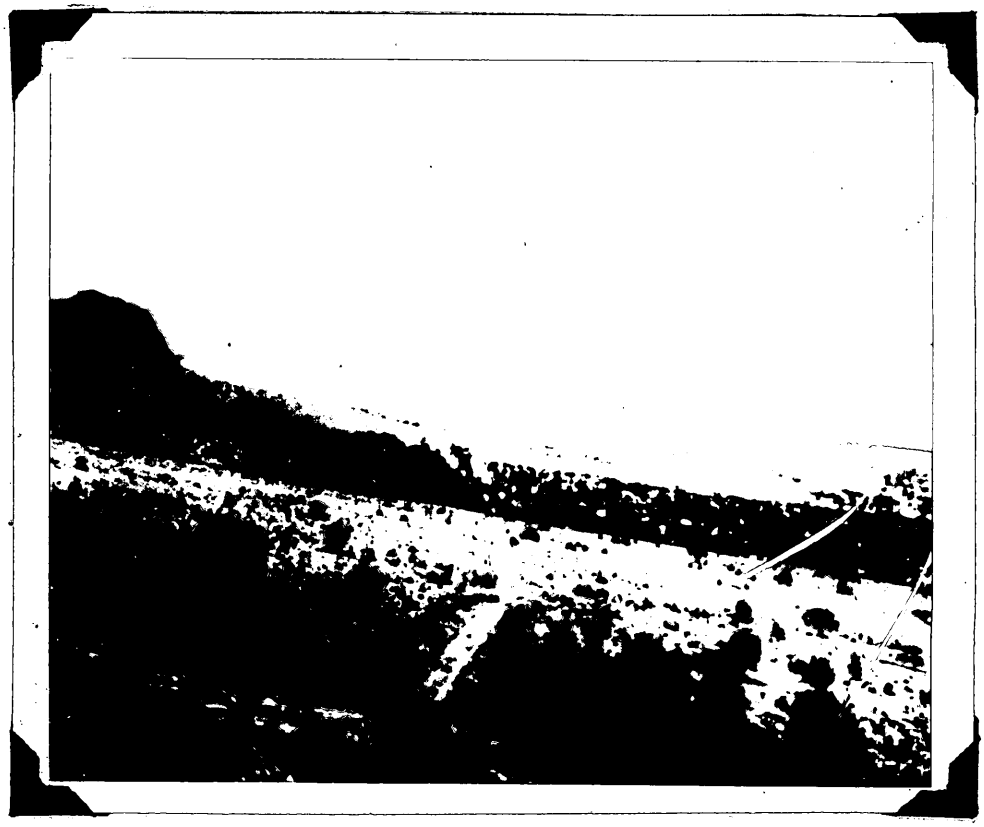
R. A. PITZER
P. O. BOX 237
GRAND JUNCTION, COLO.





Happy Shep #2

R. A. PITZER
P. O. BOX 237
GRAND JUNCTION, COLO.



Happy Shep #3 and #5

Ada and Happy Shep

R. A. PITZER
P. O. BOX 237
GRAND JUNCTION, COLO.

Happy Shep #2

R. A. PITZER
P. O. BOX 237
GRAND JUNCTION, COLO.

EXHIBIT II

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MAR 12 1956

OPINION OF TITLE

UNPATENTED LODE MINING CLAIMS

ROBERT A. PITZER CLAIMS GROUP

HENRY MOUNTAIN MINING DISTRICT

GARFIELD COUNTY

STATE OF UTAH

60 CLAIMS

Lemmer	#1 thru #15
Ada	#1 thru #12
Ada	#15 thru #19
Ada	#15-A
Hill Top	#1 thru #13
Happy Shep	#1 thru #5
Happy Shepp	#6 and #7
Honky Tonk	#1 and #2
Don't Know	#1 thru #5

RONALD G. WILCOX
Attorney-At-Law

DATED: this 6th day of July, in the year 1955.

LAW OFFICES
DIXON AND WILCOX
RILEY BUILDING
MOAB, UTAH
PHONE ALPINE 3-2001

R. A. PITZER
P. O. BOX 207
MOAB, UTAH

OPINION OF TITLE

UNPATENTED LODE MINING CLAIMS

ROBERT A. PITZER CLAIMS GROUP

HENRY MOUNTAIN MINING DISTRICT

GARFIELD COUNTY

STATE OF UTAH

CLAIMS

Lamar	#1 thru #15
Ada	#1 thru #12
Ada	#15 thru #19
Ada	#15-A
Hill Top	#1 thru #13
Happy Shep	#1 thru #5
Happy Shepp	#6 and #7
Honky Tonk	#1 and #2
Don't Know	#1 thru #5

ABSTRACTS EXAMINED

An examination has been made of an Abstract of Title to the Lamar #1 thru #15 mining claims, inclusive, consisting of 17 pages numbered from #1 to #17 inclusive, and an Abstract of Title to Ada #1 to #14 mining claims, inclusive, consisting of 15 pages, numbered from #1 to #15 inclusive, and an Abstract of Title to the Hill Top #1 to #13 mining claims, inclusive, consisting of 15 pages, numbered from #1 to #15 inclusive, and an Abstract of Title to Happy Shep #1 to #5 mining claims, and Happy Shepp #6 and #7 mining claims, and Honky Tonk #1 and #2 mining claims, consisting of 13 pages, numbered from #1 to #13 inclusive, all prepared by Bruce F. Parker, Abstracter, of Panguitch, Utah, as certified to on the 3rd day of May, in the year 1955, at 2:00 o'clock P.M., consisting of all instruments on file or of record as shown by the mining indices and records to which they refer, in the Office of the County Recorder, in and for the County of Garfield, State of Utah, that refer to or effect the title

LAW OFFICES
DIXON AND WILCOX
RILEY BUILDING
MOAB, UTAH
PHONE ALPINE 3-2001

ABSTRACTS EXAMINED

to the mining claims above described since the date of recording of the first Notice of Location, excepting therefrom claims with the same name, but not appearing in the chain of title from the original locators.

INSTRUMENTS EXAMINED

An examination has been made of these certain Contracts of Agreement, Quit Claim Deeds, and certain other mesne conveyances and instruments not yet placed of record, in the Office of the Recorder, in and for the County of Garfield, State of Utah, but furnished this office for examination in connection with the Opinion of Title, and an examination has been made of the instruments and entries of record in the Office of the Bureau of Land Management at Salt Lake City, Utah, made the 20th day of May, in the year 1955, covering any entries of record which would adversely effect mining claims and the location thereof.

MAPS EXAMINED

An examination has been made of a certain STADIA SURVEY MAP covering the above described mining claims known as the Hill Top #1 thru #13 mining claims, and showing said claims to be situate in Section 25 of Township 33 South, Range 11 East, and the W^2 of the SW^4 of Section 30 in Township 33 South, Range 12 East, Salt Lake Base and Meridian, dated the 17th day of May, 1955, as prepared and certified to by Carlton C. Cope, Registered Land Surveyor, of the State of Utah, and of a certain SURVEY MAP covering the Lamar, Ada, Happy Shep, (Happy Shepp), Honky Tonk and Don't Know mining claims, and showing said claims to be located upon unsurveyed land, which when surveyed will probably be in Sections 9, 10, 11, 12, 14, 15, and 16, of Township 34 South, Range 11 East, Salt Lake Base and Meridian, dated the 28th day of May, 1955, as prepared and certified to by C. C. Cope, Registered Land Surveyor, of the State of Utah, and containing a recital that "four inches by four inches by four feet corners placed on all corners except five which have rock monuments and lathe. All monuments are in place, all Amended Notices placed on discovery monuments", and from said instruments, entries, mesne conveyances, and SURVEY MAPS, I find the legal

MAPS EXAMINED

possessory title to the above described unpatented lode mining claims vested as indicated below, subject to the exceptions and reservations hereinafter contained.

TITLE VESTED

ROBERT A. PITZER.

From the examination of the above described instruments, and from the appropriate entries of record in the Office of the Bureau of Land Management at Salt Lake City, Utah, and from those certain mesne conveyances furnished this office for examination, I find there is vested in ROBERT A. PITZER, a good, marketable, and satisfactory possessory title to all of the above described unpatented lode mining claims subject to the exceptions and reservations hereinafter contained.

TITLE COMMENTS & REQUIREMENTS

1. IN RE: Land Status - Federal Applications.

The entries of record in the Office of the Bureau of Land Management at Salt Lake City, Utah, reflect that at the time the acts of location were made to all of the above described unpatented lode mining claims, the lands so located were part of the Public Domain and subject to location of mining claims under the provisions and requirements of the mining laws of the United States. The records indicate that the Hill Top group of mining claims were located upon surveyed land, and that there were no entries of record which would adversely effect mining claims located upon said lands within the past five years. The entries of record also disclose that the remainder of the claims were located upon unsurveyed land, however, according to the proposed plan of survey of this general area, It appears that the Township, when surveyed, will be a regular Township, with Township lines both Northerly and Southerly being parallel with the surveyed Township lines in this area. There will be no offsets as to the Township corners, and none of the Sections should be irregular. Also, there are no entries of record which would adversely effect mining claims located within the past five years.

LAW OFFICES
DIXON AND WILCOX
RILEY BUILDING
MOAB, UTAH
PHONE ALPINE 3-2001

R. A. PITZER
P. O. BOX 537
GRAND JUNCTION, COLO.

TITLE COMMENTS
& REQUIREMENTS

There are no existing Oil and Gas Leases or Applications nor are there any Potash or other Prospecting Permits or Applications covering any of the lands embraced by the above described unpatented lode mining claims. Nor will the subsequent Applications for any Oil and Gas Lease or Potash Prospecting Permit, or the issuance of any Lease or Permit by the Federal Government upon said lands pursuant to the provision of Public Law 585, effect the validity of the above unpatented lode mining claims. Under Public Law 585, Eighty Third Congress, Chapter 730, Second Session, the Mineral Leasing Laws and the Mining Laws were amended to provide for multiple mineral development of the same tracts of the Public Lands, and which rendered the Public Lands subject to the issuance of Leases or Potash Prospecting Permits by the Federal Government under the provisions of the Mineral Leasing Act of 1920, as amended. Upon the issuance of said Leases or Permits, the applicant, lessee, or permit holder would therefore be entitled to prospect for and conduct exploration work upon the lands embraced within any issued Lease or Prospecting Permit. If, prior to the discovery of minerals upon the subject claims, by the locator of the unpatented lode mining claims, or his successors in interest, or assigns, the Federal applicant or lessee conducting operations under the Leasing Act of 1920, in search of Leasing Act minerals, who should discover minerals other than those subject to the Mineral Leasing Act, and thereafter upon said discovery locate a mining claim, in that event the lessee or permit holder would in fact have some claim to a valid title to the premises so located.

Therefore, it is recommended that an actual discovery, essential to the validity of any mining location, be made, if not already made, upon all of the said claims, in order to protect them from any possible entry or location of mining claims by any subsequent lessee or applicant conducting Leasing Act operations upon the premises.

TITLE COMMENTS
& REQUIREMENTS

2. IN RE: Location Notices.

In addition to the original Notices of Location, certain Amended Notices of Location were made covering all of the above described unpatented lode mining claims with the exception of the Ada #15 to #19, Ada #15-A, and Don't Know #1 thru #5 groups of mining claims, and said Amended Notices have been placed on the discovery monuments, and have been recorded in the Office of the County Recorder in and for the County of Garfield, State of Utah, for the purpose of more definitely describing the boundaries of the said claims, and correcting any irregularities, informalities, or errors, and supplying omissions and correcting any defects which may have existed in the original locations, or the record thereof.

An examination has been made of the Notices of Location, as amended, covering the above described unpatented lode mining claims, and a comparison has been made with the descriptions of the claims as they appear in the Notices, and amended Notices, and the descriptions of the claims as they appear on the SURVEY MAPS, prepared by the aforementioned Carlton C. Cope. There are no material discrepancies existing between the descriptions contained in the Notices of Location, as amended, and the descriptions of the claims as they appear on the SURVEY MAPS. The descriptions contained in the Notices, as amended, are correct and proper, and conform with the requirements of the United States Mining Laws, with respect to the location of mining claims.

Further, the SURVEY MAPS disclose that there are no adverse or conflicting claims effecting the title to the above described unpatented lode mining claims, the subject matter of this Title Examination, except with respect to the W^2 of the mining claims known as Ada #10 and all of the mining claim known as Ada #11, which overlaps and extends into the mining claims known as Astragulus #1 and Astragulus #2, said claims being designated on the MAP as Astrugulus #1 and #2, and with respect to the SW portion of the Don't Know

R. A. PITZER
P. O. BOX 23
GRAND JUNCTION, COLO.

TITLE COMMENTS
& REQUIREMENTS

#4 mining claims which extends upon a small portion of the mining claim known as DKR #2. However, there has been obtained from the original locator, and owner, of the aforementioned Astragulus #1 and #2 mining claims, a deed conveying all right, title and interest to that part of the Astragulus #1 and #2 mining claims covered by the Ada claims, thereby eliminating any conflicts with respect to the Ada #10 and the Ada #11 mining claims. That with respect to the mining claim known as Don't Know #4, said claim was validly located, even though there is a small extension into the area embraced by the mining claim known as DKR #2. While there is some overlapping of the claim, the United States Mining Statutes do provide that in order to make the end line of a claim parallel, a locator may locate his lines and establish his corners within and upon the surface of a valid senior location, providing the locator limits his claims to unoccupied ground and does not attempt to invade the rights of the prior appropriator. Asserting no claim to the area embraced by the DKR #2 mining claim, the overlap presents no problem at this time and may be disregarded.

The Notices of Location, as amended, disclose that as to some of the above described mining claims, the location (discovery) monuments are identical with the end center monuments. If it is intended that said location monument be considered as a discovery monument, there may be some question as to whether the discovery is actually within the boundaries of the claims as described. If not intended as the discovery monument, it should be kept in mind that the location of any subsequent discovery and the establishment of any location (discovery) monument should be well within the boundary lines of the above described mining properties.

