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

224 New Customhouse
Denver 2, Colorado

February 25, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, DMEA Docket 3578 (Uranium), Blue Canyon Uranium Corp; Scotty, Terry & Scot claims, Mesa County, Colorado

Enclosed are the original and three copies of the report pertaining to the above application.

We concur with the recommendation of the field examiners that the application for exploration assistance be denied.

W. M. TRAVER,

W. M. Traver

E. N. Harshman

E. N. Harshman
DMEA Field Team, Region III

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DMEA
Date Rec'd
FEB 21 1955

BUREAU OF MINES
Building 20, Room 137
Denver Federal Center
Denver 2, Colorado

Region III

TRANSMITTED
FEB 25 1955

February 18, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw, Project Supervisor

Subject: Examination Report, Docket No. DMEA 3578, Scotty, Terry, and Scot claims, (Uranium) Blue Canyon Uranium, Inc., Mesa County, Colorado.

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations" prepared by Glen Walker, mining engineer, and T. E. Mullens, geologist. Also, enclosed are the original and ten copies of an engineering report by Glen Walker.

The applicant requested exploration assistance for diamond drilling 16,950 feet from 91 surface locations at an estimated cost of $69,099.50. The examining engineer concluded that the favorable ore-bearing sandstone caps only a relatively small area of the property and the exploration target is very limited. It is recommended that the application be denied.

John F. Shaw

John F. Shaw

cc 10
DMEA 3578
Chron

JFS/om

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3578, Smith, Terry,

and Shot Claims

Mine Canyon Uranium, Inc.

Mesa County, Colorado

Uranium

Glen Walker, Mining Engineer
Bureau of Mines

T. K. Mallems, Geologist
Geological Survey

February 11, 1955

DMEA 3578

SCOTTY, TERRI, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By Glen Walker
Mining Engineer
Bureau of Mines

T. E. Mullens
Geologist
Geological Survey

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Glen Walker and T. E. Mallens

On January 19, 1955, the unpatented mining claims of the Blue Canyon Uranium, Inc., Mesa County, Colorado, were examined by a Region III DMEA Field Team for uranium possibilities. Four representatives of the applicant accompanied the examining team.

Government assisted exploration was requested at an estimated cost of $69,099.50; Government participation 75 percent, or $52,824.63, for 91 diamond-drill holes on 16 claims.

County records indicate the concern has a legal claim to the property involved.

The average uranium deposit in the district contains about 1,000 tons and is found in the upper-most "rim" of the Morrison Salt Wash formation. Because of topographic conditions, this geologic horizon extends over only a very small portion of the property; but where it does exist it is on or near the surface so that exploration by drilling offers little difficulty.

It is concluded that the probability of making a significant uranium discovery in the limited favorable area is rather remote and does not warrant Government participation in the exploration.

A denial of the application is recommended.

DMRA 3978

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

Engineering Report

By Glen Walker
Mining Engineer
Bureau of Mines

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

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ILLUSTRATIONS

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DMEA 3573

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

ENGINEERING REPORT

By Glen Walker

INTRODUCTION

The following unpatented mining claims owned by Blue Canyon Uranium, Inc., Mesa County, Colorado, were examined by a DMEA Field Team on January 19, 1955:

> Scotty No. 1, Scotty No. 2A, Scotty No. 3, Scotty No. 4, Scotty No. 5, Terry No. 1, Terry No. 2, Terry No. 3, Terry No. 4, Terry No. 5, Terry No. 6, Terry No. 7, Terry No. 8, Scot No. 6, Scot No. 7 and Scot No. 8.

The owner and applicant requested Government assistance in exploring for uranium deposits by diamond drilling 16,950 feet from 91 surface locations at an estimated cost of $69,099.50; Government participation 75 percent, or $52,824.63.

ACKNOWLEDGEMENTS

F. H. Reese, a consulting geologist, and three of the company's directors guided the examining field team.

LOCATION, TOPOGRAPHY AND PHYSICAL FEATURES

The property is located in sections 19, 20, 29, and 30, T. 50 N., R. 17 W., New Mexico principal meridian, Mesa County, Colorado (Fig. 1). Grand Junction, Colorado, the nearest rail and supply point, is approximately 55 miles northwest of the claims. It can be reached by travel over 10 miles of one-way mountain trails and 45 miles of state maintained roads No. 141 and U. S. 50.

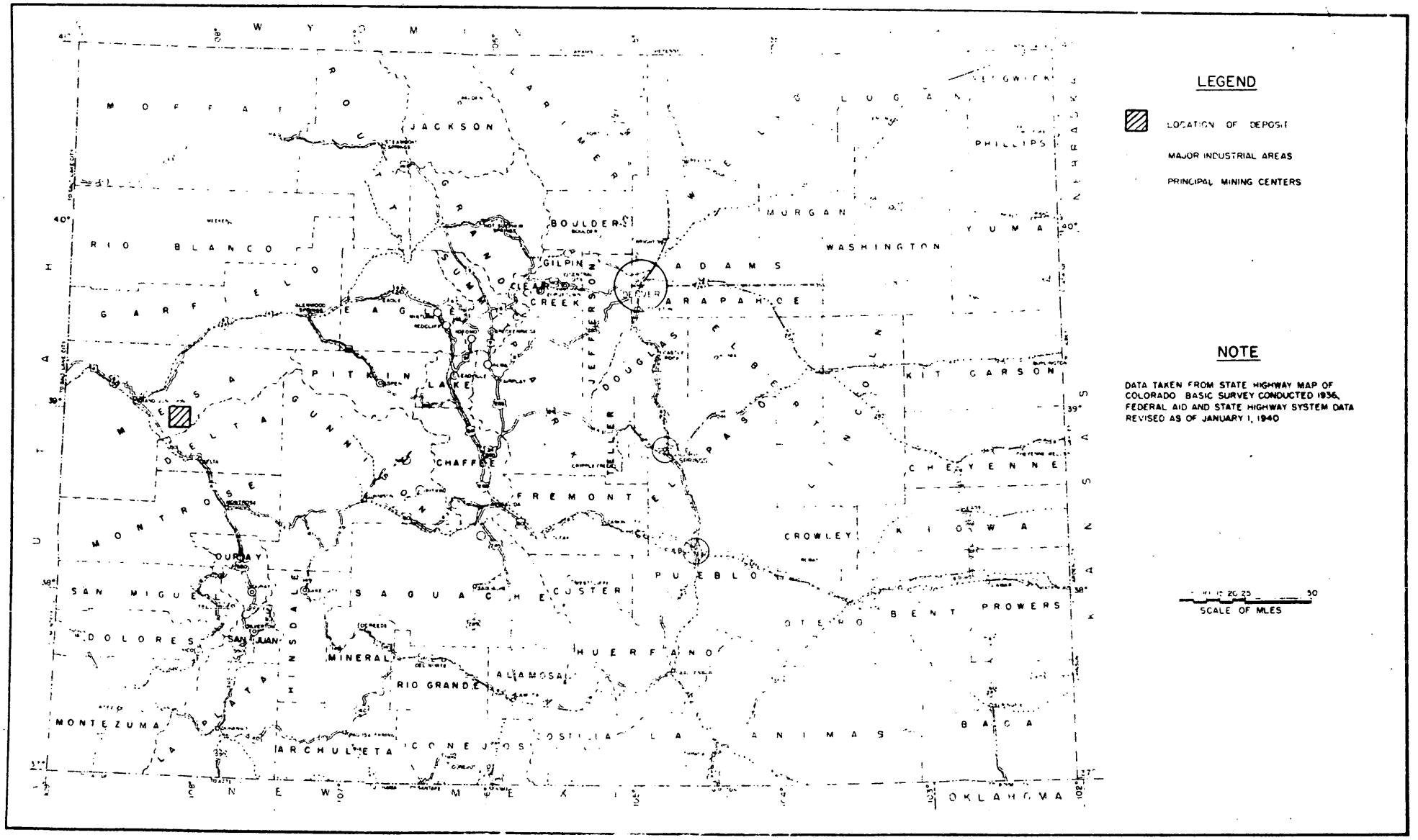


FIGURE 1 - LOCATION MAP, SCOTTY, TERRY, AND SCOT CLAIMS, BLUE CANYON URANIUM, INC., MESA COUNTY, COLO.
(DMEA 3578)

The area is part of a ruggedly dissected plateau in which mesas with very steep sides have been formed by the headward erosion of intermittent streams through sedimentary rocks of unequal competence. The property is on and near the top of a mesa which borders the west side of Nine Canyon; here the difference in relief is about 100 feet. Construction of access drill roads would not be greatly hampered by topography.

A thick growth of small piñon pine and cedar covers the claims. This timber would find limited use in an underground mining operation. However, there are several sawmills on the higher mesas, 10-20 miles from the property where dimension timber can be obtained.

Water for drilling and for a small mining operation may be taken from Nine Creek by hauling approximately 3 miles or by pumping against a head of about 600 feet for 1,000 feet.

Power for any activity must be supplied by internal combustion engines as electricity is unavailable.

Good mine labor in the immediate vicinity is currently rather difficult to obtain because of the comparative inaccessibility and because of weather conditions.

Climate in the area is marked by occasional storms both in winter and summer which supply the 10 to 14 inches of annual precipitation. Outside work can be pursued the year round except for a few days at a time in winter when blizzards close the roads.

HISTORY, PRODUCTION AND OWNERSHIP

According to county records these mining claims were located in June 1954, and the locations were amended in August 1954. The present owners obtained title through a purchase contract with the original locators.

No ore production has been made from the property although on Scotty No. 1 claim two short adits have been driven from the outcrop along 3 to 4 inches of mineralized sandstone. This work disclosed 5 to 10 tons of hand sorted ore of undetermined grade which is stockpiled at the mine camp.

DESCRIPTION OF THE DEPOSITS

The only indication of uranium mineralization observed was on the Scotty No. 1 claim where the two above mentioned adits had been driven. Here the 3 to 4-inch streak of uranium-vanadium minerals were contained in the upper "rim" of the Salt Wash member of the Jurassic Morrison formation. Only a very narrow band, a few inches thick, of green clay was associated with the sandstone layer that contained the ore minerals. The ore-bearing streak as shown in the workings extended only 3 to 5 feet in from the outcrop.

MINEABLE RESERVES

Although a report of examination of this property included with the application states there are an estimated 300 tons of uranium ore on the Scotty No. 1 claim, the evidence, as noted above, could hardly be extended to include that quantity. The present evidence indicates no mineable reserves. No samples were taken as the exposures were of such discontinuous nature as to make calculations ineffective.

PRESENT STATUS

The two adits previously mentioned are the only exploratory openings observed on the property. The adit on the south side of the knoll of Salt Wash on the Seaty No. 1 claim extends 25 feet on a course of N. 30 W. It follows a black streak of uranium-vanadium minerals for about 5 feet from the portal. The adit on the west side is about 15 feet long and bears about S. 70 E. Here the favorable indication extends only about 3 feet in from the portal and ranges up to 3 inches thick. The two portals are about 150 feet apart.

There is no equipment presently on the property and the only building is a small trailer house to which a lean-to-shack has been attached.

PROJECT PROPOSALS WITH COSTS

The applicant proposed the following:

Independent contracts:

80 holes 150 feet deep		
9 core holes at 150 feet = 1,350 feet at $2.85/ft.		$ 3,847.50
71 non-core holes at 150 feet	= 10,660 feet at $2.45/ft.	26,092.50
11 holes 450 feet deep		
2 core holes at 450 feet =	900 feet at $4.95/ft.	4,455.00
9 non-core holes at 450 feet	= 4,050 feet at $3.85/ft.	15,592.50
Totals	16,950 feet	$49,987.50
Estimated steady time - 1 hr. per hole at $12.00/hr.		1,092.00
Estimated reaming and casing - 2,000 feet at $3.00/ft.		7,000.00
Access road building, 364 bulldozer hours at $12.50/hr.		4,550.00
Surveying of hole sites, 91 at $20.00 each		1,820.00
Total contracts		$64,449.50
Supervision, probing, geological consul, evaluation of data, logging of core and cuttings, analysis estimated time 62 days at $75.00/day		4,650.00
Grand total for project		$69,099.50

The holes were proposed on a 400-feet grid with no hole drilled closer than 200 feet from the outside boundaries of the claim group.

CONCLUSIONS

The favorable ore-bearing sandstone caps only a relatively small area of the property and the ore deposits of the general area are comparatively small hence the target of exploration is very limited. It appears that a few 75-foot wagon-drill holes would indicate the feasibility of holding the claims; this work would cost but very little and is thought to be within the capacity of the applicant.

RECOMMENDATIONS

It is recommended that the request for Government assisted exploration of this property be denied.

/ew

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FEB 11 1955

Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

February 10, 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3578 (uranium), Blue Canyon Uranium, Inc., Scotty, Terry, and Scot claims, Mesa County, Colorado

Enclosed are 10 copies of a geologic report by T. E. Mullens, U. S. Geological Survey, covering the above subject property.

Since ore-bearing horizon in the Salt Wash has been eroded from most of the claims and since the ore-bearing horizon, where present, is not lithologically favorable for significant bodies of uranium ore, Mullens concludes that the application for exploration assistance should be denied.

I concur with Mullens' recommendation.

Your attention is called to the new address for correspondence on this docket given in the covering letter by Williams.

The brochure is returned herewith.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (11)

ENHarshman:arh

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

February 2, 1955

Memorandum

To: E. N. Harshman

From: W. P. Williams

Subject: DMEA Docket 3578 (Uranium), Blue Canyon Uranium, Inc., Scotty, Terry, and Scot claims, Mesa County, Colorado

Enclosed are 11 copies of a geologic report and attached maps by T. E. Mullens, covering the above-referenced property; also the brochure.

After field examination of the property, Mullens concludes that DMEA assistance for exploring the property be denied for these reasons: 1) The ore-bearing zone has been largely removed from the claims by erosion, and 2) where present, the ore-bearing zone is only semifavorable for the occurrence of uranium ore deposits.

I concur with Mullens' recommendations.

The Atomic Energy Commission was asked for its advice and assistance in evaluating the property.

According to a letter dated January 6, all correspondence to Blue Canyon Uranium, Inc., should be sent to Mr. Ira L. Abelow, 5420 E. 6th Ave., Denver, Colorado.

T. E. Mullens
For W. P. Williams
Geologist

TEM/mlr
Enclosures

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3578, Blue Canyon Uranium, Inc., Scotty, Terry, and Scot claims, Mesa County, Colorado

Uranium

Geologic Report

by

T. E. Mullens
U. S. Geological Survey

February 1, 1955

INTRODUCTION AND SUMMARY

Blue Canyon Uranium, Inc., P. O. Box 476, Grand Junction, Colorado, has applied to the Defense Mineral Exploration Administration (DMEA Docket No. 3578) for a loan to explore the Morrison formation on the Scot, Scotty, and Terry groups of claims in secs. 19, 20, 29, and 30, T. 50 N., R. 17 W., Gateway mining district, Mesa County, Colorado, (fig. 1). The property was examined January 19, 1955, by Mr. Glen Walker, U. S. Bureau of Mines, and T. E. Mullens, U. S. Geological Survey, accompanied by R. S. Bohrer, James D. Nichols, and Edwin K. Gage, officers of Blue Canyon Uranium Corporation, and Mr. F. N. Bosco, geological consultant for Blue Canyon Uranium Corporation.

The applicant proposes a drilling program of 80 holes about 150 feet deep and 11 holes 450 feet deep, all on 400-foot spacing, to test the property. The complete program is estimated to cost $66,099.50.

It is here recommended that Government assistance in exploring these claims be denied as the ore-bearing zone has been largely removed by erosion, and, where present, the ore-bearing zone is thought to be only semifavorable for the occurrence of uranium ore deposits.