3. IN RE: Annual Labor.

Pursuant to the requirements of the United States Mining Laws providing for the performance each year of "not less than $100.00 worth of labor" and development work on all claims for which no patent has been issued, and

TITLE COMMENTS & REQUIREMENTS

pursuant to the requirements of Title 40, Chapter 1, Section 6, of the Utah Code Annotated, 1953, requiring the owner of any lode mining claim to file an Affidavit of Work done or improvements made on said claims, the requisite Affidavits of Labor have been recorded in the Office of the County Recorder in and for the County of Garfield, State of Utah, and, where applicable, notice has been posted upon each claim at the discovery monument pursuant to the provision of Section 5 of said Title 40, Chapter 1, of the aforementioned Utah Code Annotated.

TITLE STATUS

From the above and foregoing comments, and from the information disclosed by the Abstracts of Title, and from the Amended Notices of Location, and from those certain unrecorded Contracts of Agreement, Deeds, and mesne conveyances furnished this office for examination, and from the appropriate entries of record in the Office of the Bureau of Land Management at Salt Lake City, Utah, and from the information disclosed by the aforementioned SURVEY MAPS, the above described unpatented lode mining claims appear to be VALID as originally located, and vesting a good, marketable, and satisfactory title to all of the above described unpatented lode mining claims in ROBERT A. PITZER, subject to the exceptions and reservations hereinafter contained.

EXCEPTIONS & RESERVATIONS

1. CONFLICTS.

It is quite apparent that it is not possible for unpatented lode mining claims to be indexed in an Office of the County Recorder in any manner which would permit an Abstractor to determine just what mining claims may conflict with any given tract. Also, the failure of an Abstract of Title to disclose any mining claims as conflicting with any given tract may not be relied upon as indicating there may not be in fact mining locations which do actually conflict with said tract. However, inasmuch as the SURVEY MAPS indicate no conflicting or adverse claims other than heretofore mentioned in this Title Opinion, it may be assumed until otherwise proven, that no conflicting

R. A. PITZER
P. O. BOX 287
GRAND JUNCTION, COLO.

EXCEPTIONS & RESERVATIONS

or adverse claims in fact exist which may effect the validity of the title to the above captioned unpatented lode mining claims. That with respect to the above unpatented lode mining claims which have been surveyed, and a SURVEY MAP furnished this office, it is assumed that the SURVEY MAP shows all conflicts; however, this Opinion makes no representation with respect to the effect or validity of any conflicting claims which do not in fact appear on said MAP, but which may be in existence and may be of record in the Office of the Recorder in and for the County of Garfield, State of Utah.

2. CORNERS AND MONUMENTS.

That with respect to the existence and location of the Corners and Monuments of the above described unpatented lode mining claims, as appearing in the Notices of Location, as amended, and as are shown on the SURVEY MAPS, it will be assumed until otherwise proven, that the MAPS correctly indicate the existence and location of all corners and monuments of said claims, as appearing in the descriptions of said instruments of record, and as appearing on said SURVEY MAPS. However, this Opinion makes no representation with respect to the actual existence or location of corners, monuments, or the posting of Notices upon said monuments, or to such any other fact as would be determined by an actual investigation upon the premises.

3. LIENS.

That with respect to the above captioned unpatented lode mining claims, the Abstract of Title discloses that there are no subsisting judgments appearing upon the dockets of the District Court in and for the County of Garfield, as indexed under the names of the original locators, however, this Opinion makes no representation with respect to the existence of judgements, mortgages, or liens of any nature which may appear of record effecting said claims, but which do not appear in the Abstract of Title, or which have not heretofore been discussed in this Title Opinion.

EXCEPTIONS & RESERVATIONS

4. AMENDED LOCATIONS.

That with respect to the above captioned unpatented lode mining claims, where the descriptions of the boundaries of the claims are altered by Amended Notices of Location, this Opinion makes no representation as to the existence or validity of any intervening or overlapping or conflicting claims which may be of record, but which are not heretofore discussed in this Opinion of Title, and which do not appear on the SURVEY MAPS of the said mining claims.

5. FEDERAL LAND STATUS.

As indicated by the foregoing comments, the mining claims have been determined to be VALID, subject to the provisions of the Mineral Leasing Act of 1920, as amended, and Public Law 585, where applicable; however, this Opinion makes no representation with any entries appearing in the records of the Office of the Bureau of Land Management which may effect the validity of the title to the said above captioned unpatented lode mining claims, other than those which have been heretofore discussed in this Opinion of Title.

DATED: this 6th day of July, in the year 1955.

RONALD G. WILCOX
Attorney-At-Law

LAW OFFICES
DIXON AND WILCOX
KEY BUILDING
MOAB, UTAH
PHONE ALPINE 3-2001

R. A. PITZER
P. O. BOX 227
GRAND JUNCTION, COLO.

This report was prepared by
J. M. HARLAN
Consulting Mining Engineer
1060 Grand Phone 4893
Grand Junction, Colorado

RECEIVED
MAR 12 1956

EXHIBIT IV

The Mt. Hillers Group
of
Moab Uranium Co.
Moab, Utah
in the
Henry Mt. District
Garfield Co., Utah

R. A. PYKER
P. O. BOX 227
GRAND JUNCTION

RECEIVED
MAR 12 1958

This examination was made at the request of C. M. Hickman, President of Moab Uranium Co., Moab, Utah, by J. M. Harlan, Consulting Mining Engineer, 1060 Grand Ave., Grand Junction, Colorado.

ABSTRACT

This property consists of 48 unpatented, contiguous claims in unsurveyed sections 11, 12, 13, 14 and 15, T 34 S, R 11 E, S.L.M. Henry Mt. District, Garfield County, Utah. The group claim names are Lamar 1-15, Ada 1-12 and 16, 17, 18, 19, Happy Shep 1-7, Astragulus 1-3, Dont Know 1-5, and Honky Tonk 1-2.

The property is an excellent drilling prospect due to 1 - ore exposures in the Morrison outcrop, 2 - the beds dip steeply south about 80° and then flatten out to almost level, 3 - the west end of the group is cut by a fault and the east end cut by a diorite porphyry dike, thus causing a possible ore trap. The drilling would vary in different portions of the group from 400 feet to 700 feet,

access drill roads would be easily constructed as the claim group is fairly flat. The property is easily accessible by an A. E. C. access all weather road.

INTRODUCTION

The purpose of the examination was to determine the advisibility of starting an exploration drilling program.

The property as described on the surveyed map by C. C. Cope, a Registered Land Surveyor, 48 contiguous, unpatented claims in unsurveyed sections 11, 12, 13, 14 and 15, T 34 S, R 11 E, S.L.M. Henry Mountain District, Garfield County, Utah.

The property is accessible by traveling south from Hanksville on the Hite-Hanksville road to the Trachite turnoff, take the Trachite road, for a total distance of 50.1 miles from Hanksville to the claim turnoff. The claims are 1 mile north of the highway at the foot of Mount Hillers. The Hanksville,

Hite, Trachite road is an Atomic Energy Commission access road and will be maintained the year around.

GEOGRAPHY

The Mt. Hillers group of claims lies at the southern edge of Mt. Hillers and is 51.1 miles south of Hanksville, Utah. The area is part of the Green River Desert area. The annual rainfall is about 2.75 inches. The vegetation is mostly sage brush and a few small stunted trees. The claim group is comparatively flat and drill roads would be easily constructed. The area is accessible most of the year and after the A.E.C. completes the graveling of the main access road the road should be an all weather access road.

Ore haulage could be made to Hite, Utah, or to Green River, Utah.

GEOLOGY

The claims lie at the southern tip of Mt. Hillers. The geologic section from north to south shows the core of Mt. Hillers to be a diorite porphyry

with an area surrounding this core of shattered sedimentary rocks irregularly intruded by igneous materials. The sedimentary beds are steeply tilted to about 80° dipping almost due south. The beds exposed from the mountain south show Triassic Chinle, Jurassic Wingate, Kayenta, Navajo, Carmel, Entrada, Summerville, and Morrison, then Cretaceous Dakota and Tununk Shale. These beds flatten out to the south. The claims are cut on the west edge by a fault and the eastern edge has a diorite porphyry dike cutting north-south across the claims. This could cause a pocket for mineralization where the steeply dipping beds level off. The drilling depths are estimated at 400 to 700 feet on different portions of this group.

Ore exposures were encountered in several places along the Morrisson exposures.

On the basis of the exposures, the possible structural trap of the steeply dipping beds and their flattening out to the south with the west end faulted and east end cut by a dike the property would warrant an exploration drilling program.

EXHIBIT V

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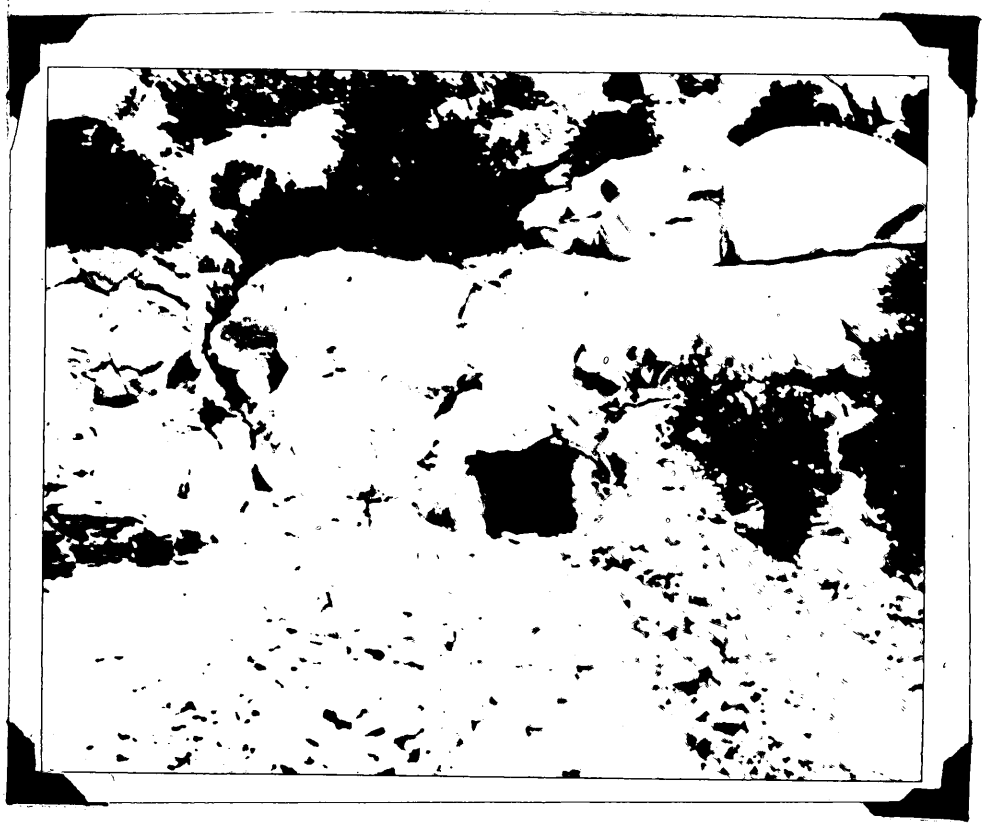

Happy Shep #2

R. A. [illegible]
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GRAND JUNCTION, COLO.

Happy Shep. #3 and #5

Ada and Happy Shep

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Happy Shep #2

R. A.
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EXHIBIT II

OPINION OF TITLE

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UNPATENTED LODE MINING CLAIMS

ROBERT A. PITZER CLAIMS GROUP

HENRY MOUNTAIN MINING DISTRICT

GARFIELD COUNTY

STATE OF UTAH

60 CLAIMS

Lamar	#1 thru #15
Ada	#1 thru #12
Ada	#15 thru #19
Ada	#15-A
Hill Top	#1 thru #13
Happy Shep	#1 thru #5
Happy Shepp	#6 and #7
Henky Tank	#1 and #2
Don't Know	#1 thru #5

RONALD G. WILCOX
Attorney-At-Law

DATED: this 6th day of July, in the year 1955.

LAW OFFICES
DIXON AND WILCOX
RILEY BUILDING
MOAB, UTAH
PHONE ALPINE 3-2001

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OPINION OF TITLE

UNPATENTED LODE MINING CLAIMS

ROBERT A. PITZER CLAIMS GROUP

RECEIVED
MAR 1 2 1956

HENRY MOUNTAIN MINING DISTRICT

GARFIELD COUNTY

STATE OF UTAH

CLAIMS

Lamar	#1 thru #15
Ada	#1 thru #12
Ada	#15 thru #19
Ada	#15-A
Hill Top	#1 thru #13
Happy Shep	#1 thru #5
Happy Shepp	#6 and #7
Honky Tonk	#1 and #2
Don't Know	#1 thru #5

ABSTRACTS EXAMINED

An examination has been made of an Abstract of Title to the Lamar #1 thru #15 mining claims, inclusive, consisting of 17 pages numbered from #1 to #17 inclusive, and an Abstract of Title to Ada #1 to #14 mining claims, inclusive, consisting of 15 pages, numbered from #1 to #15 inclusive, and an Abstract of Title to the Hill Top #1 to #13 mining claims, inclusive, consisting of 15 pages, numbered from #1 to #15 inclusive, and an Abstract of Title to Happy Shep #1 to #5 mining claims, and Happy Shepp #6 and #7 mining claims, and Honky Tonk #1 and #2 mining claims, consisting of 13 pages, numbered from #1 to #13 inclusive, all prepared by Bruce F. Parker, Abstracter, of Panguitch, Utah, as certified to on the 3rd day of May, in the year 1955, at 2:00 o'clock P.M., consisting of all instruments on file or of record as shown by the mining indices and records to which they refer, in the Office of the County Recorder, in and for the County of Garfield, State of Utah, that refer to or affect the title

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ABSTRACTS EXAMINED

to the mining claims above described since the date of location of the first Notice of Location, excepting therefrom claims with the same name, but not appearing in the chain of title from the original locators.

INSTRUMENTS EXAMINED

An examination has been made of those certain Contracts of Agreement, Quit Claim Deeds, and certain other mesne conveyances and instruments not yet placed of record, in the Office of the Recorder, in and for the County of Garfield, State of Utah, but furnished this office for examination in connection with the Opinion of Title, and an examination has been made of the instruments and entries of record in the Office of the Bureau of Land Management at Salt Lake City, Utah, made the 20th day of May, in the year 1955, covering any entries of record which would adversely effect mining claims and the location thereof.

MAPS EXAMINED

An examination has been made of a certain STADIA SURVEY MAP covering the above described mining claims known as the Hill Top #1 thru #13 mining claims, and showing said claims to be situate in Section 25 of Township 33 South, Range 11 East, and the W½ of the SW¼ of Section 30 in Township 33 South, Range 12 East, Salt Lake Base and Meridian, dated the 17th day of May, 1955, as prepared and certified to by Carlton C. Cope, Registered Land Surveyor, of the State of Utah, and of a certain SURVEY MAP covering the Lamar, Ada, Happy Shep, (Happy Shepp), Honky Tonk and Don't Know mining claims, and showing said claims to be located upon unsurveyed land, which when surveyed will probably be in Sections 9, 10, 11, 12, 14, 15, and 16, of Township 34 South, Range 11 East, Salt Lake Base and Meridian, dated the 28th day of May, 1955, as prepared and certified to by C. C. Cope, Registered Land Surveyor, of the State of Utah, and containing a recital that "four inches by four inches by four feet corners placed on all corners except five which have rock monuments and lathe. All monuments are in place, all Amended Notices placed on discovery monuments", and from said instruments, entries, mesne conveyances, and SURVEY MAPS, I find the legal

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MAPS EXAMINED

possessory title to the above described unpatented lode mining claims vested as indicated below, subject to the exceptions and reservations hereinafter contained.

TITLE VESTED

ROBERT A. PITZER.

From the examination of the above described instruments, and from the appropriate entries of record in the Office of the Bureau of Land Management at Salt Lake City, Utah, and from those certain mesne conveyances furnished this office for examination, I find there is vested in ROBERT A. PITZER, a good, marketable, and satisfactory possessory title to all of the above described unpatented lode mining claims subject to the exceptions and reservations hereinafter contained.

TITLE COMMENTS & REQUIREMENTS

1. IN RE. Land Status - Federal Applications.

The entries of record in the Office of the Bureau of Land Management at Salt Lake City, Utah, reflect that at the time the acts of location were made to all of the above described unpatented lode mining claims, the lands so located were part of the Public Domain and subject to location of mining claims under the provisions and requirements of the mining laws of the United States. The records indicate that the Hill Top group of mining claims were located upon surveyed land, and that there were no entries of record which would adversely effect mining claims located upon said lands within the past five years. The entries of record also disclose that the remainder of the claims were located upon unsurveyed land, however, according to the proposed plan of survey of this general area, It appears that the Township, when surveyed, will be a regular Township, with Township lines both Northerly and Southerly being parallel with the surveyed Township lines in this area. There will be no offsets as to the Township corners, and none of the Sections should be irregular Also, there are no entries of record which would adversely effect mining claims located within the past five years.

TITLE COMMENTS
& REQUIREMENTS

There are no existing Oil and Gas Leases or Applications nor are there any Potash or other Prospecting Permits or Applications covering any of the lands embraced by the above described unpatented lode mining claims. Nor will the subsequent Applications for any Oil and Gas Lease or Potash Prospecting Permit, or the issuance of any Lease or Permit by the Federal Government upon said lands pursuant to the provision of Public Law 585, effect the validity of the above unpatented lode mining claims. Under Public Law 585, Eighty Third Congress, Chapter 730, Second Session, the Mineral Leasing Laws and the Mining Laws were amended to provide for multiple mineral development of the same tracts of the Public Lands, and which rendered the Public Lands subject to the issuance of Leases or Potash Prospecting Permits by the Federal Government under the provisions of the Mineral Leasing Act of 1920, as amended. Upon the issuance of said Leases or Permits, the applicant, lessee, or permit holder would therefore be entitled to prospect for and conduct exploration work upon the lands embraced within any issued Lease or Prospecting Permit. If, prior to the discovery of minerals upon the subject claims, by the locator of the unpatented lode mining claims, or his successors in interest, or assigns, the Federal applicant or lessee conducting operations under the Leasing Act of 1920, in search of Leasing Act minerals, who should discover minerals other than those subject to the Mineral Leasing Act, and thereafter upon said discovery locate a mining claim, in that event the lessee or permit holder would in fact have some claim to a valid title to the premises so located.

Therefore, it is recommended that an actual discovery, essential to the validity of any mining location, be made, if not already made, upon all of the said claims, in order to protect them from any possible entry or location of mining claims by any subsequent lessee or applicant conducting Leasing Act operations upon the premises.

TITLE COMMENTS
& REQUIREMENTS

2. IN RE: Location Notices.

In addition to the original Notices of Location, certain Amended Notices of Location were made covering all of the above described unpatented lode mining claims with the exception of the Ada #15 to #19, Ada #15-A, and Don't Know #1 thru #5 groups of mining claims, and said Amended Notices have been placed on the discovery monuments, and have been recorded in the Office of the County Recorder in and for the County of Garfield, State of Utah, for the purpose of more definitely describing the boundaries of the said claims, and correcting any irregularities, informalities, or errors, and supplying omissions and correcting any defects which may have existed in the original locations, or the record thereof.

An examination has been made of the Notices of Location, as amended, covering the above described unpatented lode mining claims, and a comparison has been made with the descriptions of the claims as they appear in the Notices and amended Notices and the descriptions of the claims as they appear on the SURVEY MAPS, prepared by the aforementioned Carlton C. Cope. There are no material discrepancies existing between the descriptions contained in the Notices of Location, as amended, and the descriptions of the claims as they appear on the SURVEY MAPS. The descriptions contained in the Notices, as amended, are correct and proper, and conform with the requirements of the United States Mining Laws, with respect to the location of mining claims.

Further, the SURVEY MAPS disclose that there are no adverse or conflicting claims effecting the title to the above described unpatented lode mining claims, the subject matter of this Title Examination, except with respect to the W^2 of the mining claims known as Ada #10 and all of the mining claim known as Ada #11, which overlaps and extends into the mining claims known as Astragulus #1 and Astragulus #2, said claims being designated on the MAP as Astrugulus #1 and #2, and with respect to the SW portion of the Don't Know

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GRAND JUNCTION, COLO.

#4 mining claims which extends upon a small portion of the mining claim known as DKR #2. However, there has been obtained from the original locator, and owner, of the aforementioned Astragulus #1 and #2 mining claims, a deed conveying all right, title and interest to that part of the Astragulus #1 and #2 mining claims covered by the Ada claims, thereby eliminating any conflicts with respect to the Ada #10 and the Ada #11 mining claims. That with respect to the mining claim known as Don't Know #4, said claim was validly located, even though there is a small extension into the area embraced by the mining claim known as DKR #2. While there is some overlapping of the claim, the United States Mining Statutes do provide that in order to make the end line of a claim parallel a locator may locate his lines and establish his corners within and upon the surface of a valid senior location, providing the locator limits his claims to unoccupied ground and does not attempt to invade the rights of the prior appropriator. Asserting no claim to the area embraced by the DKR #2 mining claim, the overlap presents no problem at this time and may be disregarded.

The Notices of Location, as amended, disclose that as to some of the above described mining claims, the location (discovery) monuments are identical with the end center monuments. If it is intended that said location monument be considered as a discovery monument, there may be some question as to whether the discovery is actually within the boundaries of the claims as described. If not intended as the discovery monument, it should be kept in mind that the location of any subsequent discovery and the establishment of any location (discovery) monument should be well within the boundary lines of the above described mining properties.

3. IN RE: Annual Labor.

Pursuant to the requirements of the United States Mining Laws providing for the performance each year of "not less than $100.00 worth of labor" and development work on all claims for which no patent has been issued, and

TITLE COMMENTS & REQUIREMENTS

pursuant to the requirements of Title 40, Chapter 1, Section 6, of the Utah Code Annotated, 1953, requiring the owner of any lode mining claim to file an Affidavit of Work done or improvements made on said claims, the requisite Affidavits of Labor have been recorded in the Office of the County Recorder in and for the County of Garfield, State of Utah, and, where applicable, notice has been posted upon each claim at the discovery monument pursuant to the provision of Section 5 of said Title 40, Chapter 1, of the aforementioned Utah Code Annotated.

TITLE STATUS

From the above and foregoing comments, and from the information disclosed by the Abstracts of Title, and from the Amended Notices of Location, and from those certain unrecorded Contracts of Agreement, Deeds, and mesne conveyances furnished this office for examination, and from the appropriate entries of record in the Office of the Bureau of Land Management at Salt Lake City, Utah, and from the information disclosed by the aforementioned SURVEY MAPS, the above described unpatented lode mining claims appear to be VALID as originally located, and vesting a good, marketable, and satisfactory title to all of the above described unpatented lode mining claims in ROBERT A. PITZER, subject to the exceptions and reservations hereinafter contained.

EXCEPTIONS & RESERVATIONS

1. CONFLICTS.

It is quite apparent that it is not possible for unpatented lode mining claims to be indexed in an Office of the County Recorder in any manner which would permit an Abstractor to determine just what mining claims may conflict with any given tract. Also, the failure of an Abstract of Title to disclose any mining claims as conflicting with any given tract may not be relied upon as indicating there may not be in fact mining locations which do actually conflict with said tract. However, inasmuch as the SURVEY MAPS indicate no conflicting or adverse claims other than heretofore mentioned in this Title Opinion, it may be assumed until otherwise proven, that no conflicting

EXCEPTIONS & RESERVATIONS

or adverse claims in fact exist which may effect the validity of the title to the above captioned unpatented lode mining claims. That with respect to the above unpatented lode mining claims which have been surveyed, and a SURVEY MAP furnished this office, it is assumed that the SURVEY MAP shows all conflicts; however, this Opinion makes no representation with respect to the effect or validity of any conflicting claims which do not in fact appear on said MAP, but which may be in existence and may be of record in the Office of the Recorder in and for the County of Garfield, State of Utah.

2. CORNERS AND MONUMENTS.

That with respect to the existence and location of the Corners and Monuments of the above described unpatented lode mining claims, as appearing in the Notices of Location, as amended, and as are shown on the SURVEY MAPS, it will be assumed until otherwise proven, that the MAPS correctly indicate the existence and location of all corners and monuments of said claims, as appearing in the descriptions of said instruments of record, and as appearing on said SURVEY MAPS. However, this Opinion makes no representation with respect to the actual existence or location of corners, monuments, or the posting of Notices upon said monuments, or to such any other fact as would be determined by an actual investigation upon the premises.

3. LIENS.

That with respect to the above captioned unpatented lode mining claims, the Abstract of Title discloses that there are no subsisting judgments appearing upon the dockets of the District Court in and for the County of Garfield, as indexed under the names of the original locators, however, this Opinion makes no representation with respect to the existence of judgements, mortgages, or liens of any nature which may appear of record effecting said claims, but which do not appear in the Abstract of Title, or which have not heretofore been discussed in this Title Opinion.

EXCEPTIONS & RESERVATIONS

4. AMENDED LOCATIONS.

That with respect to the above captioned unpatented lode mining claims, where the descriptions of the boundaries of the claims are altered by Amended Notices of Location, this Opinion makes no representation as to the existence or validity of any intervening or overlapping or conflicting claims which may be of record, but which are not heretofore discussed in this Opinion of Title, and which do not appear on the SURVEY MAPS of the said mining claims.

5. FEDERAL LAND STATUS.

As indicated by the foregoing comments, the mining claims have been determined to be VALID, subject to the provisions of the Mineral Leasing Act of 1920, as amended, and Public Law 585, where applicable; however, this Opinion makes no representation with any entries appearing in the records of the Office of the Bureau of Land Management which may affect the validity of the title to the said above captioned unpatented lode mining claims, other than those which have been heretofore discussed in this Opinion of Title.

DATED: this 6th day of July, in the year 1955.

RONALD G. WILCOX
Attorney-At-Law

LAW OFFICES
DIXON AND WILCOX
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PHONE ALPINE 3-2001

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This report was prepared by
J. M. HARLAN
Consulting Mining Engineer
1060 Grand Phone 4893
Grand Junction, Colorado

EXHIBIT IV

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The Mt. Hillers Group
of
Moab Uranium Co.
Moab, Utah
in the
Henry Mt. District
Garfield Co., Utah

K. A. PITZER
P. O. BOX 237
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This examination was made at the request of C. M. Hickman, President of Moab Uranium Co., Moab, Utah, by J. M. Harlan, Consulting Mining Engineer, 1060 Grand Ave., Grand Junction, Colorado.

ABSTRACT

This property consists of 48 unpatented, contiguous claims in unsurveyed sections 11, 12, 13, 14 and 15, T 34 S, R 11 E, S.L.M. Henry Mt. District, Garfield County, Utah. The group claim names are Lamar 1-15, Ada 1-12 and 16, 17, 18, 19, Happy Shep 1-7, Astragulus 1-3, Dont Know 1-5, and Honky Tonk 1-2.

The property is an excellent drilling prospect due to 1 - ore exposures in the Morrison outcrop, 2 - the beds dip steeply south about 80° and then flatten out to almost level, 3 - the west end of the group is cut by a fault and the east end cut by a diorite porphyry dike, thus causing a possible ore trap. The drilling would vary in different portions of the group from 400 feet to 700 feet,

access drill roads would be easily constructed as the claim group is fairly flat. The property is easily accessible by an A. E. C. access all weather road.