GEOLOGY

Rocks which comprise the Entrada and Summerville formations and the Salt Wash member of the Morrison formation crop out on the Blue Canyon Uranium Corporation claims. The Entrada and Summerville formations were not examined during the field examination. The

Salt Wash member of the Morrison formation is about 320 feet thick and consists of interstratified cross-laminated sandstone and mudstone. The sandstone is fine- to medium-grained, generally light colored and contains abundant red and sparse green mudstone seams. The sandstone occurs in gently lensing beds as much as 50 feet thick, and zones containing mainly sandstone occur near the base, center, and top of the Salt Wash member. The interstratified mudstone is mainly reddish brown, but contains sparse lenses and thin beds that are greenish gray. The strata strike about N. 45° W. and dip about 3° SW on the claims.

The top sandstone zone of the Salt Wash member is the main ore-bearing zone in the Gateway mining district where the claims are located. Uranium ore deposits are also known in the lower sandstone zones, but these deposits are generally too small to find economically by drilling.

ORE DEPOSITS

On the Blue Canyon Uranium Corporation group of claims, the ore-bearing zone is present only on parts of these claims: Terry nos. 1, 2, 3, 4, and 6; and Scotty nos. 1 and 5 (fig. 2). The ore-bearing zone on Scotty no. 2 1? contains three showings of uranium minerals. All showings have been prospected by short adits and the applicants have stockpiled about 10 tons of ore averaging 0.25 percent U_3O_8 (estimated) from the best showing. The examining team believes that no indicated or inferred ore is present in any of the three showings. Furthermore, on the basis of the extremely spotty distribution of green mudstone

under the ore-bearing sandstone, the outcrop on Scotty no. 1 is considered only semi-favorable for the occurrence of uranium ore deposits.

The ore-bearing zone exposed on Scotty no. 5 and Terry nos. 1, 2, 3, 4, and 6 claims were not examined in detail because of snow-covered slopes. However, where examined, the ore-bearing zone was not underlain by green mudstone. The absence of green mudstone is an indication that the outcrops examined are only semifavorable for the occurrence of uranium ore.

The U. S. Geological Survey has drilled several holes a short distance west of the Blue Canyon Uranium Corporation claims. Logs of these holes were examined, and these logs revealed that the ground west of the claims is best classified as unfavorable to semifavorable for the occurrence of uranium deposits.

CONCLUSIONS AND RECOMMENDATIONS

A DMEA field examination was made of the Blue Canyon Uranium Corporation Scott, Scotty, and Terry groups of claims in the Gateway mining district, Mesa County, Colorado.

The ore-bearing zone of the Salt Wash member of the Morrison formation has been largely removed from most of the claims; and where present the ore-bearing zone is classed as only semifavorable for the occurrence of uranium ore deposits.

It is recommended that DMEA assistance to explore the Blue Canyon Uranium Corporation claims be denied.

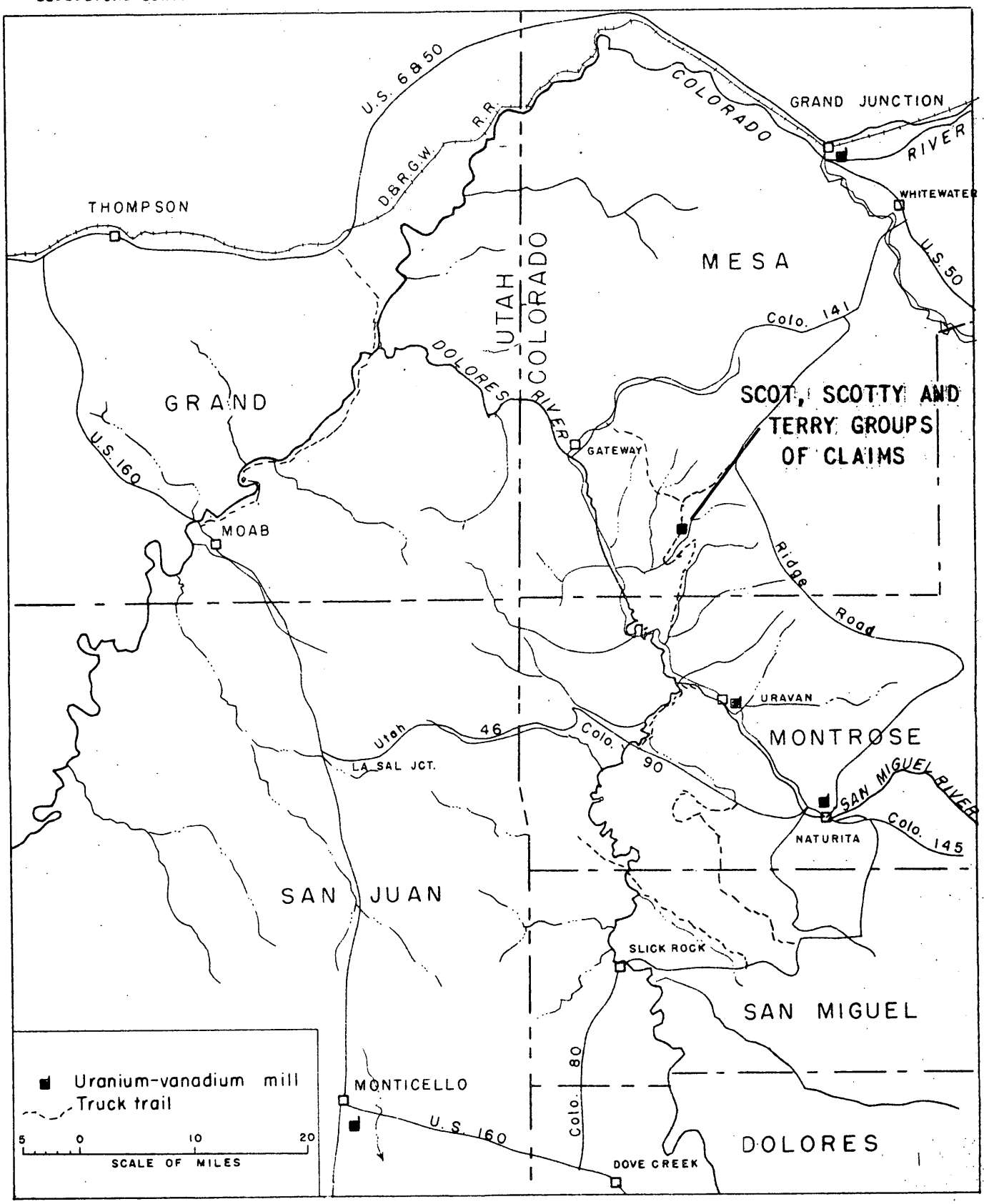
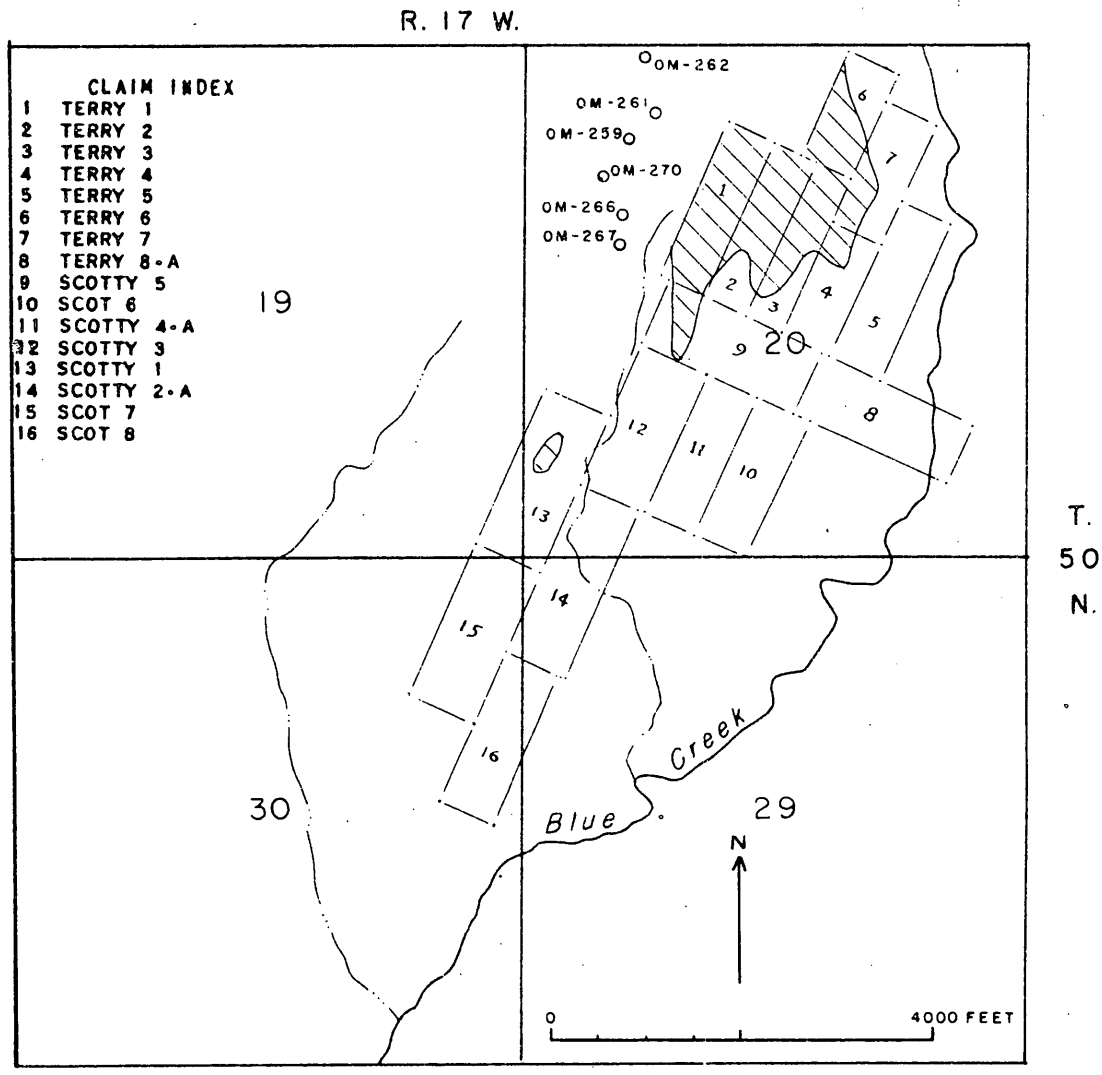


Figure 1. INDEX MAP OF PART OF THE COLORADO PLATEAU SHOWING LOCATION OF THE SCOT, SCOTTY AND TERRY GROUPS OF CLAIMS, BLUE CANYON URANIUM CORPORATION, MESA COUNTY, COLORADO



EXPLANATION

OM-267 U.S. GEOLOGICAL SURVEY DIAMOND-DRILL HOLE

GROUND UNDERLAIN BY THE ORE-BEARING ZONE OF THE SALT WASH MEMBER OF THE MORRISON FORMATION

Figure 2. MAP OF THE SCOT, SCOTTY, AND TERRY GROUPS OF CLAIMS, BLUE CANYON URANIUM CORPORATION, MESA COUNTY, COLORADO

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

224 New Customhouse
Denver 2, Colorado

February 25, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, DMEA Docket 5578 (Uranium), Blue Canyon Uranium Corp; Scotty, Terry & Scot claims, Mesa County, Colorado

Enclosed are the original and three copies of the report pertaining to the above application.

We concur with the recommendation of the field examiners that the application for exploration assistance be denied.

W. M. TRAVER,

W. M. Traver

E. N. Harshman

E. N. Harshman
DMEA Field Team, Region III

Enclosures

DMEA REPORTS
MR. 3/7
..... Agree!
CHIEF, MINERALS DIVISION
CALVIN PIERSON
MT. WEATHER
FOR YOUR INFORMATION AND REVIEW
CALVIN PIERSON

Reviewed by
DMEA OPERATING COMMITTEE

(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DMEA
Denver

BUREAU OF MINES
Building 20, Room 137
Denver Federal Center
Denver 2, Colorado

Region III

TRANSMITTED
FEB 25 1955

Denver 2, Colorado
February 18, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw, Project Supervisor

Subject: Examination Report, Docket No. DMEA 3578, Scotty, Terry, and Scot claims, (Uranium) Blue Canyon Uranium, Inc., Mesa County, Colorado.

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations" prepared by Glen Walker, mining engineer, and T. E. Mullens, geologist. Also, enclosed are the original and ten copies of an engineering report by Glen Walker.

The applicant requested exploration assistance for diamond drilling 16,950 feet from 91 surface locations at an estimated cost of $69,099.50. The examining engineer concluded that the favorable ore-bearing sandstone caps only a relatively small area of the property and the exploration target is very limited. It is recommended that the application be denied.

John F. Shaw

John F. Shaw

cc 10
DMEA 3578
Chron

JFS/cm

Reviewed by
DMEA OPERATING COMMITTEE

(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 157E, Smith, Terry,

and Stat Claims

Nina Cooper Uranium, Inc.

Mesa County, Colorado

Uranium

Glen Walker, Mining Engineer
Bureau of Mines

T. K. Mallons, Geologist
Geological Survey

February 11, 1955

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By Glen Walker
Mining Engineer
Bureau of Mines

T. E. Mullens
Geologist
Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Glen Walker and T. E. Mullens

On January 19, 1955, the unpatented mining claims of the Blue Canyon Uranium, Inc., Mesa County, Colorado, were examined by a Region III DMEA Field Team for uranium possibilities. Four representatives of the applicant accompanied the examining team.

Government assisted exploration was requested at an estimated cost of $69,099.50; Government participation 75 percent, or $52,824.63, for 21 diamond-drill holes on 16 claims.

County records indicate the concern has a legal claim to the property involved.

The average uranium deposit in the district contains about 1,000 tons and is found in the upper-most "rim" of the Morrison Salt Wash formation. Because of topographic conditions, this geologic horizon extends over only a very small portion of the property; but where it does exist it is on or near the surface so that exploration by drilling offers little difficulty.

It is concluded that the probability of making a significant uranium discovery in the limited favorable area is rather remote and does not warrant Government participation in the exploration.

A denial of the application is recommended.

Reviewed by
DMEA OPERATING COMMITTEE

(date)

DMEA 3578

SCOTTY, TERRI, AND BOOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

Engineering Report

By Glen Walker
Mining Engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

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ILLUSTRATIONS

Figure — Follows Page

1. Location Map, Scotty, Terry, and Scot claims, Blue Canyon Uranium, Inc., Mesa County, Colorado..... 1

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

ENGINEERING REPORT

By Glen Walker

INTRODUCTION

The following unpatented mining claims owned by Blue Canyon Uranium, Inc., Mesa County, Colorado, were examined by a DMEA Field Team on January 19, 1955:

> Scotty No. 1, Scotty No. 2A, Scotty No. 3, Scotty No. 4, Scotty No. 5, Terry No. 1, Terry No. 2, Terry No. 3, Terry No. 4, Terry No. 5, Terry No. 6, Terry No. 7, Terry No. 8, Scot No. 6, Scot No. 7 and Scot No. 8.

The owner and applicant requested Government assistance in exploring for uranium deposits by diamond drilling 16,950 feet from 91 surface locations at an estimated cost of $69,099.50; Government participation 75 percent, or $52,824.63.

ACKNOWLEDGEMENTS

F. N. Rosso, a consulting geologist, and three of the company's directors guided the examining field team.

LOCATION, TOPOGRAPHY AND PHYSICAL FEATURES

The property is located in sections 19, 20, 29, and 30, T. 50 N., R. 17 W., New Mexico principal meridian, Mesa County, Colorado (fig. 1). Grand Junction, Colorado, the nearest rail and supply point, is approximately 55 miles northwest of the claims. It can be reached by travel over 10 miles of one-way mountain trails and 45 miles of state maintained roads No. 141 and U. S. 50.