INTRODUCTION

The purpose of the examination was to determine the advisibility of starting an exploration drilling program.

The property as described on the surveyed map by C. C. Cope, a Registered Land Surveyor, 48 contiguous, unpatented claims in unsurveyed sections 11, 12, 13, 14 and 15, T 34 S, R 11 E, S.L.M. Henry Mountain District, Garfield County, Utah.

The property is accessible by traveling south from Hanksville on the Hite-Hanksville road to the Trachite turnoff, take the Trachite road, for a total distance of 50.1 miles from Hanksville to the claim turnoff. The claims are 1 mile north of the highway at the foot of Mount Hillers. The Hanksville,

Hite, Trachite road is an Atomic Energy Commission access road and will be maintained the year around.

GEOGRAPHY

The Mt. Hillers group of claims lies at the southern edge of Mt. Hillers and is 51.1 miles south of Hanksville, Utah. The area is part of the Green River Desert area. The annual rainfall is about 2.75 inches. The vegetation is mostly sage brush and a few small stunted trees. The claim group is comparatively flat and drill roads would be easily constructed. The area is accessible most of the year and after the A.E.C. completes the graveling of the main access road the road should be an all weather access road.

Ore haulage could be made to Hite, Utah, or to Green River, Utah.

GEOLOGY

The claims lie at the southern tip of Mt. Hillers. The geologic section from north to south shows the core of Mt. Hillers to be a diorite porphyry

with an area surrounding this core of shattered sedimentary rocks irregularly intruded by igneous materials. The sedimentary beds are steeply tilted to about 80° dipping almost due south. The beds exposed from the mountain south show Triassic Chinle, Jurassic Wingate, Kayenta, Navajo, Carmel, Entrada, Summerville, and Morrison, the Cretaceous Dakota and Tununk Shale. These beds flatten out to the south. The claims are cut on the west side by a fault and the eastern edge has a diorite porphyry dike cutting north-south across the claims. This could cause a pocket for mineralization where the steeply dipping beds level off. The drilling depths are estimated at 400 to 700 feet on different portions of this group.

Ore exposures were encountered in several places along the Morrisson exposures.

On the basis of the exposures, the possible structural trap of the steeply dipping beds and their flattening out to the south with the west end faulted and east end cut by a dike the property would warrant an exploration drilling program.

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MT. HILLERS GROUP

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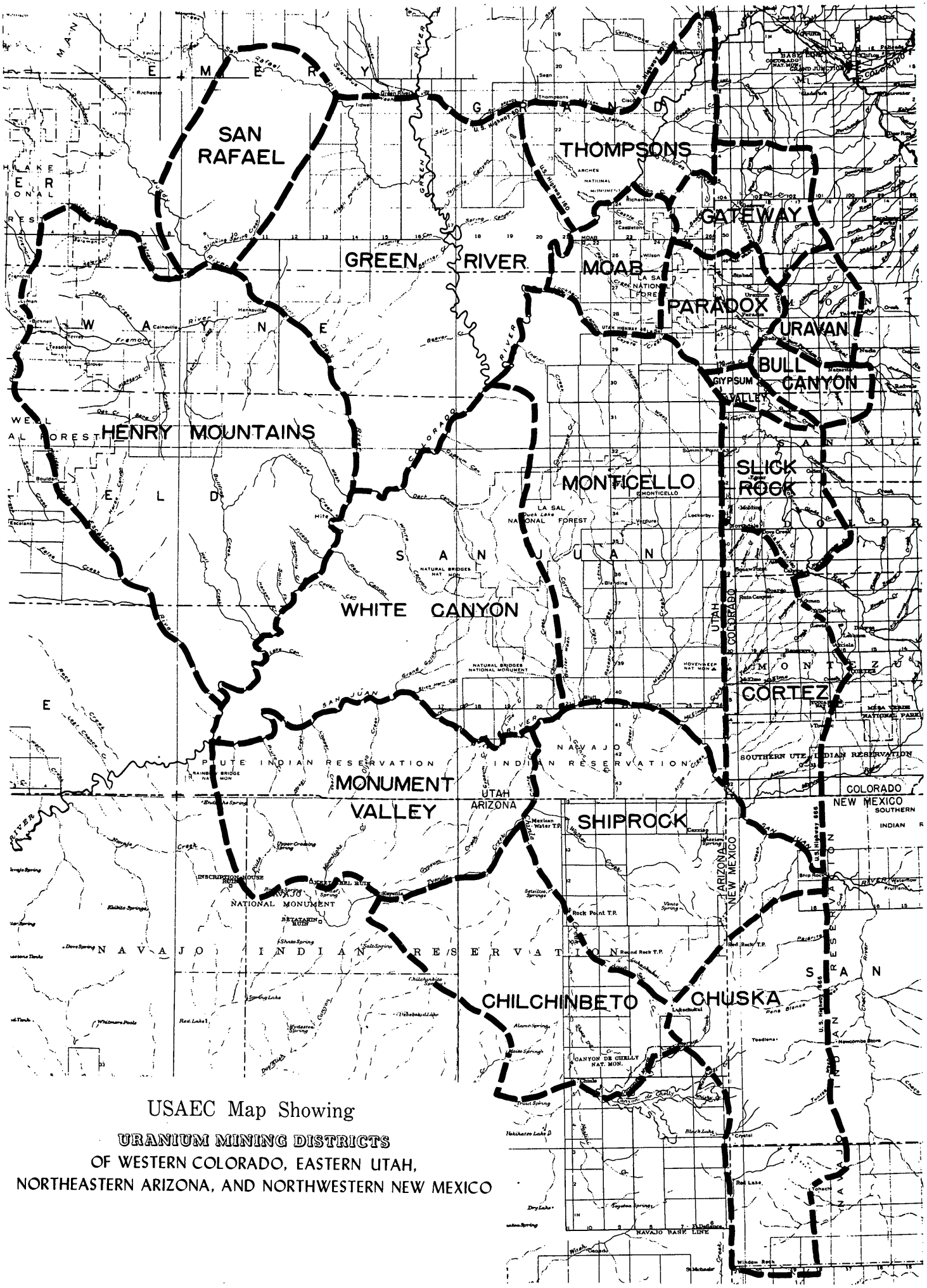

USAEC Map Showing

URANIUM MINING DISTRICTS

OF WESTERN COLORADO, EASTERN UTAH, NORTHEASTERN ARIZONA, AND NORTHWESTERN NEW MEXICO

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MOUNT HILLERS GROUP

Introduction

This report deals with the geology of the claims, hereafter called the Mt. Hillers Group, which lay in the southern portion of the Henry Mountains. These claims encompass a considerable amount of lateral area besides being located ina very complex and detailed geological province.

This report is meant to be no more than an initial paper on the group and the geology entailed thereon. However, extensive work has been done on the primary geology of the Henry Mountains themselves by the "Geology Survey" of the United States Government and has been presented in Professional Paper 228 for the public's benefit and use. This geologist has borrowed freely from this paper and used it as a basis for his report in relation to the general descriptive geology envolved herein. The evaluative and detailed geology, however, represent his own thoughts in regards to the local area of the group itself.

Location

The Mt. Hillers Group lays approximately 65 miles south of Hanksville, Utah, in the Henry Mountain Range. This group is situated on the south flank of Mt. Hillers in Townships 33 and 34 South, Range 11 and 12 East in Garfield County. These claims are accessable by unimproved road.

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MAR 22 1956

General Structure of the Henry Mountains Region

"The Henry Mountains structural basin is one of the major structural depressions of the Colorado Plateau and is the counterpart of the upwarps of the Circle Cliffs and the San Rafael Swell which border it, being of the same size and form, only inverted.

Although the Henry Mountains are near the geographic center of the basin, they are on the gentle east flank about 12 miles east of the trough.

Each of the Henry Mountains is a huge structural dome. The southern four domes are each 6 to 8 miles in diameter, whereas the northern dome, Mount Ellen, is twice that width. Each has several thousand feet of structural relief that interrupts the otherwise gentle east flank of the structural basin. The gentle west dip of this flank of the basin persists around the mountains and when projected through them meets with the dip on the other side.

By and large, the domes have smooth flanks, but all except the Mt. Ellsworth dome, have superposed upon the top of a great many samll anticlinal noses and domes produced by the individual laccoliths or other intrusions. The smaller folds are each a mile or two in diameter, have a structural relief of a few hundred to 1,500 feet, and are not circular but are tongue-shaped, like the laccoliths that produce them.

The Henry Mountains structural basin was produced by orogenic

movements, probably in late Cretaceous or early Tertiary time. The major domes of the five mountains and the smaller anticlines on their tops were produced by intrusions, probably subsequent to the orogenic folding, perhaps in early or middle Tertiary time."

Structure of the Henry Mountains

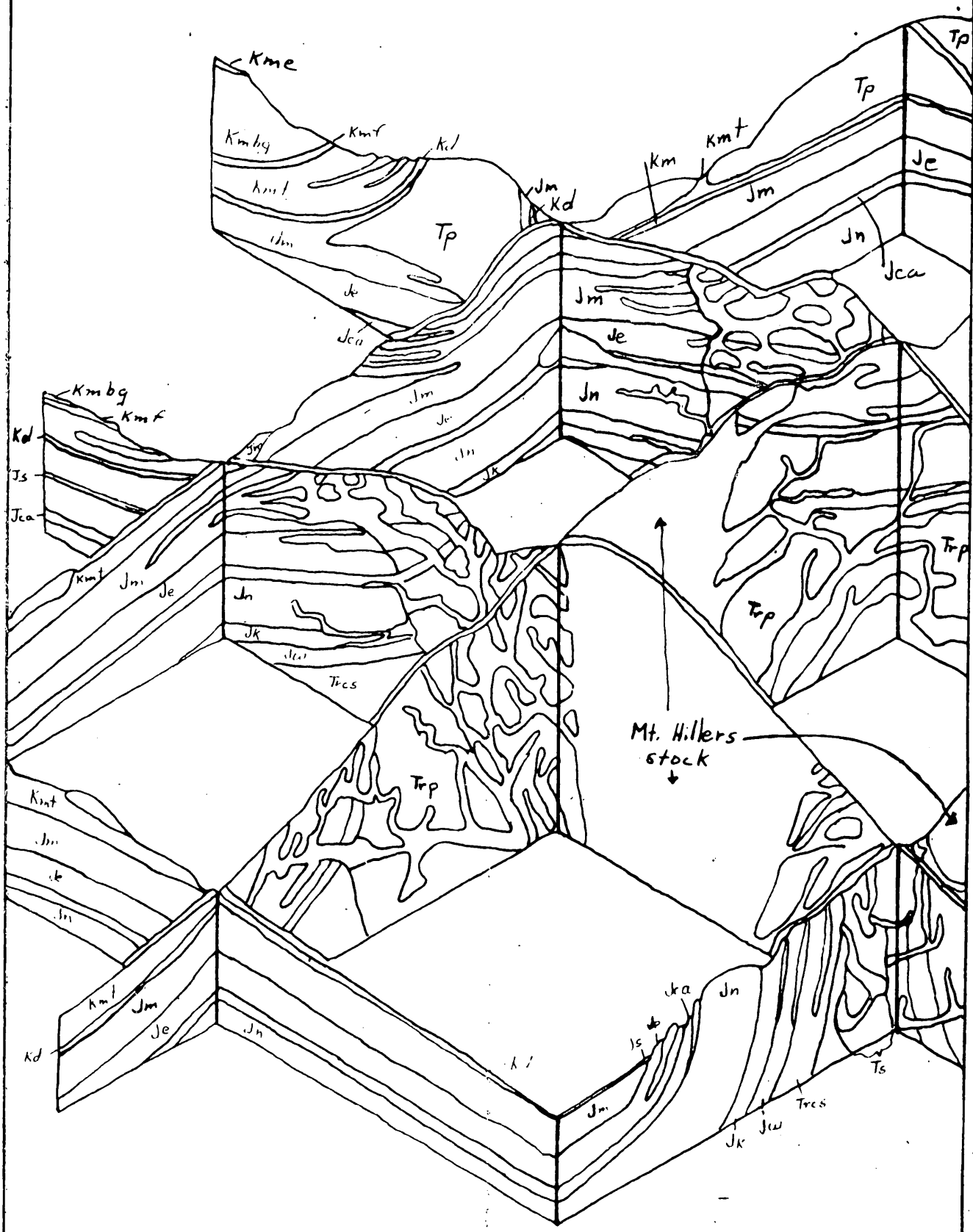
"Each of the Henry Mountains consists of a stock around which the laccoliths or other intrusions are clustered. Although the porphyry in the stocks is like the porphyry in the surrounding intrusions, a number of features indicate that the stocks were the chief centers of the igneous activity and involved intrusive processes distinct from those involved in the surrounding intrusions. In the first place, the stocks are crosscutting bodies located at the centers of the mountain domes whereas the other intrusions are mostly concordant and are distributed aroundthe flanks and across the tops of the mountain domes. Secondly, around each stock is a shattered and somewhat metamorphosed zone of rocks which is a mile wide around the larger stocks; there has been no such shattering and only very slight metamorphism around the other intrusions. Thirdly, the larger stocks contain minor metaliferous deposits but none is known in the other intrusions. Finally, the laccoliths and related intrusions seem to have been injected radially from the stocks.

The intrusions are well jointed, but most of the joints are irregular and seem to bear only casual relation to the contacts or

shape of the intrusion. Columns are well developed locally, particularly where the intrusions are thin, but where the intrusions thicken the columns are lost in an irregular joint system. Sheeting parallel to the contacts is even less consistent and tends to be interrupted by sweeping curved joints. The slight metamorphism throughout the Henry Mountains suggests that the intrusions were not highly heated and that they did not yield much volatile material. Even above the thick laccoliths, shale beds are merely indurated for a few feet. The most intense metamorphism is found in the shatter zone around the stocks, but even here the metamorphism is marked only by conversion of the shale to hornfels, slight induration of the sandstone, and development of epidote.

The five mountains are very different structurally. The Mt. Ellen dome is the widest and has a broad plateau top wrinkled with many small anticlinal folds. The Mount Hillers dome is the highest and steepest and the anticlinal folds over the laccoliths on it and on the Mt. Pennell dome lie mostly on the north and northeast flanks of the domes. The Mt. Holmes domes is the smallest and its top is anticlinally folded. No subordinate anticlines mar the symetry of the Mt. Ellsworth dome. Faulting is restricted to the southern two mountains.

All of the intrusive rock is diorite porphty, except some monzonite porphyty on Mt. Pennell and some very minor intrusions of basalt and aplite. The different intrusions of diorite porphyry



ISOMETRIC FENCE DIAGRAM ILLUSTRATING STRUCTURAL RELATIONS OF A PORTION OF THE INTRUSIONS ON THE SOUTH OF MOUNT HILLERS*

*Professional Paper 228, Pl. 13; U. S. Dept. Of the Interior, Geological Survey

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MAR 12 1956

possess considerable textural variation, but no correlation was found between form of intrusion and textural variety.

General Geology of Mt. Hillers

"The Mount Hillers dome and the stock at the center of it comprise the southern half of the mountain and provide one of the most spectacular landscape views in the Henry Mountains. To the east, south, and west of this part of the mountain, Cretaceous and uppermost Jurassic beds rise gradually onto the big dome. Mountainward, the dips progressively steepen and older and older formations, down to the Permian, are exposed in colorful concentric bands. The resistant and almost vertical sandstones form high walls between strike valleys of the brightly colored shales. The continuity of the formations is broken only by sills and radial dikes whose dark masses mottle the variegated bands.

As one goes toward the center of the dome and approaches the stock, the sedimentary rocks become more and more crushed and the sills and dikes become more numerous and much less regular in form. Adjoining the stock is a shatter zone in which individual intrusions are too numerous and to irregular to bemapped separately. The width of the shatter zone ranges from a half a mile to more than a mile. Inside the shattr zone is a huge mass of moderately homogenous diorite porphyry that comprises the stock, about 2½ square miles in area. The stock and the shatter zone are located somewhat

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MAR 12 1956

off the center of the mountain dome, and they discordantly cut off more than 2,000 feet of strata between the south and north sides of the dome."

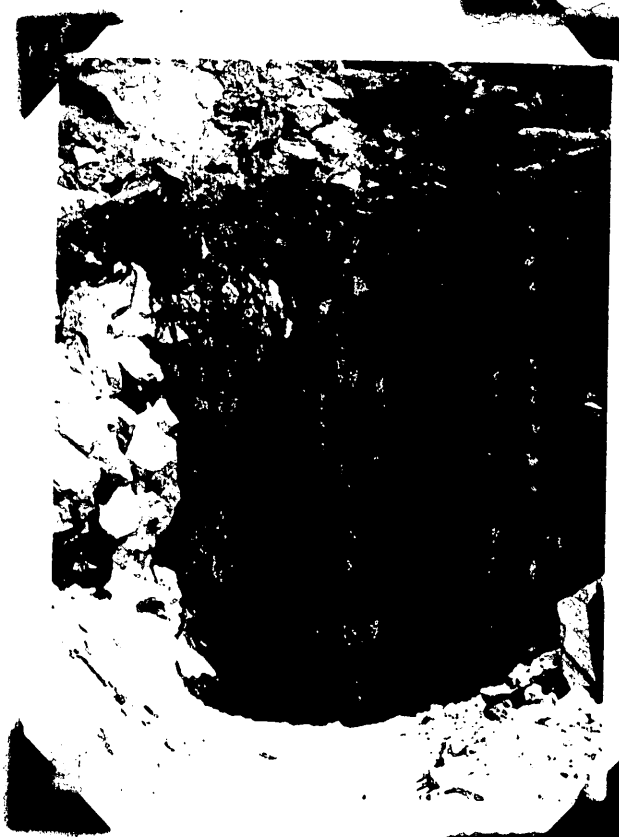
Local Geology of the Mt. Hillers Group

Laying for the most part on the south flank of Mt. Hillers, this group is directly tied into the igneous geology which has been represented in the preceeding paragraphs. The sedimentary beds are representative of a thick section that includes Cretaceous thru Permian age beds. The major initial consideration here is of course the possibilities of uranium mineralization in the Salt Wash member of the Morrison Formation encompassed by the claim group.

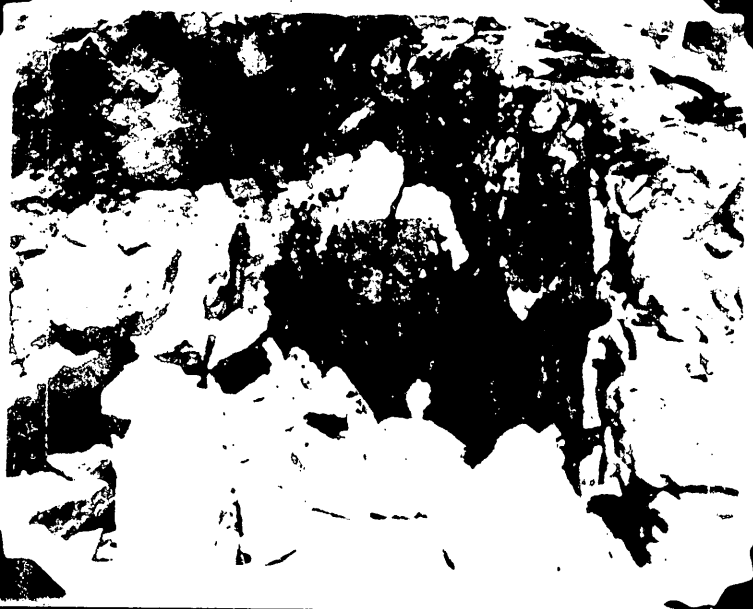
Due to the orogenic disturbance which resulted in the formation of the Henry Mountains and more specifically Mt. Hillers, the Sedimentary strata were disrupted and folded accordingly. The end result placed the formations at a steep dip on the flanks of the mountain itself. On the claims, exposures of many formations including the Morrison are found to be vertical. Within the area of the claims, sills and dikes are found to have penetrated the planes between and across some of the formations.

On the western end of the Mt. Hillers Group, to which this discussion will be limited at this time, several "White caps" or exposures of the Salt Wash are found. These main vertical outcrops are designated as "A", "B", and "C" on the enclosed geologic outcrop

View showing whitecap "C" on Mt. Hillers Group. Note vertical position of exposed sandstone.



Drift on whitecap "B". 0.10% U_3O_8 samples have been taken from several thin streaks here.



Small drift on top of whitecap "B". Shrockengerite and Tyuyamunite have been found here in abundance.

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MAR 12 1956

map. These actual Salt Was exposures are surrounded by alluium and talus and obscure the intervening areas of the Morrison.

This exposed Salt Wash represents several sandstone rims of the Morrison Formation. The rock is for the most part gray-white to gray-green to sandy brown.

Occurrences of pebble material, trash and mineralized trees were observed indicating that this rock has the same sedimentary characteristics as are found in it in other localities. Much of the area is covered by the diorite porphyry of the igneous rocks which have washed down off the steep slopes.

The structural position of the Salt Wash and the other vertical sedimentary beds is directly associated with the intrusive rocks. These conditions all make for favorable occurrences of mineralization.

Evaluation

Since the initial acquisition of this group, drifting has been commenced on the "B" white-cap. Evidence of uranium mineralization has been found in the forms of Tyuyamunite, Cornotite, and Schroeckingerite. This drifting has been restricted to the sandy brown layer on the northern side of the outcrops. This would be along the bottom of the Salt Wash section. This is called to attention along with the fact that the beds are vertical. Assays from here have run as high as 0.26% U3 O8. Almost any ofthe indicated

View of formation on north side of Mt. Hillers Group. Beds are standing at 80° to 90° dip and have intrusive dikes and sills mixed with them.

View of Mt. Hillers and the Mt. Hillers Group, which stretches along the base of the area shown in the background at the foot of the mountain.

rock will assay 0.10% U3 O8. This is felt to be quite favorable as the samples are from weathered surfaces or heavily fractured strata almost immediately adjacent to the surface.

White caps "A" and "C" were investigated also and gave very favorable count on their northern sides along the same stralgraphic level in the sand brown sandstone rim. These factors would lead to the possible conclusion that a mineralized zone could extend throughout this constant rim or layer.

Little time was spent on the rest of the property; and, therefore, evaluation of the rest of the claims is not possible until another visit to the field is made.

On the indication found at the surface in the Salt Wash, it is entirely possible that a large source of ore lies below the claims, possibly at a depth of around 400 feet. Due to the extreme bending of the strata which has left them in a vertical position, thinning and/or breaks can easily have occurred on the hinge line of the bent strata. A reference to the enclosed isometric fence diagram can help one to visualize the structure and relationship of the sedimentary and igneous rock.

Not to be overlooked is the fact that sills and dikes are entirely possible below the surface and in the sedimentary formations in the area of the hinge line. This could certainly be the source of the surface mineralization and could possibly be considered as a chance for primary ore.

MAR 12 1956

Drifting operations are being made at the time of this report, on the western end of White-cap "B", that will lead tothe fringe area of the ore source.

Conclusion

On the basis of the structural and sedimentary geology involved on the claims, and on the basis of surface mineralization and count, it is felt by this geologist that these claims have an excellent possibility of having a large mineralized source that would place an excellent value on the uranium prospects of the property.

Signed,

Phillip M. Pitzer

Phillip M. Pitzer

PP/jp

Smith's Laboratory

CHEMIST AND ASSAYER

MOAB, UTAH

Phil Pitzer

RECEIVED

MAR 12 1956

July 30, 1955

Sample Description	% U_3O_8	% V_2O_5	%	%	%	%			
Happy Hop Claim	0.161	2.72							

TOTAL CHARGES $ 4.00

J. Earl Smith
CHEMIST

Smith's Laboratory

CHEMIST AND ASSAYER

MOAB, UTAH

Moab Uranium Co.

Aug. 26, 1955

Sample Description	% U_3O_8	% V_2O_5	% $CaCO_3$	%	%	%			
Henry Mt.	0.268	0.14	1.80						

TOTAL CHARGES $ 5.00

J. Earl Smith
CHEMIST

RECEIVED
MAR 12 1956

MT. HILLERS GROUP

DMEA - 4212

R. A. PITZER
P. O. BOX 237
GRAND JUNCTION, COLO.

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MAR 12 1956

MOUNT HILLERS GROUP

Introduction

This report deals with the geology of the claims, hereafter called the Mt. Hillers Group, which lay in the southern portion of the Henry Mountains. These claims encompass a considerable amount of lateral area besides being located ina very complex and detailed geological province.

This report is meant to be no more than an initial paper on the group and the geology entailed thereon. However, extensive work has been done on the primary geology of the Henry Mountains themselves by the "Geology Survey" of the United States Government and has been presented in Professional Paper 228 for the public's benefit and use. This geologist has borrowed freely from this paper and used it as a basis for his report in relation to the general descriptive geology envolved herein. The evaluative and detailed geology, however, represent his own thoughts in regards to the local area of the group itself.

Location

The Mt. Hillers Group lays approximately 65 miles south of Hanksville, Utah, in the Henry Mountain Range. This group is situated on the south flank of Mt. Hillers in Townships 33 and 34 South, Range 11 and 12 East in Garfield County. These claims are accessable by unimproved road.

R. A. [illegible]
P. O. [illegible]
GRAND JUNCTION, COLO.

General Structure of the Henry Mountains Region

"The Henry Mountains structural basin is one of the major structural depressions of the Colorado Plateau and is the counterpart of the upwarps of the Circle Cliffs and the San Rafael Swell which border it, being of the same size and form, only inverted.

Although the Henry Mountains are near the geographic center of the basin, they are on the gentle east flank about 12 miles east of the trough.

Each of the Henry Mountains is a huge structural dome. The southern four domes are each 6 to 8 miles in diameter, whereas the northern dome, Mount Ellen, is twice that width. Each has several thousand feet of structural relief that interrupts the otherwise gentle east flank of the structural basin. The gentle west dip of this flank of the basin persists around the mountains and when projected through them meets with the dip on the other side.

By and large, the domes have smooth flanks, but all except the Mt. Ellsworth dome, have superposed upon the top of a great many samll anticlinal noses and domes produced by the individual laccoliths or other intrusions. The smaller folds are each a mile or two in diameter, have a structural relief of a few hundred to 1,500 feet, and are not circular but are tongue-shaped, like the laccoliths that produce them.

The Henry Mountains structural basin was produced by orogenic

movements, probably in late Cretaceous or early Tertiary time. The major domes of the five mountains and the smaller anticlines on their tops were produced by intrusions, probably subsequent to the orogenic folding, perhaps in early or middle Tertiary time."