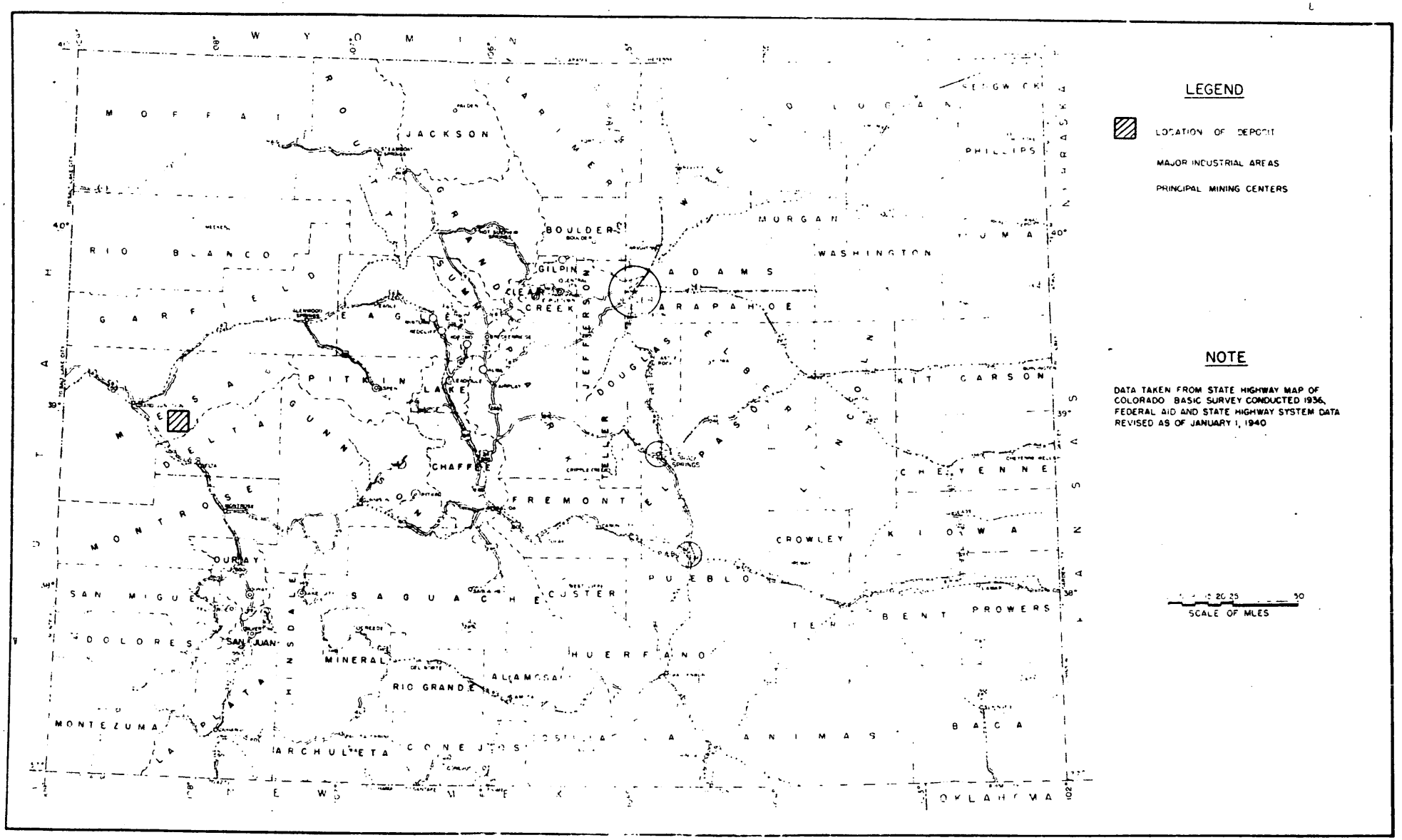


FIGURE 1 - LOCATION MAP, SCOTTY, TERRY, AND SCOT CLAIMS, BLUE CANYON URANIUM, INC., MESA COUNTY, COLO.
(DMEA 3578)

The area is part of a ruggedly dissected plateau in which mesas with very steep sides have been formed by the headward erosion of intermittent streams through sedimentary rocks of unequal competence. The property is on and near the top of a mesa which borders the west side of Blue Canyon; here the difference in relief is about 100 feet. Construction of access drill roads would not be greatly hampered by topography.

A thick growth of small pinon pine and cedar covers the claims. This timber would find limited use in an underground mining operation. However, there are several sawmills on the higher mesas, 10-20 miles from the property where dimension timber can be obtained.

Water for drilling and for a small mining operation may be taken from Blue Creek by hauling approximately 3 miles or by pumping against a head of about 600 feet for 1,000 feet.

Power for any activity must be supplied by internal combustion engines as electricity is unavailable.

Good mine labor in the immediate vicinity is currently rather difficult to obtain because of the comparative inaccessibility and because of weather conditions.

Climate in the area is marked by occasional storms both in winter and summer which supply the 10 to 14 inches of annual precipitation. Outside work can be pursued the year round except for a few days at a time in winter when blizzards close the roads.

HISTORY, PRODUCTION AND OWNERSHIP

According to county records these mining claims were located in June 1954, and the locations were assessed in August 1954. The present owners obtained title through a purchase contract with the original locators.

No ore production has been made from the property although on Scotty No. 1 claim two short adits have been driven from the outcrop along 3 to 4 inches of mineralized sandstone. This work disclosed 5 to 10 tons of hand sorted ore of undetermined grade which is stockpiled at the mine camp.

DESCRIPTION OF THE DEPOSITS

The only indication of uranium mineralization observed was on the Scotty No. 1 claim where the two above mentioned adits had been driven. Here the 3 to 4-inch streak of uranium-vanadium minerals were contained in the upper "rim" of the Salt Wash member of the Jurassic Morrison formation. Only a very narrow band, a few inches thick, of green clay was associated with the sandstone layer that contained the ore minerals. The ore-bearing streak as shown in the workings extended only 3 to 5 feet in from the outcrop.

MINEABLE RESERVES

Although a report of examination of this property included with the application states there are an estimated 300 tons of uranium ore on the Scotty No. 1 claim, the evidence, as noted above, could hardly be extended to include that quantity. The present evidence indicates no mineable reserves. No samples were taken as the exposures were of such discontinuous nature as to make calculations ineffective.

PRESENT STATUS

The two adits previously mentioned are the only exploratory openings observed on the property. The adit on the south side of the knoll of Salt Wash on the Scotty No. 1 claim extends 25 feet on a course of N. 30 W. It follows a black streak of uranium-vanadium minerals for about 5 feet from the portal. The adit on the west side is about 15 feet long and bears about S. 70 E. Here the favorable indication extends only about 3 feet in from the portal and ranges up to 3 inches thick. The two portals are about 150 feet apart.

There is no equipment presently on the property and the only building is a small trailer house to which a lean-to-shack has been attached.

PROJECT PROPOSALS WITH COSTS

The applicant proposed the following:

Independent contracts:

80 holes 150 feet deep		
9 core holes at 150 feet = 1,350 feet at $2.85/ft.		$ 3,847.50
71 non-core holes at 150 feet	= 10,660 feet at $2.45/ft.	26,092.50
11 holes 450 feet deep		
2 core holes at 450 feet = 900 feet at $4.95/ft.		4,455.00
9 non-core holes at 450 feet	= 4,050 feet at $3.85/ft.	15,592.50
Totals	16,950 feet	$49,987.50
Estimated standby time - 1 hr. per hole at $12.00/hr.		1,092.00
Estimated running and casing - 2,000 feet at $3.00/ft.		7,000.00
Access road building, 364 bulldozer hours at $12.50/hr.		4,550.00
Surveying of hole sites, 91 at $20.00 each		1,820.00
Total contracts		$64,449.50
Supervision, probing, geological consul, evaluation of data, logging of core and cuttings, analysis estimated time 62 days at $75.00/day		4,650.00
Grand total for project		$69,099.50

The holes were proposed on a 400-foot grid with no hole drilled closer than 200 feet from the outside boundaries of the claim group.

CONCLUSIONS

The favorable ore-bearing sandstone caps only a relatively small area of the property and the ore deposits of the general area are comparatively small hence the target of exploration is very limited. It appears that a few 75-foot wagon-drill holes would indicate the feasibility of holding the claims; this work would cost but very little and is thought to be within the capacity of the applicant.

RECOMMENDATIONS

It is recommended that the request for Government assisted exploration of this property be denied.

/em

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FEB 11 1955

Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

February 10, 1955

TRANSMITTED

FEB 25 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3578 (uranium), Blue Canyon Uranium, Inc., Scotty, Terry, and Scot claims, Mesa County, Colorado

Enclosed are 10 copies of a geologic report by T. E. Mullens, U. S. Geological Survey, covering the above subject property.

Since ore-bearing horizon in the Salt Wash has been eroded from most of the claims and since the ore-bearing horizon, where present, is not lithologically favorable for significant bodies of uranium ore, Mullens concludes that the application for exploration assistance should be denied.

I concur with Mullens' recommendation.

Your attention is called to the new address for correspondence on this docket given in the covering letter by Williams.

The brochure is returned herewith.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (11)

ENHarshman:arh

Reviewed by
DMEA OPERATING COMMITTEE

(date)

TRANSMITTED

FEB 25 1955

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

February 2, 1955

Memorandum

To: E. N. Harshman

From: W. P. Williams

Subject: DMEA Docket 3578 (Uranium), Blue Canyon Uranium, Inc., Scotty, Terry, and Scot claims, Mesa County, Colorado

Enclosed are 11 copies of a geologic report and attached maps by T. E. Mullens, covering the above-referenced property; also the brochure.

After field examination of the property, Mullens concludes that DMEA assistance for exploring the property be denied for these reasons: 1) The ore-bearing zone has been largely removed from the claims by erosion, and 2) where present, the ore-bearing zone is only semifavorable for the occurrence of uranium ore deposits.

I concur with Mullens' recommendations.

The Atomic Energy Commission was asked for its advice and assistance in evaluating the property.

According to a letter dated January 6, all correspondence to Blue Canyon Uranium, Inc., should be sent to Mr. Ira L. Abelow, 5420 E. 6th Ave., Denver, Colorado.

T. E. Mullens
for W. P. Williams
Geologist

TEM/mlr
Enclosures

Reviewed by
DMEA OPERATING COMMITTEE

(date)

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3578, Blue Canyon Uranium, Inc., Scotty, Terry, and Scot claims, Mesa County, Colorado

Uranium

Geologic Report

by

T. E. Mullens
U. S. Geological Survey

February 1, 1955

Reviewed by
DMEA OPERATING COMMITTEE

(date)

INTRODUCTION AND SUMMARY

Blue Canyon Uranium, Inc., P. O. Box 476, Grand Junction, Colorado, has applied to the Defense Mineral Exploration Administration (DMEA Docket No. 3578) for a loan to explore the Morrison formation on the Scot, Scotty, and Terry groups of claims in secs. 19, 20, 29, and 30, T. 50 N., R. 17 W., Gateway mining district, Mesa County, Colorado, (fig. 1). The property was examined January 19, 1955, by Mr. Glen Walker, U. S. Bureau of Mines, and T. E. Mullens, U. S. Geological Survey, accompanied by R. S. Bohrer, James D. Nichols, and Edwin K. Gage, officers of Blue Canyon Uranium Corporation, and Mr. F. N. Bosco, geological consultant for Blue Canyon Uranium Corporation.

The applicant proposes a drilling program of 80 holes about 150 feet deep and 11 holes 450 feet deep, all on 400-foot spacing, to test the property. The complete program is estimated to cost $66,099.50.

It is here recommended that Government assistance in exploring these claims be denied as the ore-bearing zone has been largely removed by erosion, and, where present, the ore-bearing zone is thought to be only semifavorable for the occurrence of uranium ore deposits.

GEOLOGY

Rocks which comprise the Entrada and Summerville formations and the Salt Wash member of the Morrison formation crop out on the Blue Canyon Uranium Corporation claims. The Entrada and Summerville formations were not examined during the field examination. The

Salt Wash member of the Morrison formation is about 320 feet thick and consists of interstratified cross-laminated sandstone and mudstone. The sandstone is fine- to medium-grained, generally light colored and contains abundant red and sparse green mudstone seams. The sandstone occurs in gently lensing beds as much as 50 feet thick, and zones containing mainly sandstone occur near the base, center, and top of the Salt Wash member. The interstratified mudstone is mainly reddish brown, but contains sparse lenses and thin beds that are greenish gray. The strata strike about N. 45° W. and dip about 3° SW on the claims.

The top sandstone zone of the Salt Wash member is the main ore-bearing zone in the Gateway mining district where the claims are located. Uranium ore deposits are also known in the lower sandstone zones, but these deposits are generally too small to find economically by drilling.

ORE DEPOSITS

On the Blue Canyon Uranium Corporation group of claims, the ore-bearing zone is present only on parts of these claims: Terry nos. 1, 2, 3, 4, and 6; and Scotty nos. 1 and 5 (fig. 2). The ore-bearing zone on Scotty no. 2 contains three showings of uranium minerals. All showings have been prospected by short adits and the applicants have stockpiled about 10 tons of ore averaging 0.25 percent U_3O_8 (estimated) from the best showing. The examining team believes that no indicated or inferred ore is present in any of the three showings. Furthermore, on the basis of the extremely spotty distribution of green mudstone

under the ore-bearing sandstone, the outcrop on Scotty no. 1 is considered only semi-favorable for the occurrence of uranium ore deposits.

The ore-bearing zone exposed on Scotty no. 5 and Terry nos. 1, 2, 3, 4, and 6 claims were not examined in detail because of snow-covered slopes. However, where examined, the ore-bearing zone was not underlain by green mudstone. The absence of green mudstone is an indication that the outcrops examined are only semifavorable for the occurrence of uranium ore.

The U. S. Geological Survey has drilled several holes a short distance west of the Blue Canyon Uranium Corporation claims. Logs of these holes were examined, and these logs revealed that the ground west of the claims is best classified as unfavorable to semifavorable for the occurrence of uranium deposits.

CONCLUSIONS AND RECOMMENDATIONS

A DMEA field examination was made of the Blue Canyon Uranium Corporation Scott, Scotty, and Terry groups of claims in the Gateway mining district, Mesa County, Colorado.

The ore-bearing zone of the Salt Wash member of the Morrison formation has been largely removed from most of the claims; and where present the ore-bearing zone is classed as only semifavorable for the occurrence of uranium ore deposits.

It is recommended that DMEA assistance to explore the Blue Canyon Uranium Corporation claims be denied.

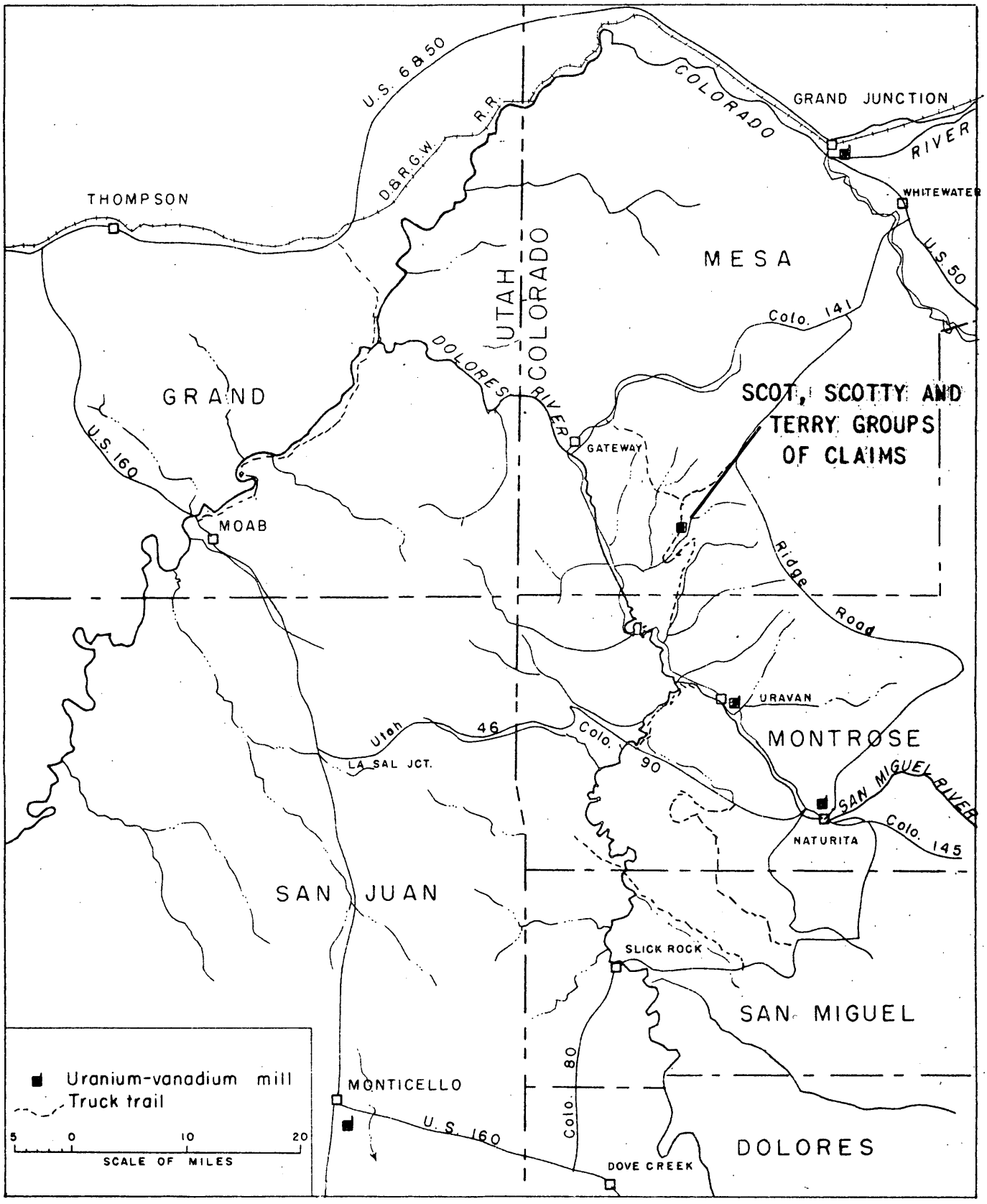
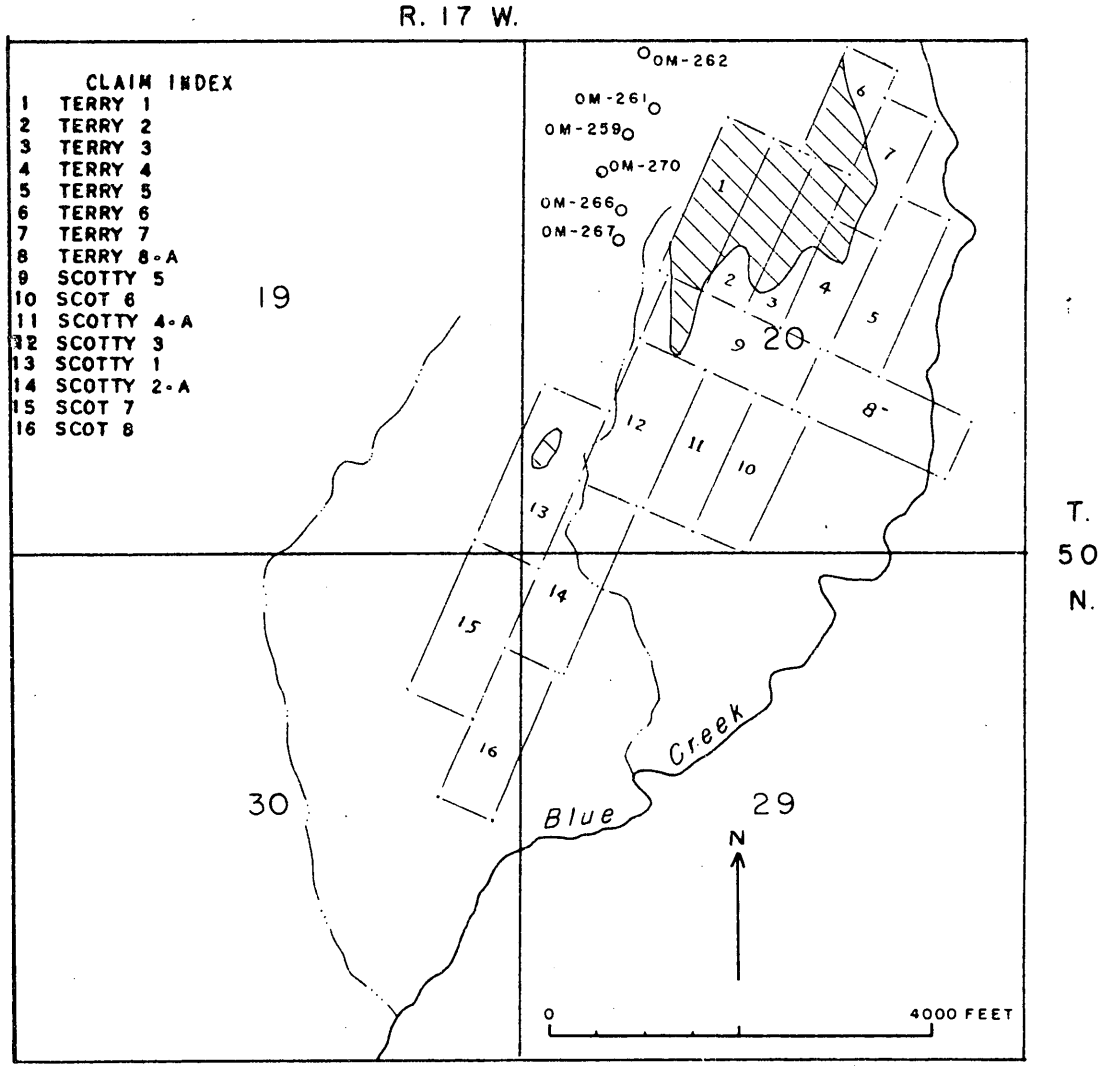


Figure 1. INDEX MAP OF PART OF THE COLORADO PLATEAU SHOWING LOCATION OF THE SCOT, SCOTTY AND TERRY GROUPS OF CLAIMS, BLUE CANYON URANIUM CORPORATION, MESA COUNTY, COLORADO



EXPLANATION

OM-267 U.S. GEOLOGICAL SURVEY DIAMOND-DRILL HOLE

GROUND UNDERLAIN BY THE ORE-BEARING ZONE OF THE SALT WASH MEMBER OF THE MORRISON FORMATION

Figure 2. MAP OF THE SCOT, SCOTTY, AND TERRY GROUPS OF CLAIMS, BLUE CANYON URANIUM CORPORATION, MESA COUNTY, COLORADO

Ck refer to field team for examination

224 New Customhouse
Denver 2, Colorado

November 19, 1954

eftwa
3578

Blue Canyon Uranium, Incorporated
725 National Bank Building
Denver, Colorado

Attention: Mr. Gould

Dear Sir:

Reference is made to your application for DMEA aid on the Scotty and Terry groups in Mesa County, Colorado.

A copy of the Agreement and Option, dated June 17, 1954, between Earl L. Hamrick, Francis L. Caldwell, Robert S. Bohrer, and Lawrence Migliaccio, accompanied your application.

Please forward to this office a signed copy, or a photostat of a signed copy, of the Assignment of the Agreement and Option to Blue Canyon Uranium, Incorporated.

When we receive this Assignment we will continue to process your application.

Very truly yours,

John F. Shaw
for W. H. King
Executive Officer, DMEA
Field Team, Region IV

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

NOV 2 1954

Not to be filled in by applicant

Docket No. 3578
Metal or Mineral Uranium
Date Received
Estimated Cost $69,100
Participation (Government %)

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

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: Blue Canyon Uranium Inc., P.O.Box 476, Grand Junction, Colorado
R.S.Bohrer, Pres. 218 S. 17th, Pocatello, Idaho
James D. Nickols, Vice-Pres, Arbon, Idaho
Edwin K. Gage, Sec-Treas, 785 Ebony St., Pocatello, Idaho

(*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 Mesa County, Colorado, Township 50 North, Range 17 West, Sections 19,20,29,30 Scotty #1, Scotty #2a, Scotty #3, Scotty #4a Scotty #5, Terry #1, Terry #2, Terry #3, Terry #4, Terry #5, Terry #6, Terry #7, Terry #8a, Scot #6, Scot #7, Scot #8

(*b*) State any mine name by which the property is known. Scotty #1-6, Terry #1-8a, Scot 6-7-8

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Owner of three (Locator), purchaser under contract of thirteen (13) claims

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

(*e*) If you own the land, describe any liens or encumbrances on it none

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

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

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

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

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

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

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

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

(*c*) The work will start within 45 days and be completed within 6 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated _____, 195__

Blue Canyon Uranium, Inc.
(Applicant)

By Robert S. Bohrer

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.

Blue Canyon Uranium, Inc. Grand Junction, Col.

Supplement to Application for aid in an Exploration Project, Pursuant to DMEA Order 1, Under the Defense Production Act of 1950, as Amended

DEPARTMENT OF THE INTERIOR
Bureau of Mines
Leased Minerals Administration
RECEIVED
NOV 22 1954

3. Applicant's Property Rights

(a) Legal Description- The claims are all located in Mesa County, Colorado, Township 50 North, Range 17 West, Sections 19,20,29,30. They are known as the Scotty 1, Scotty 2a, Scotty 3, Scotty 4, Scotty 5, Terry 1, Terry 2, Terry 3, Terry 4, Terry 5, Terry 6, Terry 7, Terry 8a, Scot 6, Scot 7, Scot 8.

(b) Mine names -The mine names for the property are as follows;- SCOTTY 1-5, TERRY 1-8a, SCOT 6-7-8

(c) Interest in property- Owner under purchase agreement.

(d) Documents - Purchase Agreement submitted herewith Exhibit ____.

(e) Liens and encumberances- None other thanincluded in above.

(f) Unpatented Claims-Book and Page Numbers

Claim Name	Book	Page	Amended Location Notices Book	Page
Scotty 1	606	460	617	582
Scotty 2a	617	585		
Scotty 3	606	462	617	583
Scotty 4	617	586		
Scotty 5	606	464	617	584
Terry 1	607	52	617	571
Terry 2	607	53	617	572
Terry 3	607	54	617	573
Terry 4	607	55	617	575
Terry 5	607	56	617	575
Terry 6	607	57	617	576
Terry 7	607	58	617	577
Terry 8	617	578		
Scot 6	617	579		
Scot 7	617	580		
Scot 8	617	581		

Blue Canyon Uranium, Inc. Grand Junction, Col.

Supplement to Application for aid in an Exploration Project, Pursuant to DMEA Order 1, Under the Defense Production Act of 1950, as Amended

4. Physical Description

(a) The nature of the terrain is shown in Exhibit (1), "Calamity Mesa Quadrangle", published by the Geological Survey. Exploratory cuts have been made on each claim at points indicated on Exhibit (2). Bull-dozed roads to these cuts are also shown on Exhibit (2). Limited drift mining operations have been carried out on Scotty No. 1 Claim. Approximately ten (10) tons of commercial ore have been stock-piled out of two drift tunnels. All of these operations belong to Blue Canyon Uranium, Inc. All workings are easily accessible by indicated roads.

(b) No ore has been shipped and no estimate of reserves can be made until the claims are drilled. However evidence of uranium ore occurance has been obtained over a good portion of the claim area group. Reference to Exhibit (3)"Report on Scotty and Terry Claims, Outlaw Mesa, Colorado" by D.V.Watrous-E.M.R.Anderson, Geologist, dated July 7, 1954, under Ore Occurances. In addition to facts presented on Scotty No. 1 and Terry No. 4 and 5, the Scotty No. 1 drift mined a mineralized bed ranging from 12" to 18" in thickness and ran from 0.30% to 0.84% uranium oxide. Geiger Counter readings of sufficient magnitude to indicate commercial ore were obtained on Scotty No. 5, Scotty No. 7 and Terry No. 6 claims.

(c) The Morrison is exposed over a good portion of the claims and where not exposed may be covered by 30 to 50 feet calcareous sandstone. In the geological report by Watrous and Anderson (Exhibit (2)) the thickness of the Morrison formation down to the Slick Rock (Entrada) is estimated at 450 feet. In a geological report of the general area by Stokes and Fisher, Exhibit (4) "Vanadium Deposits in the Gateway Area", the thickness of the Morrison at nearby Calamity Mesa is 260 feet of Upper Morrison and 410 feet of Lower Morrison. Assuming the difference in total Morrison thickness of 670 feet at Calamity and 450 feet at Blue Canyon is due to greater erosion at Blue Canyon, 220 feet of Upper Morrison would have been eroded away leaving 40 feet of Upper Morrison and 410 feet of Lower Morrison. Stokes and Fisher, Exhibit (4), note that most mineralization occurs within 50 feet of the top of the Lower Morrison. Thus at Blue Canyon would occur from the surface to depth of 90 feet. The many surface occurances of uranium ore support this reasoning, cross section sketch (Exhibit (5)). Where calcareous sandstone overlies the Morrison, a hole 150 feet deep would be adequate to test both the Upper and Lower Morrison. For proper geologic control and test of Slick Rock occasional 450 foot holes would be required.

(d) A good all weather road extends north and south from the claims a distance of approximately 10 miles to Colorado State Highway 141. From this junction it is about 6 miles south to Gateway and about 45 miles to Grand Junction. The cost of road building for drilling sites and mining is slight. Ore buying stations are located at Uravan, Colorado, a distance of 40 miles, and at Grand Junction, Colorado, a distance of 55 miles from the property.

Supplement to Application for aid in an Exploration Project, Pursuant to DMEA Order 1, Under the Defense Production Act of 1950, as Amended

4. Physical Description -cont.-

(e) Manpower, supplies and equipment to support mining operations are available from Gateway, Uravan and Grand Junction. Water from Blue Creek is accessible for mining. This may be hauled over a distance of three miles on the present road, however catchment basins may be constructed to obtain water from occasional rains. Electric Power is not available and will have to be generated using mobile field generators.

5. The Exploration Project.

(a) We wish to explore for Uranium.

(b) As shown in Exhibit (2), the exploration project shall consist of (diamond) drilling eighty (80) 150-foot holes to test the most likely mineralization in the Morrison and eleven (11) 450-foot holes to test the Slick Rock deeper possibilities. In so far as practical all of the holes are located on a 400 foot grid interval oriented in such a manner as to reduce road building to a minimum. No drill-site is located closer than 200 feet from the outside perimeter of the claim group. The 150-foot hole locations are shown in Blue in Exhibit (2) and the 450-foot holes are shown in Red.

Nine (9) of the 150-foot holes will be core-drilled. These are indicated by Blue Squares (Exhibit 2). The seventy-one (71) non-core 150-foot holes are indicated by Blue Squares. Only two (2) 450-foot holes will be core-drilled. These two (2) holes are indicated by Red Squares.

Radiometric probing will be made of all holes and results calibrated against assays made of cores and an evaluation report provided.

(c) The work will start within 45 days and be completed within six (6) months from date of exploration project contract.

(d) Will engage Edwards Mining & Exploration Co., Inc, Denver Colorado to do all the drilling and the "Geophysical Core Drilling Company" to do all Supervision, Radiometric Probing, Geological Consulting and Evalutaion Report after drilling.

6. Estimate of Costs.

(a) Independent Contracts. All work will be let to Independent Contractors as follows;-

(1) Drilling	Footage	Price per ft.	Total
80 150-foot holes			
9 core drilled	1,350	$ 2.35	$ 3,347.50
71 non-core drilled	10,650	2.45	26,092.50
11 450-foot holes			
2 core-drilled	900	4.95	4,455.00
9 non-core drilled	4,050	3.85	15,592.50
Totals	16,950		$ 49,987.50
Estimated Stand-by time, 1 hour per hole		$12.00 per hr	1,092.00

Blue Canyon Uranium, Inc. Grand Junction, Col.

Supplement to Application for aid in an Exploration Project, Pursuant to DMEA Order 1, Under the Defense Production Act of 1950, as Amended.