Structure of the Henry Mountains

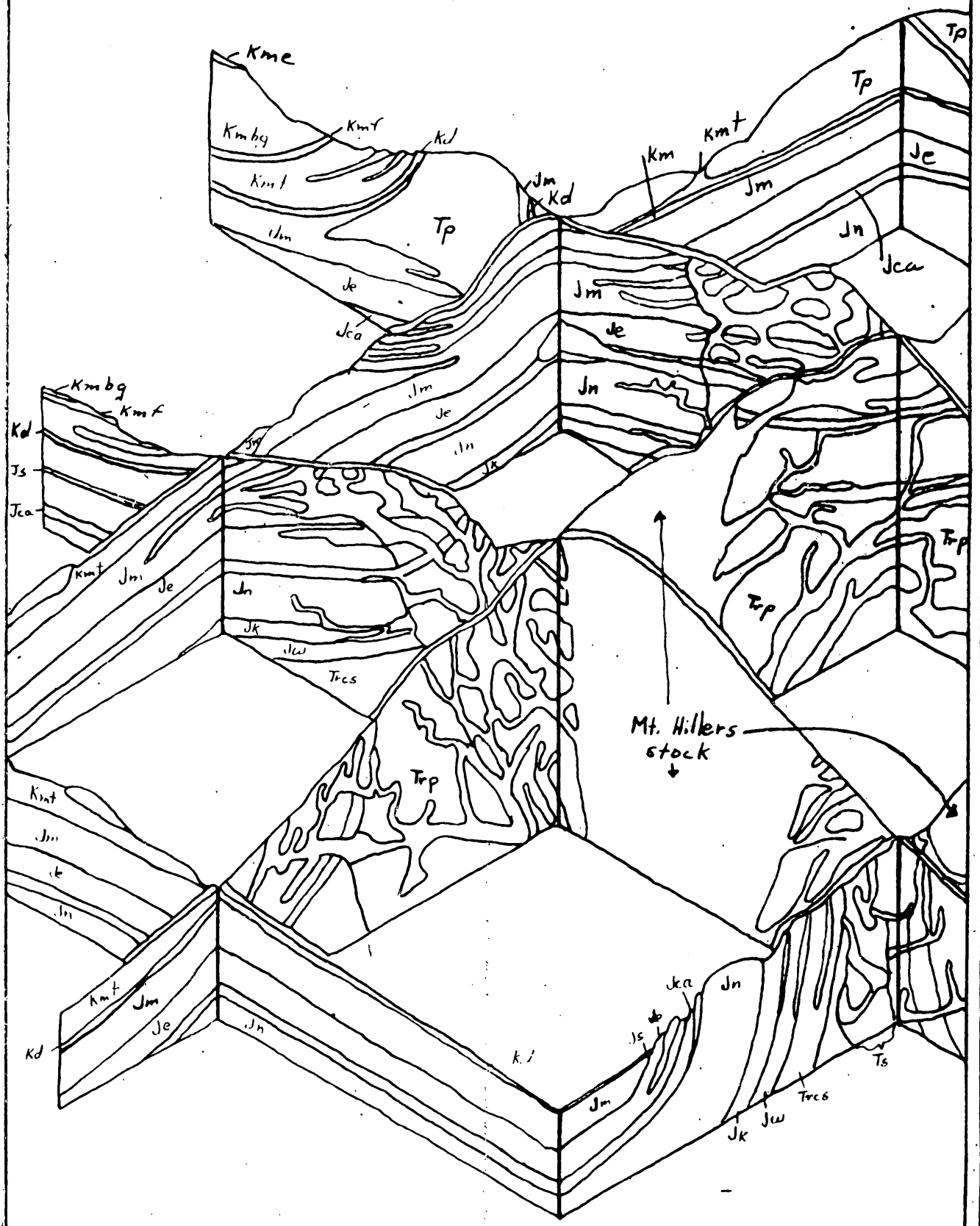
"Each of the Henry Mountains consists of a stock around which the laccoliths ore other intrusions are clustered. Although the porphyry in the stocks is like the porphyry in the surrounding intrusions, a number of features indicate that the stocks were the chief centers of the igneous activity and involved intrusive processes distinct from those involved in the surrounding intrusions. In the first place, the stocks are crosscutting bodies located at the centers of the mountain domes whereas the other intrusions are mostly concordant and are distributed aroundthe flanks and across the tops of the mountain domes. Secondly, around each stock is a shattered and somewhat metamorphosed zone of rocks which is a mile wide around the larger stocks; there has been no such shattering and only very slight metamorphism around the other intrusions. Thirdly, the larger stocks contain minor metaliferous deposits but none is known in the other intrusions. Finally, the laccoliths and related intrusions seem to have been injected radially from the stocks.

The intrusions are well jointed, but most of the joints are irregular and seem to bear only casual relation to the contacts or

shape of the intrusion. Columns are well developed locally, particularly where the intrusions are thin, but where the intrusions thicken the columns are lost in an irregular joint system. Sheeting parallel to the contacts is even less consistent and tends to be interrupted by sweeping curved joints. The slight metamorphism throughout the Henry Mountains suggests that the intrusions were not highly heated and that they did not yield much volatile material. Even above the thick laccoliths, shale beds are merely indurated for a few feet. The most intense metamorphism is found in the shatter zone around the stocks, but even here the metamorphism is marked only by conversion of the shale to hornfels, slight induration of the sandstone, and development of epidote.

The five mountains are very different structurally. The Mt. Ellen dome is the widest and has a broad plateau top wrinkled with many small anticlinal folds. The Mount Hillers dome is the highest and steepest and the anticlinal folds over the laccoliths on it and on the Mt. Pennell dome lie mostly on the north and northeast flanks of the domes. The Mt. Holmes domes is the smallest and its top is anticlinally folded. No subordinate anticlines mar the symetry of the Mt. Ellsworth dome. Faulting is restricted to the southern two mountains.

All of the intrusive rock is diorite porphty, except some monzonite porphyty on Mt. Pennell and some very minor intrusions of basalt and aplite. The different intrusions of diorite porphyry



ISOMETRIC FENCE DIAGRAM ILLUSTRATING STRUCTURAL RELATIONS OF A PORTION OF THE INTRUSIONS ON THE SOUTH OF MOUNT HILLERS*

*Professional Paper 228, Pl. 13; U. S. Dept. Of the Interior, Geological Survey

possess considerable textural variation, but no correlation was found between form of intrusion and textural variety.

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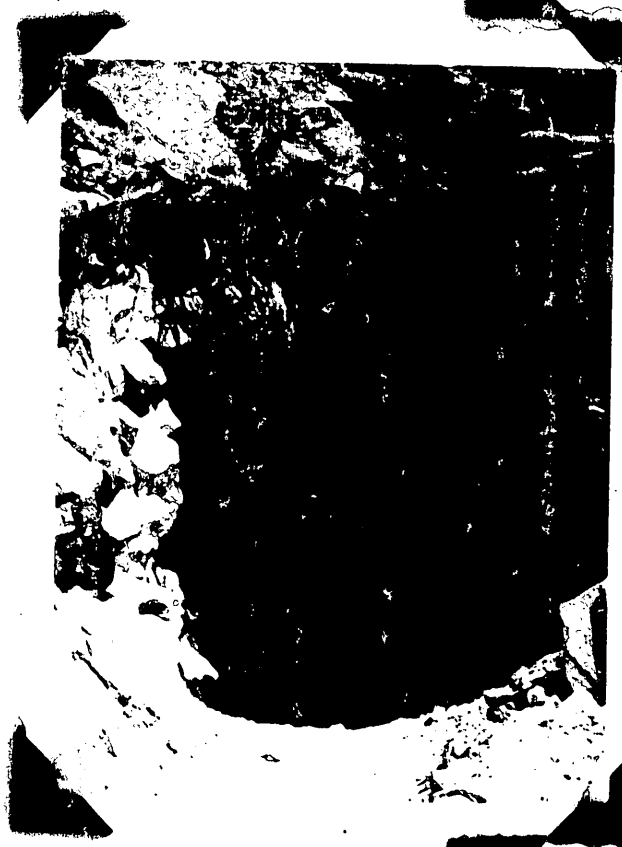
On the western end of the Mt. Hillers Group, to which this discussion will be limited at this time, several "White caps" or exposures of the Salt Wash are found. These main vertical outcrops are designated as "A", "B", and "C" on the enclosed geologic outcrop

View showing whitecap "C" on Mt. Hillers Group. Note vertical position of exposed sandstone.



Drift on whitecap "B". 0.10% U_3O_8 samples have been taken from several thin streaks here.

Small drift on top of whitecap "B". Shrockengerite and Tyuyamunite have been found here in abundance.

map. These actual Salt Was exposures are surrounded by alluium and talus and obscure the intervening areas of the Morrison.

This exposed Salt Wash represents several sandstone rims of the Morrison Formation. The rock is for the most part gray-white to gray-green to sandy brown.

Occurrences of pebble material, trash and mineralized trees were observed indicating that this rock has the same sedimentary characteristics as are found in it in other localities. Much of the area is covered by the diorite porphyry of the igneous rocks which has washed down off the steep slopes.

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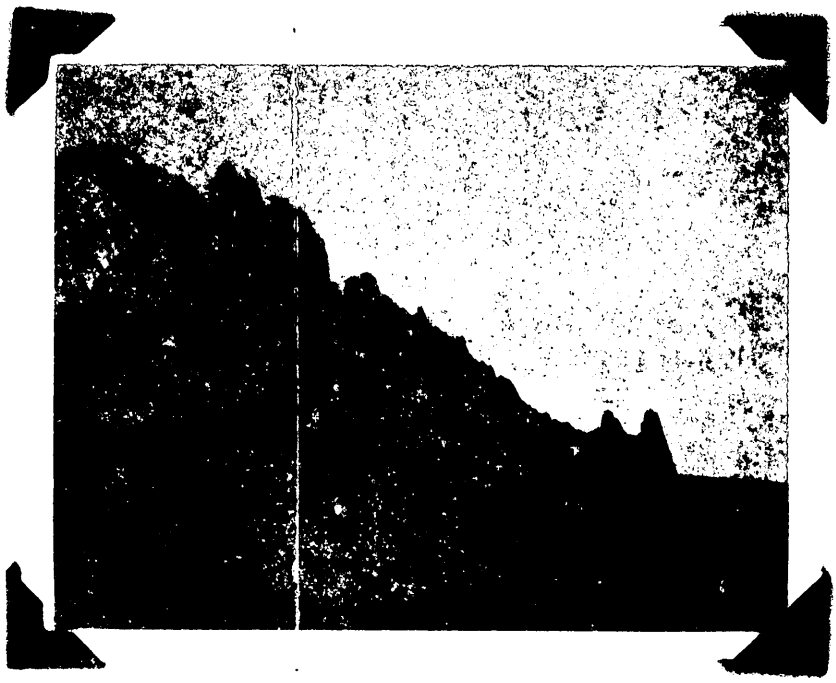
Since the initial acquisition of this group, drifting has been commenced on the "B" white-cap. Evidence of uranium mineralization has been found in the forms of Tyuyamunite, Carnotite, and Schroeckingerite. This drifting has been restricted to the sandy brown layer on the northern side of the outcrops. This would be along the bottom of the Salt Wash section. This is called to attention along with the fact that the beds are vertical. Assays from here have run as high as 0.26% U_3O_8. Almost any ofthe indicated



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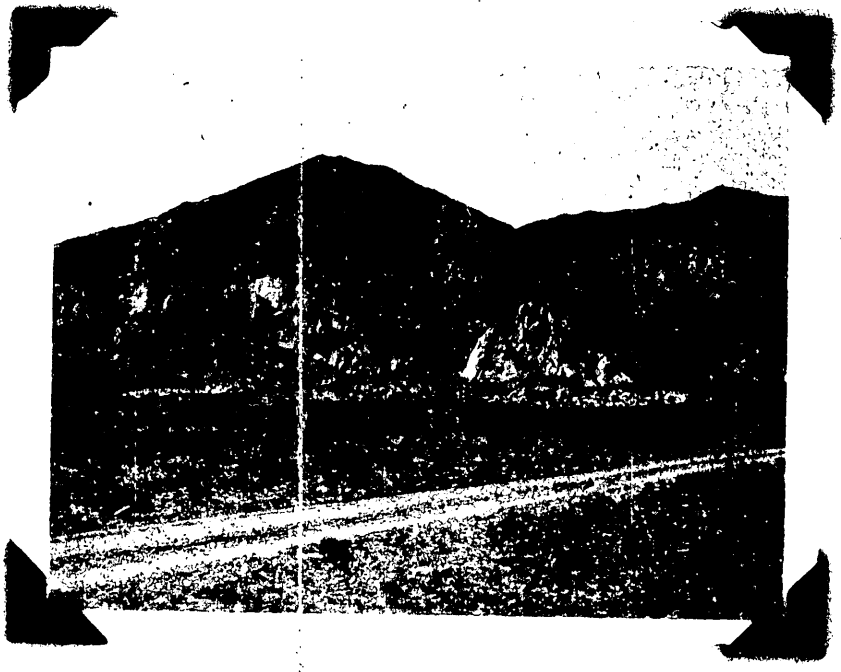

View of Mt. Hillers and the Mt. Hillers Group, which stretches along the base of the area shown in the background at the foot of the mountain.