G. Estimate of Costs -cont-

(a) Independent Contracts - cont -	Footage	Price per ft.	Total
2. Estimated Reaming and Casing of holes to prevent cave in, poor core recovery and sticking tools 2000 feet at $3.50 per foot		$3.50	$ 7,000.00
Total Drilling			$ 58,079.50
3. Additional Access Roads-Estimated Bulldozing 364 hours rental Bulldozer		$12.50	4,550.00
4. Additional Surveying of drill locations 91 Locations at		$20.00	1,820.00
5. Supervision, radiometric probing, geological counseling and evaluation report after drilling Estimated 62 Working Days-- per day		$75.00	4,650.00
Total			$ 69,099.50

(b) Labor, supervision, consultants-None other than included in above.

(c) Operating Materials and supplies-None other than included in above.

(d) (e) (f) (g) (h) None other than included in above.

Summary of estimated costs, including drilling, coring, assays, preparation of additional access roads, surveying in drill sites and hole locations, supervision, radiometric probing, counseling, evaluation reports and all possible contingencies;-

Total estimated costs $69,099.50 divided by 16,950 feet of drilling equals $4.07 2/2 per foot for completed turn-key operation.

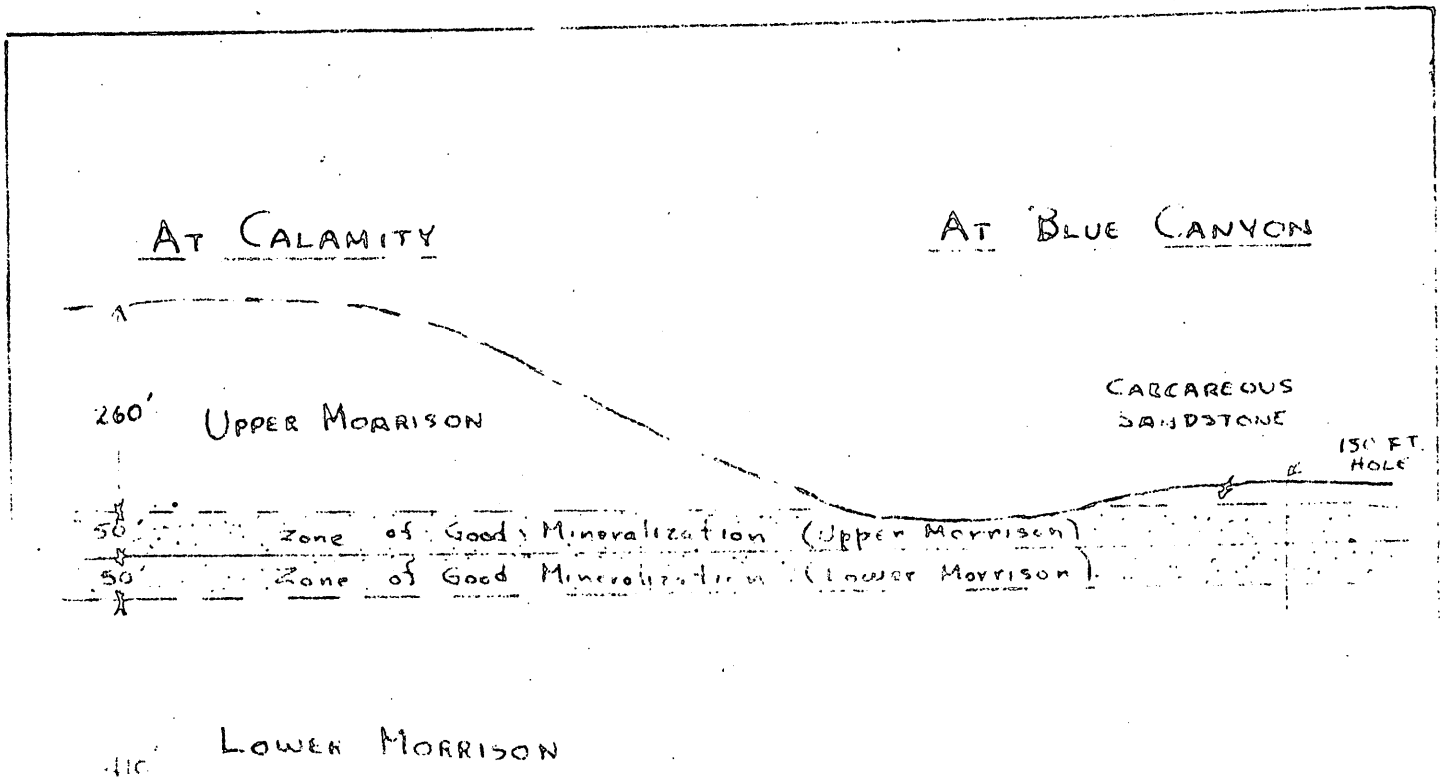


EXHIBIT (5)

CROSS-SECTIONAL SKETCH SHOWING RELATION OF GEOLOGIC COLUMN AT CALAMITY MESA & BLUE CANYON

Exhibit (3)

REPORT ON

SCOTTY AND TERRY URANIUM CLAIMS

OUTLAW MESA--COLORADO

BY

D.V. WATROUS-E.M.

R.ANDERSON-GEOLOGIST

July 7, 1954

LOCATION AND ACCESSIBILITY

The Scotty and Terry claims are located principally within Section 20, T 50 N, R 17 W, Mesa County, Colorado. They are on the extreme east edge of Outlaw Mesa and bounded by the Blue Creek Canyon on the east.

A good all-weather road extends north and west from the claims a distance of approximately ten miles to Colorado State Highway 141. From this junction it is about six miles south to Gateway and about 45 miles north to Grand Junction. The cost of road building for drilling sites and mining is slight. Ore buying stations are located at Uravan, Colorado, a distance of 48 miles and at Grand Junction, Colorado, a distance of 55 miles from the property.

CLIMATE AND VEGETATION

In this area the general elevation is slightly over 6,000 ft. Topographically, the claims are situated on a mesa, incised by canyons up to 200 ft. deep. The climate of this area is generally temperate with slightly more rainfall than is found over the Colorado Plateau. Vegetation consists of scrubby, coniferous trees and brush. Water for mining is accessible in Blue Creek, which may be hauled over a distance of three miles on the present road, however, catchment basins may be constructed to obtain water from occasional rains.

LEGAL STATUS

These claims are staked on an area formerly withdrawn by the A.E.C., and which was released by the A.E.C. on June 14, 1954. On release date the claims were staked and recorded by Earl Hemrich, with the exception of the Scotty #1 claim which was obtained by Earl Hemrich from a previous owner. The claim boundaries observed in part by Mr. Anderson have been properly marked and do not appear to conflict with any other adjoining claims. The claims are newly staked and should qualify for the A.E.C. bonus. The oil and gas lease status under A.E.C. Circular Seven should be examined.

GEOLOGY

These claims have been located entirely on a white to light tan sandstone mapped by the U.S.G.S. as Morrison formation. The under-lying Slick Rock formation may be observed in the Blue Creek Canyon to the east, and will underlie the area at a depth up to 450 feet. Structurally the sandstones are nearly horizontal, however, on the east side of Blue Creek Canyon, the regional dip is to the southwest. No major faulting was noted in the area.

These claims are situated within the Uravan mineral belt and on the favorable Morrison formation. A slight amount of Carbonaceous material accompanies the ore. However, the uranium mineralization seems to be localized by the vanadium ore bodies. Yellow limonite stains on the outcrops are associated with the uranium and vanadium. Fossil bones showing some radioactivity were reported to have been found in the lower portions of the Morrison as float.

ORE OCCURRENCES

Considerable uranium ore is now being produced within four miles northwest of the property from the Calamity and Outlaw Mines. Production from this area is about 180 tons per day over the past eight years. Within one mile west of the property extensive mining is being done, similarly within two miles southeast of the property.

The Hanson #2 Mine indicated on the map, ½ mile north of the claim boundaries, has been in production up until a few months ago and produced about 500 tons of .8% U_3O_8 ore over a period of four months. This mine was sub-leased by Elmer Nielsen from Climax Uranium Co. which in turn leased from the A.E.C. This information was supplied by Earl Hamrich.

Within the Scotty #1 claim, two ore occurrences were noted, which may be a continuous ore body about 300 feet long and may contain as much as 300 tons of ore. These occurrences trend northwesterly and may tie in with a fifteen foot channel noted across a small canyon to the northwest on Climax Uranium ground. The ore outcrop on the northwest slope of the ridge is up to two feet thick and covered by about 30 feet of calcareous sandstone, and may be as much as ten feet horizontal in width. Grab samples taken by Earl Hamrich from a small stock pile of ore located near the northwest outcrop were reported by him to contain 2.47% vanadium and .80% U_3O_8. This ore contains visible carnotite and is typical vanadium ore which gives a good count with a Geiger counter. The southeast ore outcrop exposes an eight to ten inch streak of vanadium ore in cross-bedded

ORE OCCURRENCES (cont.)

sandstone, it is also overlain by about 30 feet of calcareous sandstone. Values reported by Earl Hamrich were .8% to 4.0% vanadium and no uranium. The horizontal width of this ore is less than 10 ft.

Although no carnotite was visible, a slight count was given by the Geiger counter. A small vanadium occurrence was noted on the Terry #5 and Terry #4, showing about six inches of vanadium ore with no visible carnotite and but slight count on the Geiger counter.

No evidence of previous core drilling was noted on the property although extensive drilling has been done by the A.E.C. on the area adjoining to the north and west. The reason for the A.E.C. not drilling the area of the property during its withdrawal should be investigated.

RECOMMENDATIONS

The development of these claims must be based upon a drilling program. On the basis of ore occurrences on the Scotty #1 and possibly on the Terry #4 and #5 claims, we recommend that a compressor be installed on the property for possible development and mining of this ore.

We also recommend that a plane table map be made of the property showing claim corners, ore occurrences, evidence of channeling, rolls and other geological information so that an intelligent drilling program can be outlined. Following this we recommend that a contract drilling program supervised by an engineer be initiated to explore areas outlined by the plane table work. It appears that the drilling

program should include a few holes up to 450 feet in depth so as to also explore lower ore horizons which have produced on adjoining properties; a mining program on new ore will have to await the results of the drill [illegible].

Respectfully submitted by,

Roy A. Anderson
Roy Anderson, Consultant

W. V. Watrous
W. V. Watrous, M.D.

May enclosed

SUMMARY

The Terry and Scotty groups consist of ten adjoining claims located on the east portion of Outlaw Mesa, Mesa County, Colorado. Ore outcroppings on the Scotty #1 claim indicate a possibility of 300 tons of uranium ore immediately accessible for mining. The remainder of the claims require drilling to explore for additional bodies. The claims are readily accessible by good roads for immediate exploration and operation.

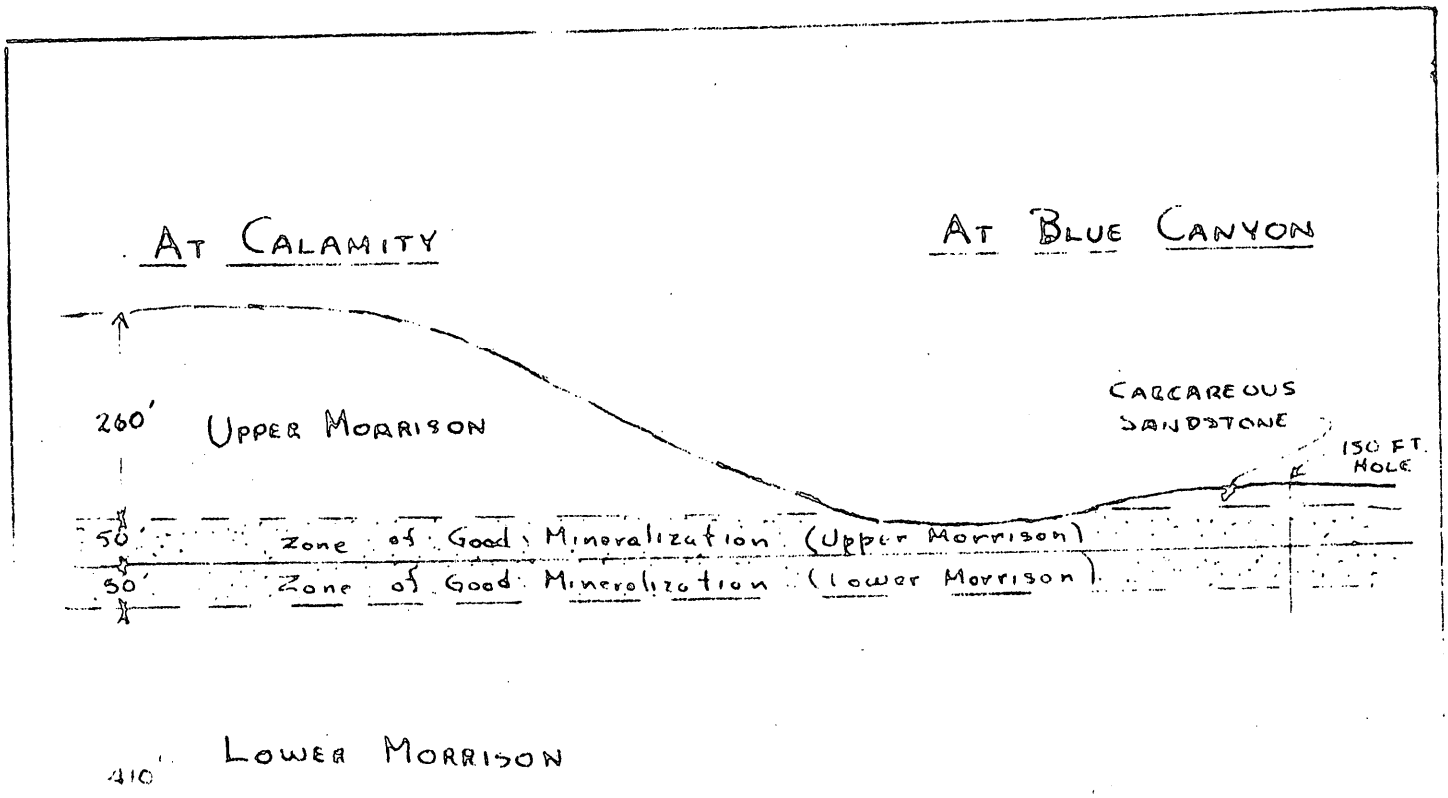


EXHIBIT (5)

CROSS-SECTIONAL SKETCH SHOWING RELATION OF GEOLOGIC COLUMN AT CALAMITY MESA & BLUE CANYON

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

224 New Customhouse
Denver 2, Colorado

March 30, 1955

Mr. H. D. Clark
Clark Engineering Company
Post Office Box 542
Grand Junction, Colorado

DMEA-3578
Blue Canyon Uranium

Dear Mr. Clark:

This is in answer to your letter of March 28, 1955 requesting information about certain mining claims in the Outlaw Mesa area, Mesa County, Colorado.

Blue Canyon Uranium Company submitted an application for Government exploration assistance under the DMEA program on the Scotty, Terry, and Scot groups of claims located in Mesa County, Colorado. A joint field examination of the property was performed by members of the U. S. Geological Survey and the U. S. Bureau of Mines in conjunction with this application. Unfortunately the result of this examination is considered confidential.

We recommend that you address a letter to C. O. Mittendorf, Administrator DMEA, Interior Building, Washington 25, D. C. for the information you seek. You should refer to DMEA Docket No. 3578 and should substantiate by documents or otherwise your interest in the claims. Refer to the claims by name and it is possible that information required can be made available to you at the Washington level.

We are sorry we can be of no greater assistance to you but do advise that you follow the above procedure.