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Signed,

Phillip M. Pitzer

PP/jp

M. A. PITZER
P. O. BOX 237
LAKE CITY, COLO.

Smith's Laboratory

CHEMIST AND ASSAYER

MOAB, UTAH

R. A. PITZER
P. O. BOX 237
GRAND JUNCTION, COLO.

Phil Pitzer

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MAR 12 1956

July 30, 1955

Sample Description	% U_3O_8	% V_2O_5	%	%	%	%			
Happy Hope Claim	0.161	0.72							

TOTAL CHARGES $ 4.00

J. Earl Smith
CHEMIST

Smith's Laboratory

CHEMIST AND ASSAYER

MOAB, UTAH

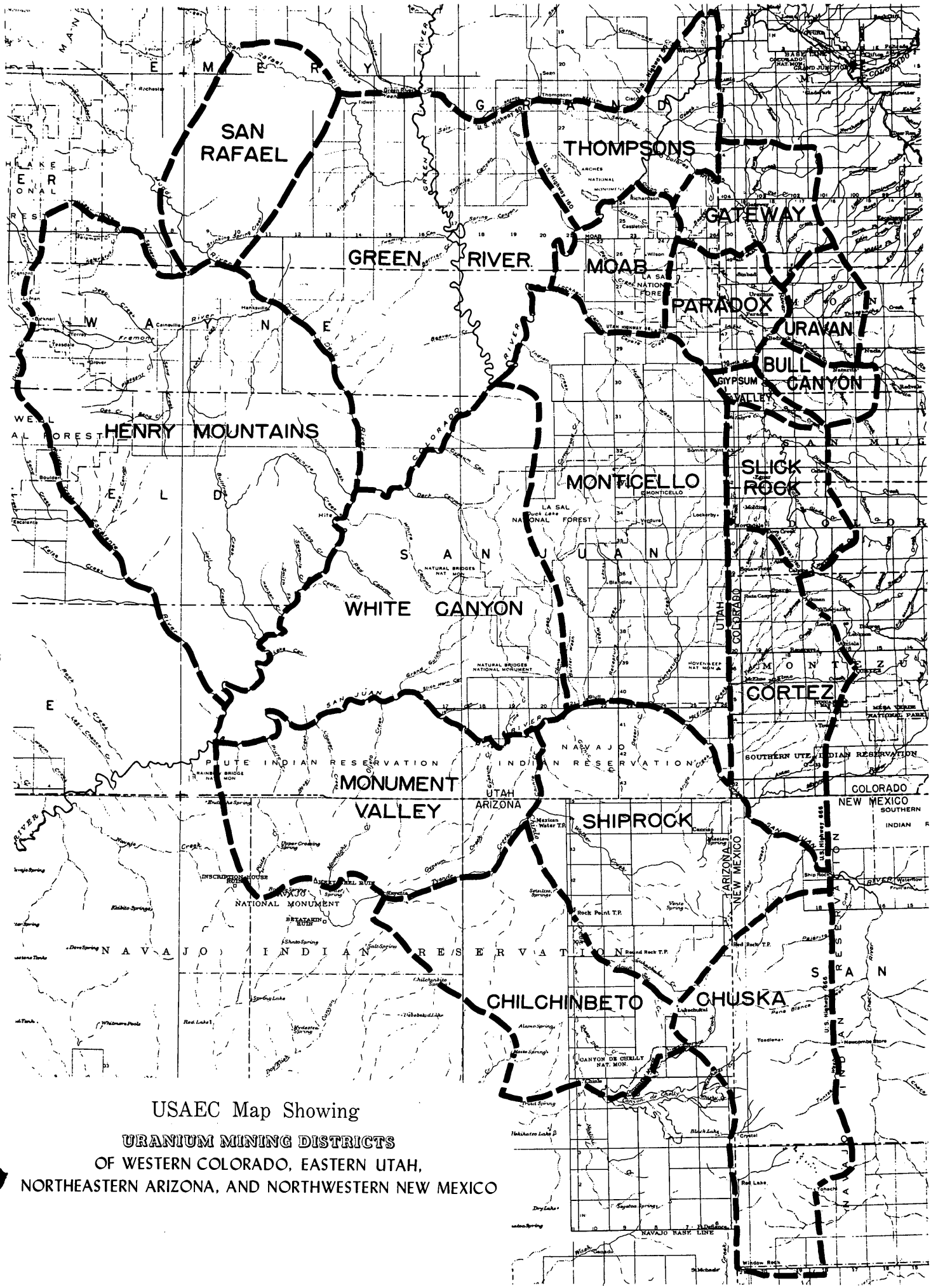
Moab Uranium Co.

Aug. 26, 1955

Sample Description	% U_3O_8	% V_2O_5	% CaO_2	%	%	%			
Henry Mt.	0.268	0.14	1.80						

TOTAL CHARGES $ 5.00

J. Earl Smith
CHEMIST



USAEC Map Showing

URANIUM MINING DISTRICTS

OF WESTERN COLORADO, EASTERN UTAH,
NORTHEASTERN ARIZONA, AND NORTHWESTERN NEW MEXICO

A STADIA SURVEY
OF
59 URANIUM CLAIMS
FOR
MR R. A. (BOB) PITZER,
ASST. EXECUTIVE VICE PRESIDENT,
OF MOAB URANIUM CO.
LOCATION, OF THESE CLAIMS,
T34S, R11E, UNSURVEYED LAND
GARFIELD CO., UTAH.

CERTIFICATION;
I C.C. Cope hereby certify that I am a registered LAND SURVEYOR, and that this plat was prepared from actual field notes of a survey made under my supervision, and is true and correct to the best of my knowledge and belief.

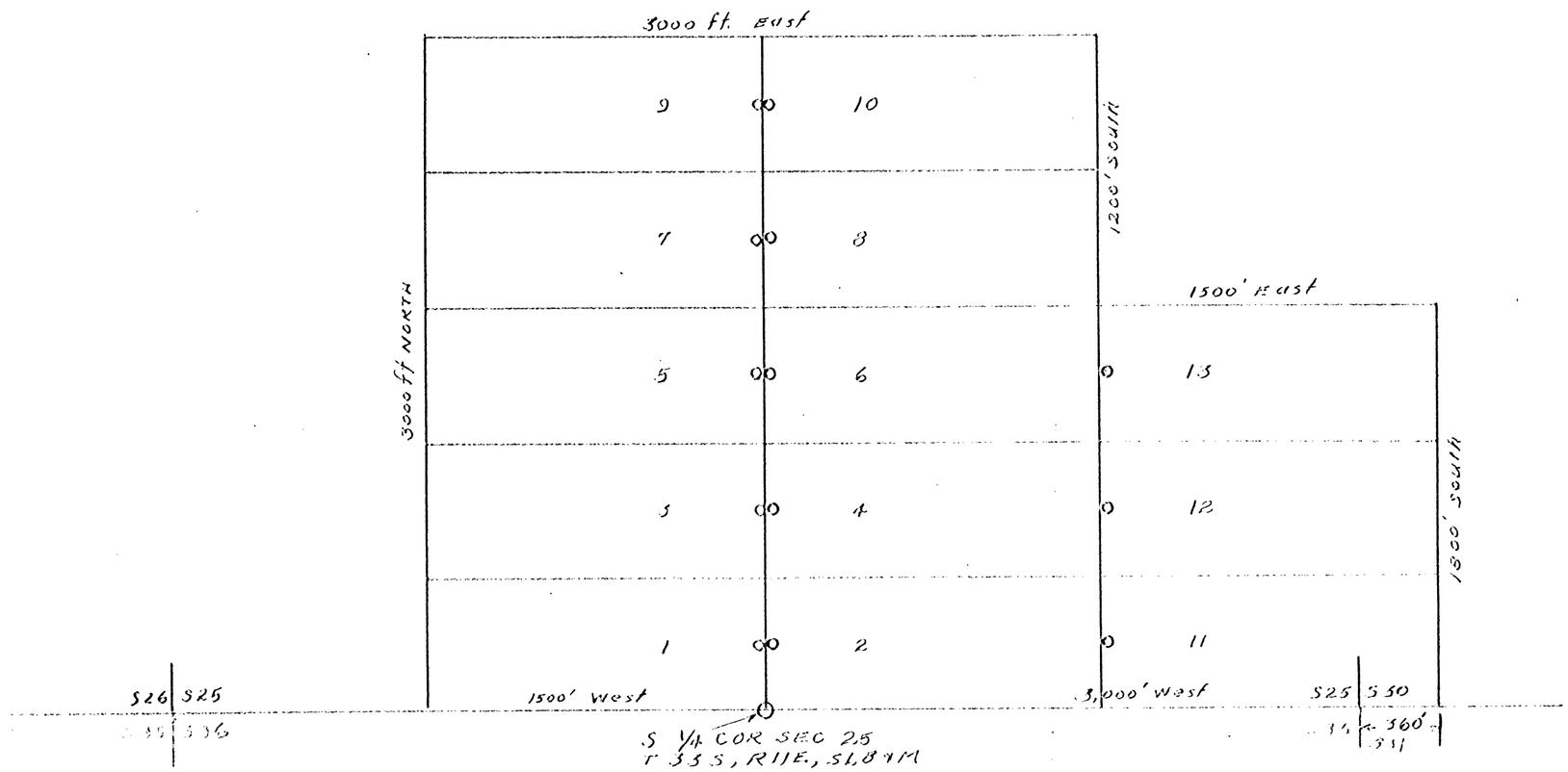
C. C. Cope
Reg. L.S. Utah. #1492
May 28, 1955 Amended Date

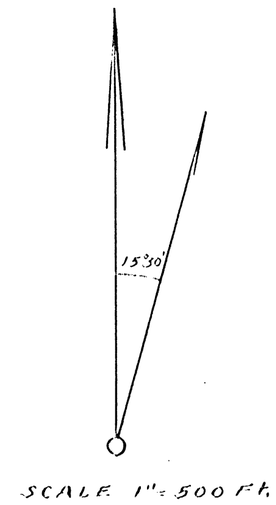
4"X4"X4' Corners placed on all corners except 5, which have Rock monuments and All monuments are in place. All amended notices placed on discovery monuments.

C.C. Cope

EXHIT III

MT HILLERS D M E A APPLICATION





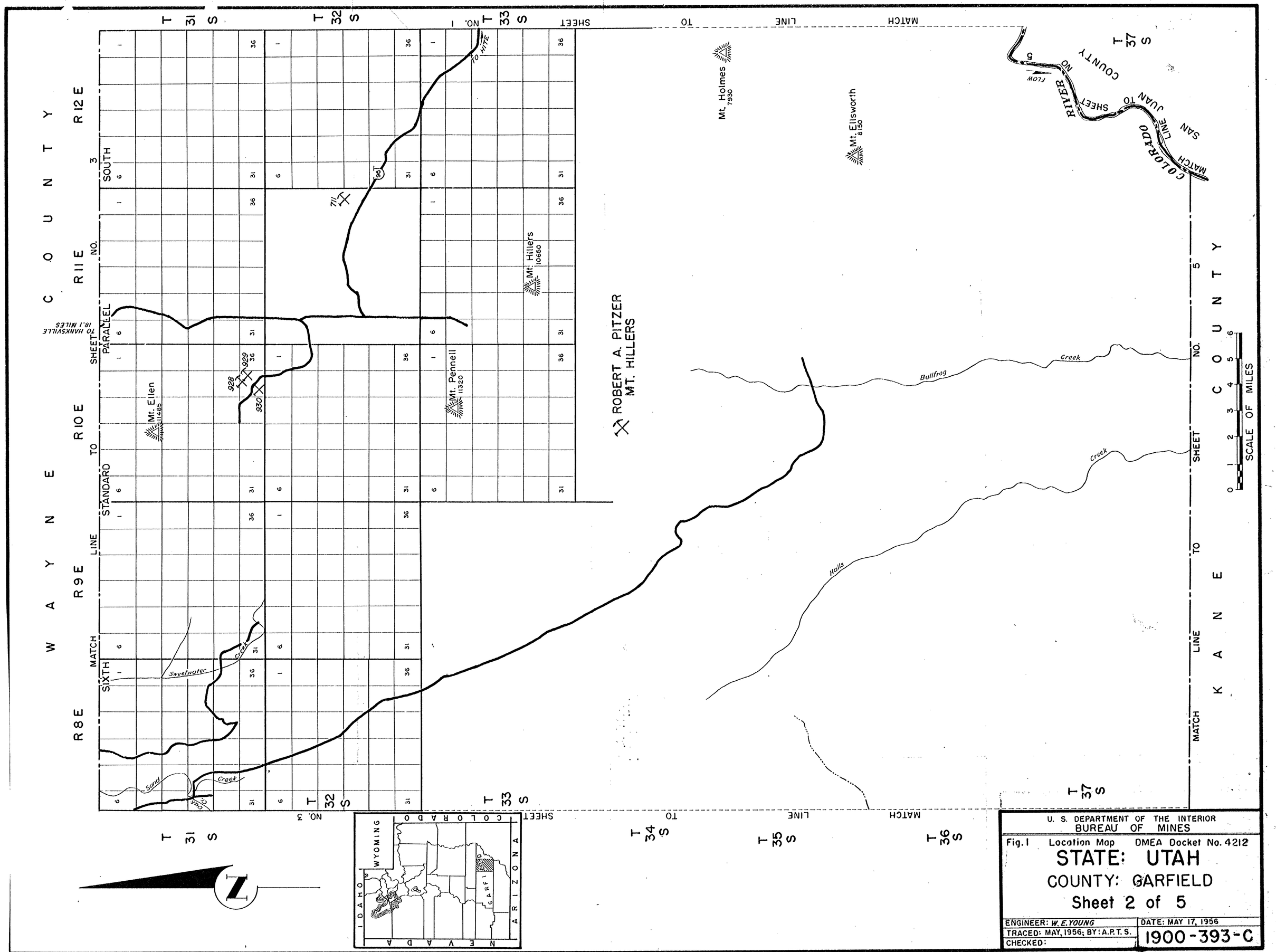
"HILLTOP" 1 - 13 CLAIMS

CERTIFICATION

I, CARLTON C. COPE, hereby certify that I am a registered land surveyor and that this plat was prepared from actual field notes of a survey made by me or under my supervision, and is true and correct to the best of my knowledge and belief.

Carlton C. Cope
Reg. L.S. Utah # 1492
Date May 17, 1955.

A STADIA SURVEY
OF
13 MINING CLAIMS
FOR
MOAB URANIUM COMPANY
LOCATION GARFIELD CO. UTAH
Boundary as shown.