Yours very truly,

W. M. Traver

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

RDB:sr

cc Sec. to Op. Comm. (2)w/copy of letter
Subject
Chron
J. F. Shaw w/copy of letter
W. P. Williams w/copy of letter
E. N. Harshman w/copy of letter

CLARK ENGINEERING CO.
H. D. CLARK

COLORADO & UTAH REGISTERED LAND SURVEYOR

P. O. Box 542
GRAND JUNCTION COLORADO
PHONE 4381-W

March 28, 1955

DMEA
Date Rec'd
MAR 29 1955
BUREAU OF MINES
Denver, Colorado

Mr. W. F. Traver
224 New Custom House Bldg.
Denver, Colorado

Dear Mr. Traver,

We are interested in a group of 13 claims in the Outlaw Mesa area, Mesa County, Colorado, owned by Messrs. Caldwell and Hamrick, under lease to the Blue Canyon Uranium Co., and understand that the leasors made application in 1954 for a D.M.E.A. loan; that it was approved but went no further. Can you confirm this for us and if so, tell us for what amount the loan was approved?

Thanking you very kindly we are

Yours truly,

CLARK ENGINEERING CO.

H D Clark
H. D. Clark

HDC:jr

Surname 700

Ching
Ellis
Kiilsgaard
Hedges
Selfridge
Fehlmann

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

Mr. Ira L. Abelow
Blue Canyon Uranium, Inc.
5420 E. 6th Avenue
Denver, Colorado

MAR 23 1955

Re: Docket No. DMEA-3578 (Uranium)
Scotty, Terry and Scot claims
Mesa County, Colorado

Dear Mr. Abelow:

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

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

Sincerely yours,

C. O. Mittendorf
(by EST)
Administrator

MChing:am
3-22-55
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Ching
DMEA Field Team, Region III(2)

R.C.S.

Ching Ellis

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

March 22, 1955

Summary of Proposed Project

Object: Denial of application for an exploration project

Docket No.: DMEA-3578

Commodity: Uranium

Applicant: Blue Canyon Uranium Inc.
% Mr. Ira L. Abelow
5420 E. 6th Avenue
Denver, Colorado

Property: 16 unpatented claims; Scotty 1-5, Terry 1-8a Scot 6-8, in T. 50 N., R. 17 W., Mesa County, Colorado. Applicant is owner by location of 3 claims and has option to purchase 13 claims. (in Secs. 19, 20, 29 and 30)

Date of application: Undated (Application received Nov. 22, 1954)

Amount of application: $69,099.50

Work Proposed: Eighty 150-foot diamond drill holes to explore the Morrison formation and eleven 450-foot holes to test the underlying formations, all on 400-foot spacing. Estimated cost as follows:

Independent contracts

16,950 ft. D. D. holes	$58,079.50
Access road bulldozing	4,550.00
Engineering, supervision, consulting	6,470.00
Estimated total cost	$69,099.50

Field Team Report: February 11, 1955: Glen Walker, USBM, T. E. Mullens, USGS.

The average uranium deposit in this district contains about 1,000 tons of ore and is found in the upper-most rim of the Salt Wash member of the Morrison formation. This geologic horizon is on or near the surface on the subject property, but has been largely removed by erosion. Where

present, the ore-bearing zone is considered as only semi-favorable for the occurrence of uranium ore. In previous work two mineralized exposures had been followed by short adits without significant results. A denial of the application is recommended.

Commodity Committee Members' Comments:

Geological Survey - E. L. Newcomb, March 8, 1955

Most of the ore-bearing zone in the Salt Wash has been removed by erosion and the remaining target area is too small. Limited mineralization was reported on the property but sufficient exploration by short adits has been done to indicate the spotty nature of the uranium occurrences. Drilling by the Survey in an area just west of the applicant's property indicated the ground is unfavorable for further exploration. Concurs with the Field Team in its recommendations for denial.

Bureau of Mines - J. E. Crawford, March 14, 1955

Reviewed the report of examination and discussed it with AEC representative. Concurs with the Field Team that the application should be denied.

Rare and Miscellaneous Metals Division - Michael Ching, March 18, 1955

Diamond drilling by the USGS just west of the Terry claims was not encouraging.

Where present the ore-bearing horizon of the Salt Wash is on or near the surface. It is probable that the best mineralized exposures were followed in the two adits previously driven. Here the mineralization consisted of very narrow streaks of ore which extended only a few feet in from the outcrop. The remnants of the ore-bearing zone on the property appear to be rather limited in extent and in geological favorability for ore occurrence. Deeper drilling into the Entrada or Slick Rock, as proposed by the applicant, does not appear to be warranted by the history of this area.

Conclusions and Recommendations:

The possibility of finding a significant ore body in the limited area of ore-bearing sandstone remaining on the property is not good. It is recommended that the application be denied.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

3/15/55 gla

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 15 1955

March 14, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket 3578 (Uranium), Blue Canyon Uranium Corp., Scotty, Terry & Scot claims, Mesa County, Colorado

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

We concur with the Field Team that the application for exploration assistance be denied.

J. E. Crawford

J. E. Crawford

Attachment

Copy to: Branch of Rare and Precious Metals
Division of Minerals
J. O. Hosted (2)
J. E. Crawford (2)

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

March 14, 1955

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Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

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J. E. Crawford (2)

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

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J. E. Crawford

Attachment

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Division of Minerals
J. O. Hosted (2)
J. E. Crawford (2)

3/10/55 gla

IN REPLY REFER TO:

Defense Minerals Administration
RECEIVED
MAR 9 - 1955

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

March 8, 1955

Re: DMEA-3578
Blue Canyon Uranium, Inc.
(Scotty, Terry, & Scott Claims)
Mesa County, Colorado
$69,099.50 - Uranium

Memorandum

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

From: E. L. Newcomb, U. S. Geological Survey

Subject: Review of proposed exploration project

The operator requested assistance to explore the Salt Wash member by diamond drilling 91 holes on a 400 foot grid pattern.

Most of the ore-bearing zone in the Salt Wash has been removed by erosion. Limited mineralization was reported on the Scotty No. 2, but sufficient exploration by short adits has been done to indicate the spotty nature of the uranium occurrences. Drilling by the Survey in an area just west of the operator's claims indicated the ground is unfavorable for further exploration.

I concur with the Field Team's recommendation for denial. The remaining target area is too small and the evidence of significant mineralization is absent.

E. L. Newcomb
E. L. Newcomb

IN REPLY REFER TO:

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

Defense Minerals Administration
RECEIVED
MAR 9 - 1955

March 8, 1955

Re: DMEA-3578
Blue Canyon Uranium, Inc.
(Scotty, Terry, & Scott Claims)
Mesa County, Colorado
$69,099.50 - Uranium

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I concur with the Field Team's recommendation for denial. The remaining target area is too small and the evidence of significant mineralization is absent.

E. L. Newcomb

ELNewcomb:hlm
G-3/8/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641 Interior

IN REPLY REFER TO:

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

Defense Minerals Administration
RECEIVED
MAR 9 - 1955

March 8, 1955

Re: DMEA-3578
Blue Canyon Uranium, Inc.
(Scotty, Terry, & Scott Claims)
Mesa County, Colorado
$69,099.50 - Uranium

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E. L. Newcomb

ELNewcomb:hlm
G-3/8/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641 Interior

IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 9 - 1955

March 8, 1955

Re: DMEA-3578
Blue Canyon Uranium, Inc.
(Scotty, Terry, & Scott Claims)
Mesa County, Colorado
439,099.50 - Uranium

Memorandum

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

From: R. L. Newcomb, U. S. Geological Survey

Subject: Review of proposed exploration project

The operator requested assistance to explore the Salt Wash member by diamond drilling 91 holes on a 400 feet grid pattern.

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R. L. Newcomb

RLNewcomb:hlm
G-3/8/55

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641 Interior

3/7/55-gla

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

224 New Customhouse
Denver 2, Colorado

February 25, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, DMEA Docket 3578 (Uranium), Blue Canyon Uranium Corp; Scotty, Terry & Scot claims, Mesa County, Colorado

Enclosed are the original and three copies of the report pertaining to the above application.

We concur with the recommendation of the field examiners that the application for exploration assistance be denied.

W. M. Traver
W. M. Traver

E. N. Harshman
E. N. Harshman
DMEA Field Team, Region III

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
3-4-55
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

/DMEA
Date Rec'd
FEB 21 1955

Region III

TRANSMITTED

FEB 25 1955

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
February 18, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw, Project Superviser

Subject: Examination Report, Docket No. DMEA 3578, Scotty, Terry, and Scot claims, (Uranium) Blue Canyon Uranium, Inc., Mesa County, Colorado.

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations" prepared by Glen Walker, mining engineer, and T. E. Mullens, geologist. Also, enclosed are the original and ten copies of an engineering report by Glen Walker.

The applicant requested exploration assistance for diamond drilling 16,950 feet from 91 surface locations at an estimated cost of $69,099.50. The examining engineer concluded that the favorable ore-bearing sandstone caps only a relatively small area of the property and the exploration target is very limited. It is recommended that the application be denied.

John F. Shaw

John F. Shaw

cc 10
DMEA 3578
Chron

JFS/cm

Reviewed by
DMEA OPERATING COMMITTEE
3-4-55
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3578, Scotty, Terry, and Scot Claims

Blue Canyon Uranium, Inc.

Mesa County, Colorado

Uranium

Glen Walker, Mining Engineer
Bureau of Mines

T. E. Mullens, Geologist
Geological Survey

February 11, 1955

Reviewed by
DMEA OPERATING COMMITTEE
3-4-55
(date)

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

RECEIVED
FEB 28 1955

Summary, Conclusions, and Recommendations

By Glen Walker
Mining Engineer
Bureau of Mines

T. E. Mullens
Geologist
Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
3-4-55
(date)

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Glen Walker and T. E. Mullens

On January 19, 1955, the unpatented mining claims of the Blue Canyon Uranium, Inc., Mesa County, Colorado, were examined by a Region III DMEA Field Team for uranium possibilities. Four representatives of the applicant accompanied the examining team.

Government assisted exploration was requested at an estimated cost of $69,099.50; Government participation 75 percent, or $52,824.63, for 91 diamond-drill holes on 16 claims.

County records indicate the concern has a legal claim to the property involved.

The average uranium deposit in the district contains about 1,000 tons and is found in the upper-most "rim" of the Morrison Salt Wash formation. Because of topographic conditions, this geologic horizon extends over only a very small portion of the property; but where it does exist it is on or near the surface so that exploration by drilling offers little difficulty.

It is concluded that the probability of making a significant uranium discovery in the limited favorable area is rather remote and does not warrant Government participation in the exploration.

A denial of the application is recommended.

Reviewed by
DMEA OPERATING COMMITTEE
3-4-55
(date)

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

Engineering Report

By Glen Walker
Mining Engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
3-4-55
(date)

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

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Acknowledgements	1
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History, production and ownership	3
Description of the deposits	3
Mineable reserves	3
Present status	4
Project proposals with costs	4
Conclusions	5
Recommendations	5

ILLUSTRATIONS

Figure	Follows page
1. Location Map, Scotty, Terry, and Scot claims, Blue Canyon Uranium, Inc., Mesa County, Colorado	1

DMEA 3578

SCOTTY, TERRY, AND SCOT CLAIMS
BLUE CANYON URANIUM, INC.
MESA COUNTY, COLORADO

ENGINEERING REPORT

By Glen Walker

INTRODUCTION

The following unpatented mining claims owned by Blue Canyon Uranium, Inc., Mesa County, Colorado, were examined by a DMEA Field Team on January 19, 1955:

> Scotty No. 1, Scotty No. 2A, Scotty No. 3, Scotty No. 4, Scotty No. 5, Terry No. 1, Terry No. 2, Terry No. 3, Terry No. 4, Terry No. 5, Terry No. 6, Terry No. 7, Terry No. 8, Scot No. 6, Scot No. 7 and Scot No. 8.

The owner and applicant requested Government assistance in exploring for uranium deposits by diamond drilling 16,950 feet from 91 surface locations at an estimated cost of $69,099.50; Government participation 75 percent, or $52,824.63.

ACKNOWLEDGEMENTS

F. N. Bosco, a consulting geologist, and three of the company's directors guided the examining field team.

LOCATION, TOPOGRAPHY AND PHYSICAL FEATURES

The property is located in sections 19, 20, 29, and 30, T. 50 N., R. 17 W., New Mexico principal meridian, Mesa County, Colorado (fig. 1). Grand Junction, Colorado, the nearest rail and supply point, is approximately 55 miles northwest of the claims. It can be reached by travel over 10 miles of one-way mountain trails and 45 miles of state maintained roads No. 141 and U. S. 50.

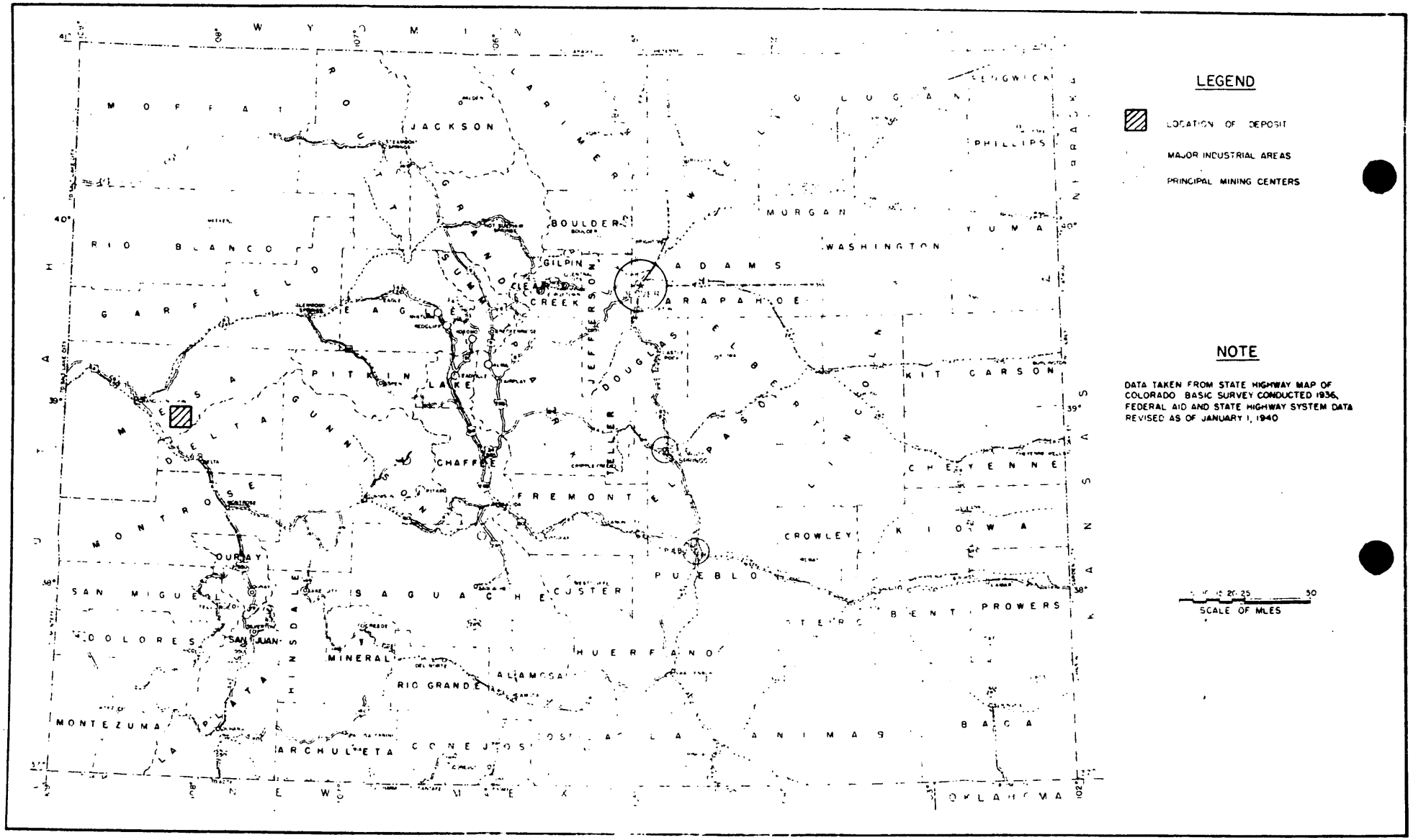


FIGURE 1 - LOCATION MAP, SCOTTY, TERRY, AND SCOT CLAIMS, BLUE CANYON URANIUM, INC., MESA COUNTY, COLO.
(DMEA 3578)

The area is part of a ruggedly dissected plateau in which mesas with very steep sides have been formed by the headward erosion of intermittent streams through sedimentary rocks of unequal competence. The property is on and near the top of a mesa which borders the west side of Blue Canyon; here the difference in relief is about 100 feet. Construction of access drill roads would not be greatly hampered by topography.