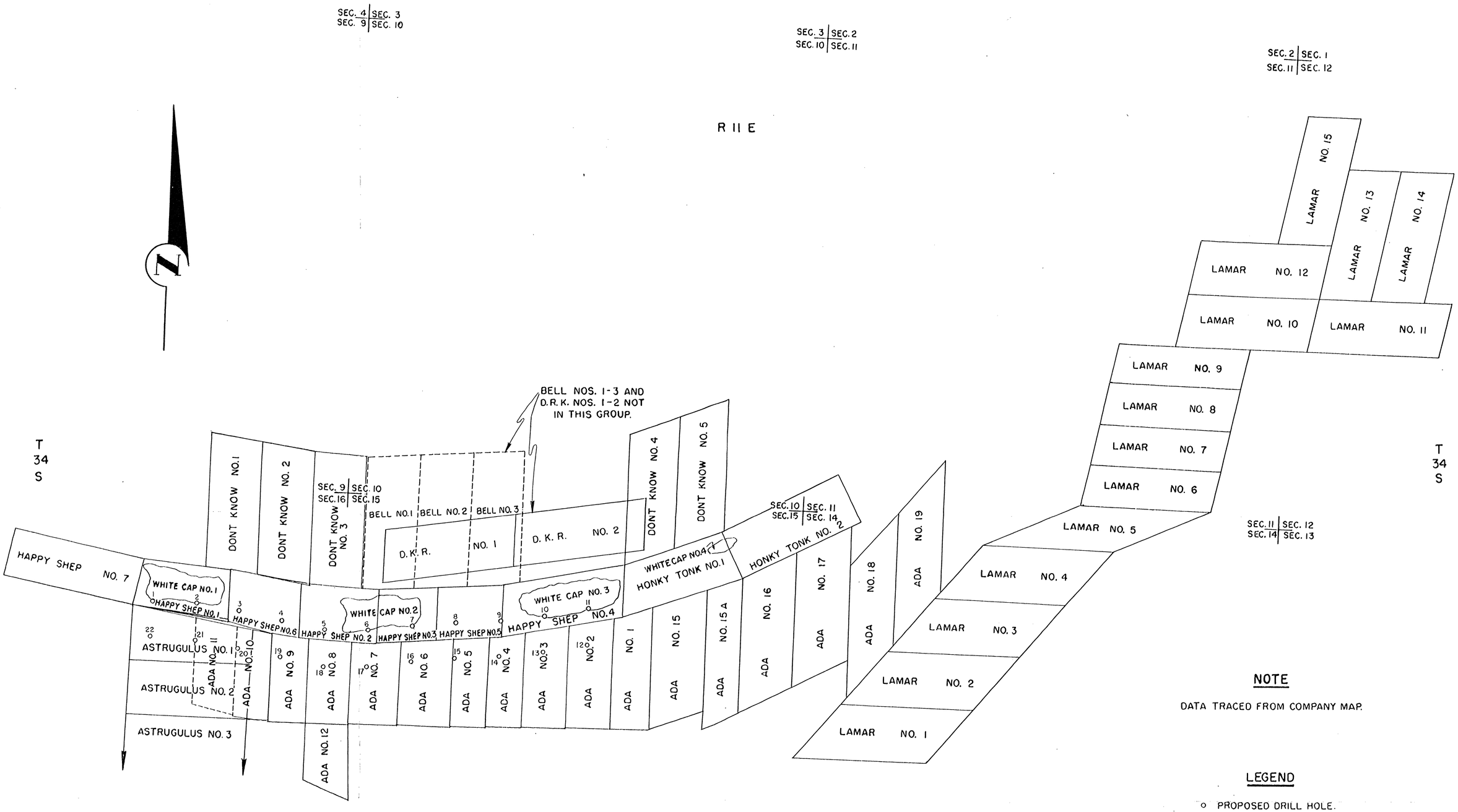


U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 1 Location Map DMEA Docket No. 4212

STATE: UTAH
COUNTY: GARFIELD
Sheet 2 of 5

ENGINEER: W. E. YOUNG	DATE: MAY 17, 1956
TRACED: MAY, 1956; BY: A.P.T.S.	1900-393-C
CHECKED:	



NOTE

DATA TRACED FROM COMPANY MAP.

LEGEND

o PROPOSED DRILL HOLE.

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

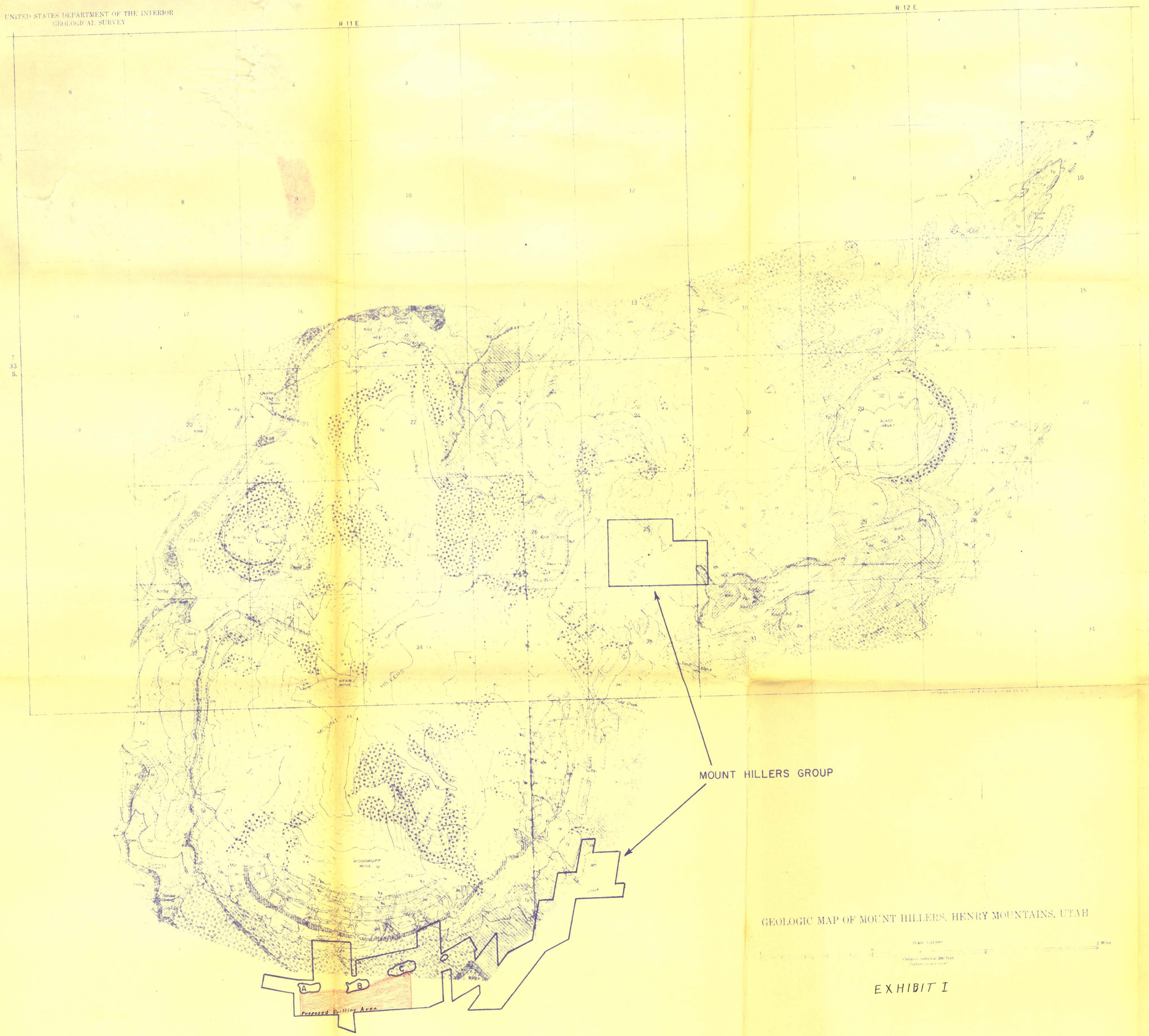
Fig. 2 DMEA Docket No. 4212

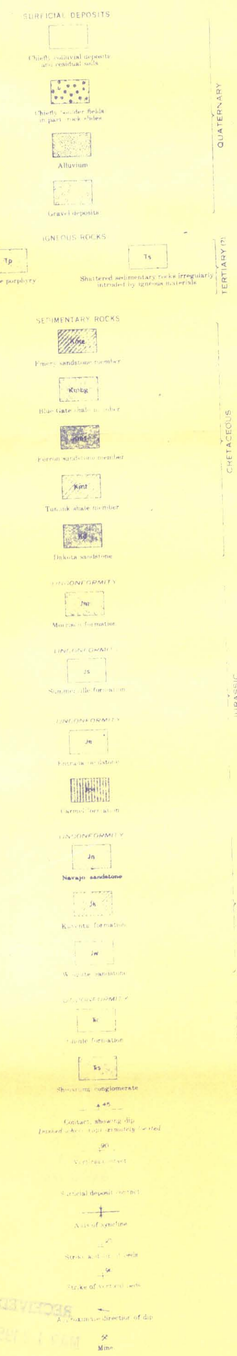
Claim Map

ROBERT A. PITZER
MT. HILLERS

GARFIELD COUNTY, UTAH

ENGINEER: *W. E. YOUNG*	DATE: MAY 21, 1956
TRACED: MAY, 1956; BY: A.P.T.S.	1900-394-D
CHECKED:	

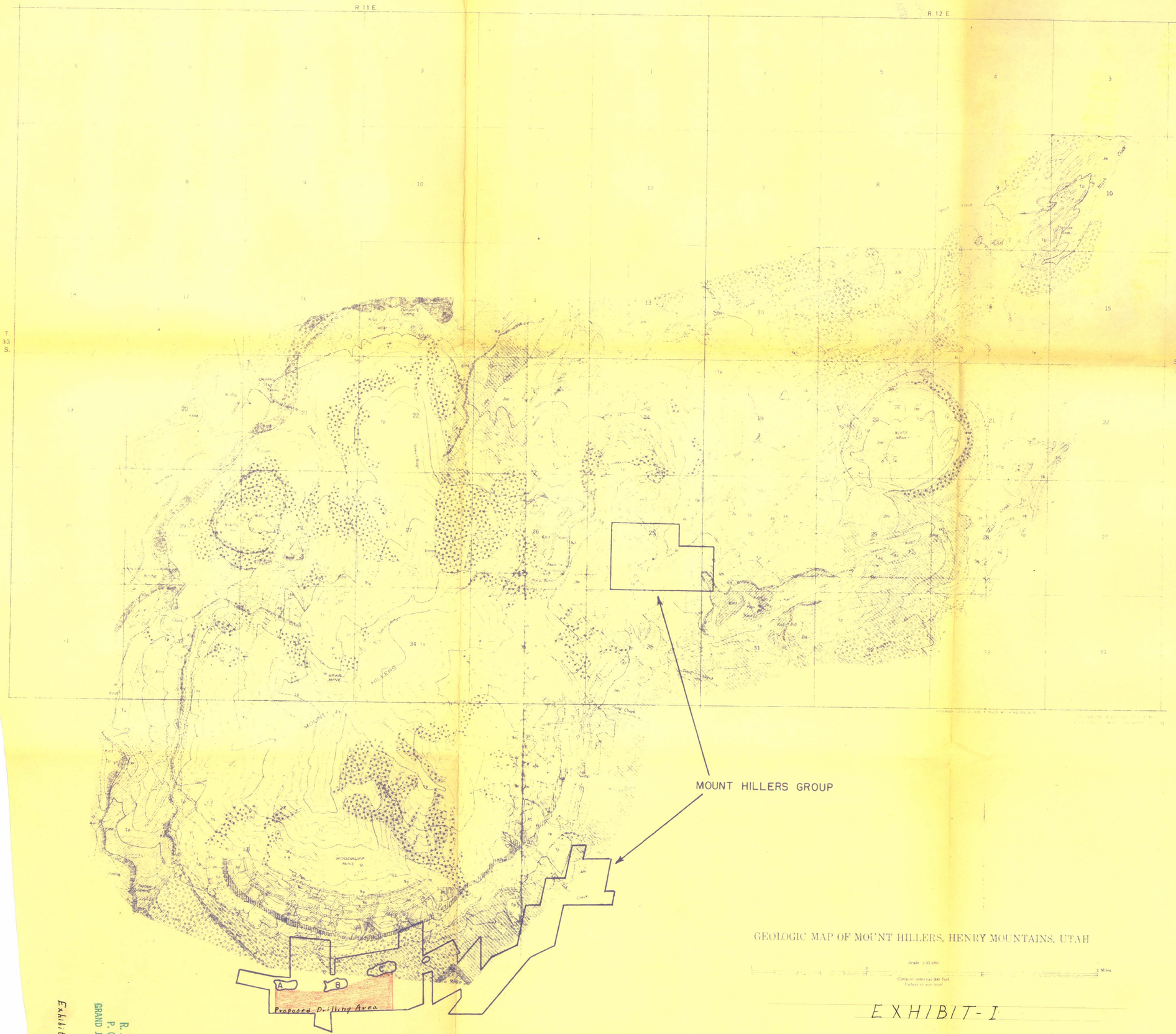




GEOLOGIC MAP OF MOUNT HILLERS, HENRY MOUNTAINS, UTAH

EXHIBIT I

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



PROFESSIONAL PAPER 228 PLATE 12

EXPLANATION

SURFICIAL DEPOSITS

Chiefly colluvial deposits and residual soils

Chiefly boulder fields in part rock slides

Alluvium

Gravel deposits

IGNEOUS ROCKS

Tp — Diorite porphyry

Ts — Shattered sedimentary rocks irregularly intruded by igneous material

SEDIMENTARY ROCKS

Emery sandstone member

Blue slate (mainly) member

Ferron sandstone member

Tununk shale member

Dakota sandstone

UNCONFORMITY

Morrison formation

UNCONFORMITY

Summerville formation

UNCONFORMITY

Entrada sandstone

Carmel formation

UNCONFORMITY

Navajo sandstone

Kayenta formation

Wingate sandstone

UNCONFORMITY

Chinle formation

Shinarump conglomerate

Contact, showing dip

Vertical contact

Surficial deposit contact

Axis of syncline

Strike and dip of beds

Strike of vertical beds

Approximate direction of dip

Mine

QUATERNARY

TERTIARY(?)

CRETACEOUS

JURASSIC

JURASSIC(?)

TRIASSIC

GEOLOGIC MAP OF MOUNT HILLERS, HENRY MOUNTAINS, UTAH

Scale 1:31,680

0 — 1 — 2 Miles

Contour interval 200 feet
Datum is sea level

EXHIBIT-I

R. A. PITZER
P. O. BOX 237
GRAND JUNCTION, COLO.

Exhibit - I