A thick growth of small pinon pine and cedar covers the claims. This timber would find limited use in an underground mining operation. However, there are several sawmills on the higher mesas, 10-20 miles from the property where dimension timber can be obtained.

Water for drilling and for a small mining operation may be taken from Blue Creek by hauling approximately 3 miles or by pumping against a head of about 600 feet for 1,000 feet.

Power for any activity must be supplied by internal combustion engines as electricity is unavailable.

Good mine labor in the immediate vicinity is currently rather difficult to obtain because of the comparative inaccessibility and because of weather conditions.

Climate in the area is marked by occasional storms both in winter and summer which supply the 10 to 14 inches of annual precipitation. Outside work can be pursued the year round except for a few days at a time in winter when blizzards close the roads.

HISTORY, PRODUCTION AND OWNERSHIP

According to county records these mining claims were located in June 1954, and the locations were amended in August 1954. The present concern obtained title through a purchase contract with the original locators.

No ore production has been made from the property although on Scotty No. 1 claim two short adits have been driven from the outcrop along 3 to 4 inches of mineralized sandstone. This work disclosed 5 to 10 tons of hand sorted ore of undetermined grade which is stockpiled at the mine camp.

DESCRIPTION OF THE DEPOSITS

The only indication of uranium mineralization observed was on the Scotty No. 1 claim where the two above mentioned adits had been driven. Here the 3 to 4-inch streak of uranium-vanadium minerals were contained in the upper "rim" of the Salt Wash member of the Jurassic Morrison formation. Only a very narrow band, a few inches thick, of green clay was associated with the sandstone layer that contained the ore minerals. The ore-bearing streak as shown in the workings extended only 3 to 5 feet in from the outcrop.

MINEABLE RESERVES

Although a report of examination of this property included with the application states there are an estimated 300 tons of uranium ore on the Scotty No. 1 claim, the evidence, as noted above, could hardly be extended to include that quantity. The present evidence indicates no mineable reserves. No samples were taken as the exposures were of such discontinuous nature as to make calculations ineffective.

PRESENT STATUS

The two adits previously mentioned are the only exploratory openings observed on the property. The adit on the south side of the knoll of Salt Wash on the Scotty No. 1 claim extends 25 feet on a course of N. 30 W. It follows a black streak of uranium-vanadium minerals for about 5 feet from the portal. The adit on the west side is about 15 feet long and bears about S. 70 E. Here the favorable indication extends only about 3 feet in from the portal and ranges up to 3 inches thick. The two portals are about 150 feet apart.

There is no equipment presently on the property and the only building is a small trailer house to which a lean-to-shack has been attached.

PROJECT PROPOSALS WITH COSTS

The applicant proposed the following:

Independent contracts:

80 holes 150 feet deep		
9 core holes at 150 feet	= 1,350 feet at $2.85/ft.	$ 3,847.50
71 non-core holes at 150 feet	= 10,660 feet at $2.45/ft.	26,092.50
11 holes 450 feet deep		
2 core holes at 450 feet	= 900 feet at $4.95/ft.	4,455.00
9 non-core holes at 450 feet	= 4,050 feet at $3.85/ft.	15,592.50
Totals	16,950 feet	$49,987.50
Estimated standby time - 1 hr. per hole at $12.00/hr.		1,092.00
Estimated reaming and casing - 2,000 feet at $3.00/ft.		7,000.00
Access road building, 364 bulldozer hours at $12.50/hr.		4,550.00
Surveying of hole sites, 91 at $20.00 each		1,820.00
Total contracts		$64,449.50
Supervision, probing, geological consul, evaluation of data, logging of core and cuttings, analysis estimated time 62 days at $75.00/day		4,650.00
Grand total for project		$69,099.50

The holes were proposed on a 400-foot grid with no hole drilled closer than 200 feet from the outside boundaries of the claim group.

CONCLUSIONS

The favorable ore-bearing sandstone caps only a relatively small area of the property and the ore deposits of the general area are comparatively small hence the target of exploration is very limited. It appears that a few 75-foot wagon-drill holes would indicate the feasibility of holding the claims; this work would cost but very little and is thought to be within the capacity of the applicant.

RECOMMENDATIONS

It is recommended that the request for Government assisted exploration of this property be denied.

/cm

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FEB 11 1955

Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

TRANSMITTED

February 10, 1955

FEB 25 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3578 (uranium), Blue Canyon Uranium, Inc., Scotty, Terry, and Scot claims, Mesa County, Colorado

Enclosed are 10 copies of a geologic report by T. E. Mullens, U. S. Geological Survey, covering the above subject property.

Since ore-bearing horizon in the Salt Wash has been eroded from most of the claims and since the ore-bearing horizon, where present, is not lithologically favorable for significant bodies of uranium ore, Mullens concludes that the application for exploration assistance should be denied.

I concur with Mullens' recommendation.

Your attention is called to the new address for correspondence on this docket given in the covering letter by Williams.

The brochure is returned herewith.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (11)

ENHarshman:arh

Reviewed by
DMEA OPERATING COMMITTEE
3-4-55
(date)

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

TRANSMITTED

FEB 25 1955

February 2, 1955

Memorandum

To: E. N. Harshman

From: W. P. Williams

Subject: DMEA Docket 3578 (Uranium), Blue Canyon Uranium, Inc., Scotty, Terry, and Scot claims, Mesa County, Colorado

Enclosed are 11 copies of a geologic report and attached maps by T. E. Mullens, covering the above-referenced property; also the brochure.

After field examination of the property, Mullens concludes that DMEA assistance for exploring the property be denied for these reasons: 1) The ore-bearing zone has been largely removed from the claims by erosion, and 2) where present, the ore-bearing zone is only semifavorable for the occurrence of uranium ore deposits.

I concur with Mullens' recommendations.

The Atomic Energy Commission was asked for its advice and assistance in evaluating the property.

According to a letter dated January 6, all correspondence to Blue Canyon Uranium, Inc., should be sent to Mr. Ira L. Abelow, 5420 E. 6th Ave., Denver, Colorado.

T. E. Mullens
for W. P. Williams
Geologist

TEM/mlr
Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
3-4-55
(date)

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3578, Blue Canyon Uranium, Inc., Scotty, Terry, and Scot claims, Mesa County, Colorado

Uranium

Geologic Report

by

T. E. Mullens
U. S. Geological Survey

February 1, 1955

Reviewed by
DMEA OPERATING COMMITTEE
3-4-55
(date)

INTRODUCTION AND SUMMARY

Blue Canyon Uranium, Inc., P. O. Box 476, Grand Junction, Colorado, has applied to the Defense Mineral Exploration Administration (DMEA Docket No. 3578) for a loan to explore the Morrison formation on the Scot, Scotty, and Terry groups of claims in secs. 19, 20, 29, and 30, T. 50 N., R. 17 W., Gateway mining district, Mesa County, Colorado, (fig. 1). The property was examined January 19, 1955, by Mr. Glen Walker, U. S. Bureau of Mines, and T. E. Mullens, U. S. Geological Survey, accompanied by R. S. Bohrer, James D. Nichols, and Edwin K. Gage, officers of Blue Canyon Uranium Corporation, and Mr. F. N. Bosco, geological consultant for Blue Canyon Uranium Corporation.

The applicant proposes a drilling program of 80 holes about 150 feet deep and 11 holes 450 feet deep, all on 400-foot spacing, to test the property. The complete program is estimated to cost $66,099.50.

It is here recommended that Government assistance in exploring these claims be denied as the ore-bearing zone has been largely removed by erosion, and, where present, the ore-bearing zone is thought to be only semifavorable for the occurrence of uranium ore deposits.

GEOLOGY

Rocks which comprise the Entrada and Summerville formations and the Salt Wash member of the Morrison formation crop out on the Blue Canyon Uranium Corporation claims. The Entrada and Summerville formations were not examined during the field examination. The

Salt Wash member of the Morrison formation is about 320 feet thick and consists of interstratified cross-laminated sandstone and mudstone. The sandstone is fine- to medium-grained, generally light colored and contains abundant red and sparse green mudstone seams. The sandstone occurs in gently lensing beds as much as 50 feet thick, and zones containing mainly sandstone occur near the base, center, and top of the Salt Wash member. The interstratified mudstone is mainly reddish brown, but contains sparse lenses and thin beds that are greenish gray. The strata strike about N. 45° W. and dip about 3° SW on the claims.

The top sandstone zone of the Salt Wash member is the main ore-bearing zone in the Gateway mining district where the claims are located. Uranium ore deposits are also known in the lower sandstone zones, but these deposits are generally too small to find economically by drilling.

ORE DEPOSITS

On the Blue Canyon Uranium Corporation group of claims, the ore-bearing zone is present only on parts of these claims: Terry nos. 1, 2, 3, 4, and 6; and Scotty nos. 1 and 5 (fig. 2). The ore-bearing zone on Scotty no. 2 contains three showings of uranium minerals. All showings have been prospected by short adits and the applicants have stockpiled about 10 tons of ore averaging 0.25 percent U_3O_8 (estimated) from the best showing. The examining team believes that no indicated or inferred ore is present in any of the three showings. Furthermore, on the basis of the extremely spotty distribution of green mudstone

under the ore-bearing sandstone, the outcrop on Scotty no. 1 is considered only semi-favorable for the occurrence of uranium ore deposits.

The ore-bearing zone exposed on Scotty no. 5 and Terry nos. 1, 2, 3, 4, and 6 claims were not examined in detail because of snow-covered slopes. However, where examined, the ore-bearing zone was not underlain by green mudstone. The absence of green mudstone is an indication that the outcrops examined are only semifavorable for the occurrence of uranium ore.

The U. S. Geological Survey has drilled several holes a short distance west of the Blue Canyon Uranium Corporation claims. Logs of these holes were examined, and these logs revealed that the ground west of the claims is best classified as unfavorable to semifavorable for the occurrence of uranium deposits.

CONCLUSIONS AND RECOMMENDATIONS

A DMEA field examination was made of the Blue Canyon Uranium Corporation Scott, Scotty, and Terry groups of claims in the Gateway mining district, Mesa County, Colorado.

The ore-bearing zone of the Salt Wash member of the Morrison formation has been largely removed from most of the claims; and where present the ore-bearing zone is classed as only semifavorable for the occurrence of uranium ore deposits.

It is recommended that DMEA assistance to explore the Blue Canyon Uranium Corporation claims be denied.

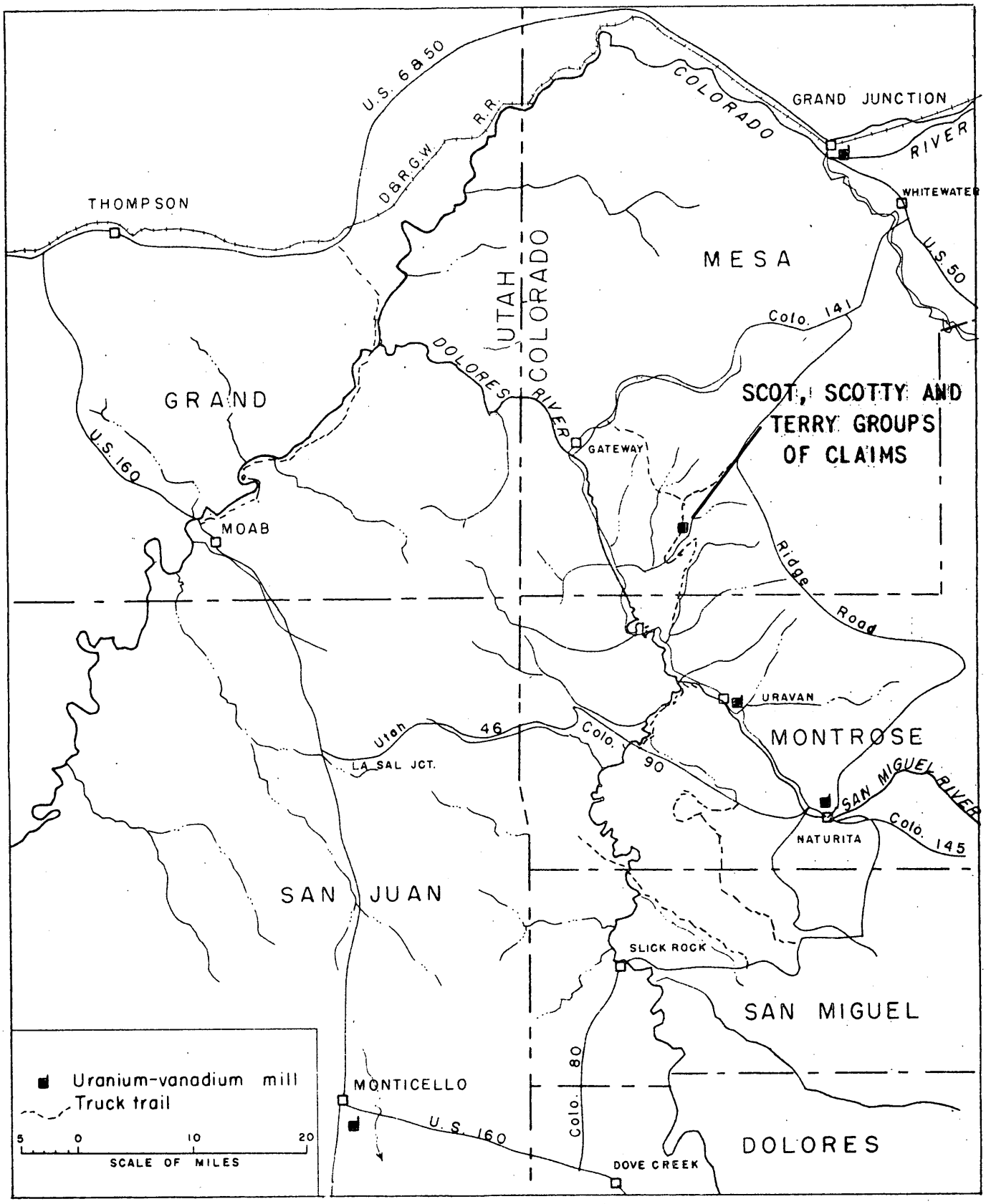
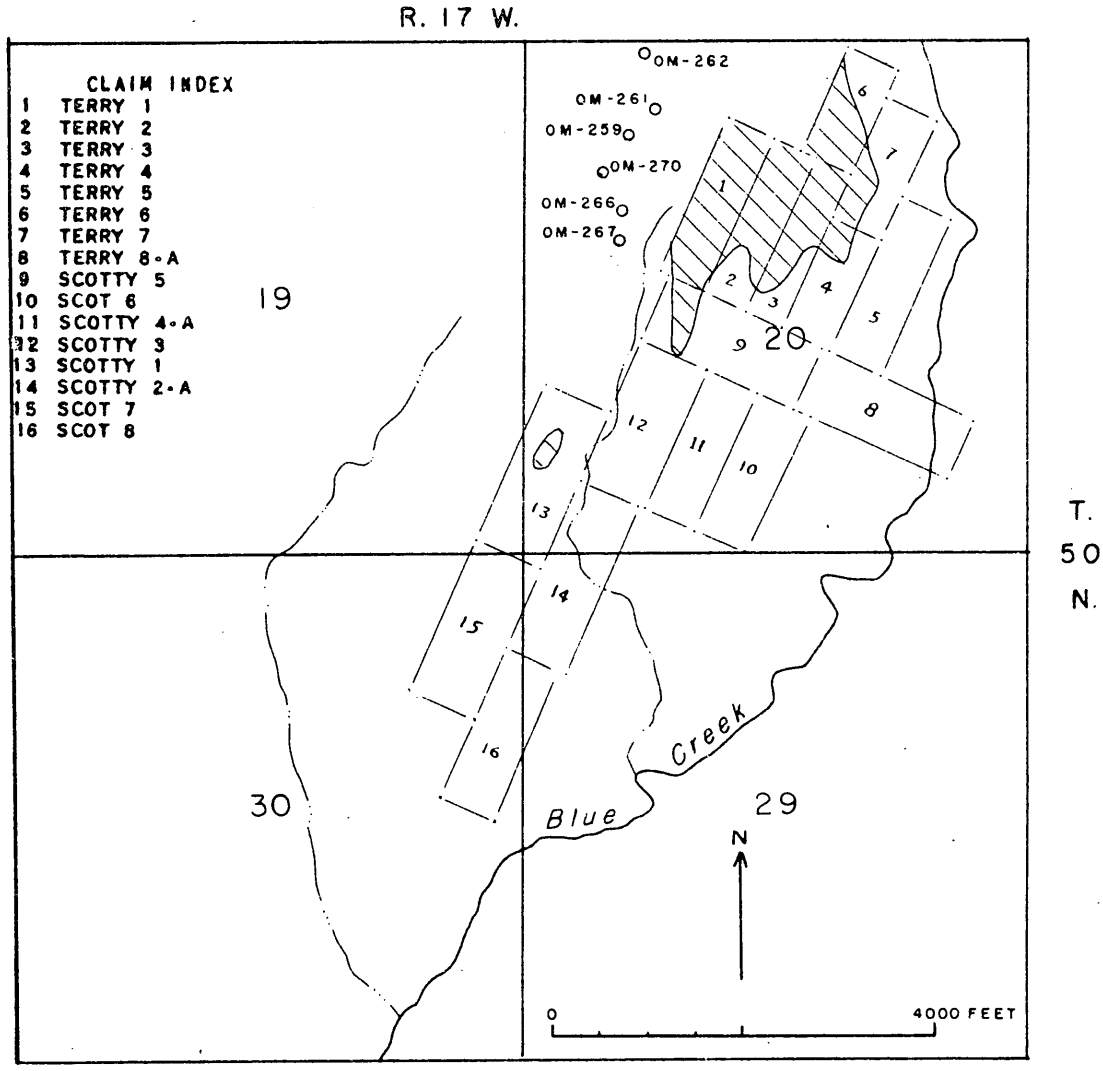


Figure 1. INDEX MAP OF PART OF THE COLORADO PLATEAU SHOWING LOCATION OF THE SCOT, SCOTTY AND TERRY GROUPS OF CLAIMS, BLUE CANYON URANIUM CORPORATION, MESA COUNTY, COLORADO



EXPLANATION

OM-267 U.S. GEOLOGICAL SURVEY DIAMOND-DRILL HOLE

GROUND UNDERLAIN BY THE ORE-BEARING ZONE OF THE SALT WASH MEMBER OF THE MORRISON FORMATION

Figure 2. MAP OF THE SCOT, SCOTTY, AND TERRY GROUPS OF CLAIMS, BLUE CANYON URANIUM CORPORATION, MESA COUNTY, COLORADO

1/17/55 gla

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

224 New Customhouse
Denver 2, Colorado

January 14, 1955

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3578 (Uranium), Scotty, Terry and Scot claims, Mesa County, Colorado

Enclosed is a copy of a letter from Edwin K. Gage, Secretary-Treasurer, Blue Canyon Uranium, Inc., relative to their mailing address.

W. H. King

W. H. King

Enclosure

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

224 New Customhouse
Denver 2, Colorado

January 14, 1955

Memorandum

To: Secretary to the Operating Committee
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Subject: Docket DMEA 3578 (Uranium), Scotty, Terry and Scot claims, Mesa County, Colorado

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W. H. King

Enclosure

RDB:ld

Copy to: J. F. Shaw
W. P. Williams
sub
chron

BLUE CANYON URANIUM, INC.

P. O. Box 476

GRAND JUNCTION, COLORADO

R. S. Bohrer, *President*
J. D. Nuckois *Vice President*
E. K. Gage, *Secretary-Treasurer*

Date Rec'd.
JAN 1955
Bureau of Mines

January 6, 1955

Bureau of Mines
U. S. Department of Interior
New Customs House
Denver, Colorado

Subject: DMEA Loan Application
File #3578

Gentlemen:

Reference is made to our loan application #3578.

It is requested that all correspondence be addressed to and channeled through Mr. Ira L. Phelow, 5120 E. 6th Avenue, Denver, Colorado.

Thanking you for your cooperation in this matter, we remain

Very truly yours,

BLUE CANYON URANIUM, INC.

Edwin K. Gage
Secretary-Treasurer

12/21/54 gla

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

224 New Customhouse
Denver 2, Colorado

December 13, 1954

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region lV

Subject: Docket No. DMEA 3578 (Uranium)
Blue Canyon Uranium Inc., Mesa County, Colorado

Enclosed are the following assignments and quitclaim deeds submitted to this office by the applicant:

(1) Assignment and quitclaim deed from Lawrence Migliaccio and Marie O. Migliaccio to Blue Canyon Uranium Inc. dated November 20, 1954.

(2) Assignment and quitclaim deed from Robert S. Bohrer and Roxilu K. Bohrer to Blue Canyon Uranium Inc. dated November 22, 1954.

W. H. King

W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 27 1954

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

224 New Customhouse
Denver 2, Colorado

December 13, 1954

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 3578 (Uranium)
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(2) Assignment and quitclaim deed from Robert S. Bohrer and Roxilu K. Bohrer to Blue Canyon Uranium Inc. dated November 22, 1954.

W. H. King

W. H. King

Enclosures

3578

ASSIGNMENT AND QUIT-CLAIM DEED

KNOW ALL MEN BY THESE PRESENTS:

That we, Robert S. Bohrer and Roxilu K. Bohrer, his wife, of Pocatello, Idaho, in consideration of One Dollar ($1.00) and other good and valuable consideration, receipt of which is hereby acknowledged, do hereby quit-claim, assign, transfer and convey unto the Blue Canyon Uranium, Inc. all our right, title and interest in and to a certain Agreement and Option dated the 17th day of June, 1954, by and between Earl L. Hamrick, Francis L. Caldwell and Robert S. Bohrer and Lawrence Migliaccio, covering those certain lode mining claims known as the Scotty Nos. 1 thru 5 inclusive, and Terry Nos. 1 thru 8 inclusive, located in Outlaw Blue Creek Mining District, Mesa County, Colorado, and do hereby quit-claim and release unto said Blue Canyon Uranium, Inc. all and any right, title and interest which we may have in said mining claims or amended locations thereto or any other lode mining claims being or lying contiguous with or adjacent to said mining claims.

IN WITNESS WHEREOF, we have hereunto set our hands this 22nd day of November, 1954.

Robert S. Bohrer

Roxilu K. Bohrer

STATE OF UTAH)
) ss.
COUNTY OF SALT LAKE)

On this 22nd day of November, 1954, personally appeared before me Robert S. Bohrer and Roxilu K. Bohrer, his wife, signers of the foregoing instrument, who duly acknowledged to me that they executed the same.

NOTARY PUBLIC

Residing at Salt Lake City, Utah

My Commission Expires:

2/23/55

ASSIGNMENT AND QUIT-CLAIM DEED

KNOW ALL MEN BY THESE PRESENTS:

That we, Lawrence Migliaccio and Marie O. Migliaccio, his wife, of Price, Utah, in consideration of One Dollar ($1.00) and other good and valuable consideration, receipt of which is hereby acknowledged, do hereby quit-claim, assign, transfer and convey unto the Blue Canyon Uranium, Inc. all our right, title and interest in and to a certain Agreement and Option dated the 17th day of June, 1954, by and between Earl L. Hamrick, Francis L. Caldwell and Robert S. Bohrer and Lawrence Migliaccio, covering those certain lode mining claims known as the Scotty Nos. 1 thru 5 inclusive, and Terry Nos. 1 thru 8 inclusive, located in Outlaw Blue Creek Mining District, Mesa County, Colorado, and do hereby quit-claim and release unto said Blue Canyon Uranium, Inc. all and any right, title and interest which we may have in said mining claims or amended locations thereto or any other lode mining claims being or lying contiguous with or adjacent to said mining claims.

IN WITNESS WHEREOF, we have hereunto set our hands this 20 day of November, 1954.

Lawrence Migliaccio

Marie O. Migliaccio

STATE OF UTAH)
) ss.
COUNTY OF)

On this 20 day of November, 1954, personally appeared before me Lawrence Migliaccio and Marie O. Migliaccio, his wife, signers of the foregoing instrument, who duly acknowledged to me that they executed the same.

[illegible] - County Clerk
NOTARY PUBLIC

Residing at Price, Utah

My Commission Expires:

_____

Surname 700

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

DEC 10 1954

Ching
Ellis
Kiilsgaard
Johnson
Martin
Johnson

Blue Canyon Uranium, Inc.
c/o Mr. Gould
725 National Bank Bldg.
Denver, Colorado

Re: Docket No. DMEA-3578 (Uranium)
Scotty, Terry and Scot claims
Mesa County, Colorado

Gentlemen:

The application for assistance in exploring your property in Mesa County, Colorado, under the above-captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred to the Executive Officer of Region IV at the following address:

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

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

Sincerely yours,

C. O. Mittendorf (for)

Administrator

MChing:am
12-8-54
cc to: Admr. Reading File
Docket
Code 700
DMEA Field Team, Region IV(2)

Surname 700

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

Ching
Ellis
Martin
Johnson

DEC 1 0 1954

Mr. E. H. King
Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-3578 (Uranium)
Blue Canyon Uranium, Inc.
Scotty, Terry and Scot claims
Mesa County, Colorado

Dear Mr. King:

The subject application is being referred to you for investigation, a field examination, if warranted, and recommendations. A copy of the application is already in your files.

Enclosed are two copies each of comments and recommendations by John E. Crawford and E. L. Newcomb of the Uranium Commodity Committee, dated November 30 and December 2, 1954, respectively.

You have already noted the absence of an assignment document from Robert S. Dohrer and Lawrence Migliaccio to the Applicant.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee (JHB)

Enclosures

APPROVED:
C. H. JOHNSON
Member, Bureau of Mines (JHB)

Thor H. Kiilsgaard
Member, Geological Survey (JHB)

MChing:am
12-7-54
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Mr. Ching
Code 700

12/3/54 gla

IN REPLY REFER TO:

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

Defense Minerals Administration
RECEIVED
DEC 3 1954

December 2, 1954

Re: DMEA-3578
Blue Canyon Uranium, Inc.
(Scotty, Terry & Scot Claims)
Mesa County, Colorado
$69,100 - Uranium

Memorandum

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

From: E. L. Newcomb, U. S. Geological Survey

Subject: Recommendation for denial

The applicant has proposed an extensive drilling program to test the lower Saltwash sandstone member of the Morrison formation. The project would consist of 80 shallow holes (average depth - 150 feet), and 11 deep holes (average depth - 450 feet) which would test the underlying Entrada formation.

The applicant's property lies in an area of nearly flat-lying beds of the lower Saltwash and Entrada sandstones. However, a large part of the Saltwash (lower ore-bearing sandstone) has been eroded away over much of the applicant's property. Also, where the Saltwash is present its remaining average thickness is 50 feet or less. The reported 10 tons of production was taken from a thin finger-like, southern extension of the Saltwash which probably is less than 30 feet thick and apparently does not contain mineralization across its entire width of 200-300 feet.

There has been considerable drilling done west and north of the applicant's claims by the U.S.G.S. All holes near the claims have been unsuccessful or have indicated the unfavorability of carrying out further drilling eastward and southward into the general area of the applicant's claims. (TEI-163 -- Carnotite resources of Outlaw Mesa, Mesa County, Colorado: (Confidential) 1952, by G. K. Brasher gives general results of drilling in the neighborhood of the applicant's claims.)

Past experience in this area has indicated that very small showings of mineralization are the rule and no pronounced trends or channels exist in the Blue Ribbon or Blue Canyon area. This record and the thinness of the remaining ore-bearing sandstone on Scot, Scotty and Terry claims indicate that Government exploration assistance is not warranted. We do not have any potential targets to explore and any "chance finds" in the area will be very small.

I recommend this application be denied on the basis that it lacks geological merit.

E. L. Newcomb

E. L. Newcomb

IN REPLY REFER TO:

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 3 1954

December 2, 1954 extra

Re: DMEA-3578
Blue Canyon Uranium, Inc.
(Scotty, Terry & Scot Claims)
Mesa County, Colorado
$69,100 - Uranium

Memorandum

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

From: K. L. Newcomb, U. S. Geological Survey

Subject: Recommendation for denial

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I recommend this application be denied on the basis that it lacks geological merit.

E. L. Newcomb

ELNewcomb:hlm
G-12/2/54

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641 Interior

12/1/54 gla

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC - 1 1954

November 30, 1954

Memorandum

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

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

Subject: DMEA Docket No. 3578, Blue Canyon Uranium Inc., P. O. Box 476, Grand Junction, Colorado

I have reviewed the application included in the subject docket and have discussed it with Joseph O. Hosted, representative of the Atomic Energy Commission.

We recommend that the application be referred to the Field Team for investigation and report, and that the Field Team be requested to discuss the application with Ernest R. Gordon, Atomic Energy Commission, Grand Junction, Colorado.

John E. Crawford

John E. Crawford

Attachment

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

November 23, 1954
Subject: DMEA-3578
Re: Exploration Assistance
Scotty & Terry

Blue Canyon Uranium Inc.
c/o Mr. Gould
Denver National Bank Bldg.
Denver, Colorado

Gentlemen:

The receipt of your application dated (undated) for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3578 and referred to the Rare and Miscellaneous 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

60932

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

November 23, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

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 IV.

DMEA - 3578 Blue Canyon Uranium Inc.

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

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

224 New Customhouse
Denver 2, Colorado

November 19, 1954

Memorandum

To: Secretary of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region lV

Subject: Application of Blue Canyon Uranium, Inc. (Uranium)
Scotty, Terry, and Scott groups of claims
Mesa County, Colorado

Enclosed are the original and two copies of an application for DMEA assistance for uranium exploration submitted by Blue Canyon Uranium, Inc. The applicant proposes to explore the property by means of 91 diamond drill holes at an estimated cost of $69,099.50.

Original copy of the application contains a photostat copy of the purchase option but no assignment to the applicant company, Blue Canyon Uranium, Inc. A signed copy of this assignment was requested from the applicant and will be forwarded to you when received.

John F. Shaw
For W. H. King

Enclosures

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 22 1954

224 New Customhouse
Denver 2, Colorado

November 19, 1954

Memorandum

To: Secretary of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Application of Blue Canyon Uranium, Inc. (Uranium)
Scotty, Terry, and Scott groups of claims
Mesa County, Colorado

Enclosed are the original and two copies of an application for DMEA assistance for uranium exploration submitted by Blue Canyon Uranium, Inc. The applicant proposes to explore the property by means of 91 diamond drill holes at an estimated cost of $69,099.50.

Original copy of the application contains a photostat copy of the purchase option but no assignment to the applicant company, Blue Canyon Uranium, Inc. A signed copy of this assignment was requested from the applicant and will be forwarded to you when received.

John F. Shaw
For W. H. King

Enclosures

RDB:mn

cc: Docket (Blue Canyon Uranium, Inc.)
C.O.Mittendorf
Chron.

224 New Customhouse
Denver 2, Colorado

November 19, 1954

Blue Canyon Uranium, Incorporated
725 National Bank Building
Denver, Colorado

Attention: Mr. Gould

Dear Sir:

Reference is made to your application for DMEA aid on the Scotty and Terry groups in Mesa County, Colorado.

A copy of the Agreement and Option, dated June 17, 1954, between Earl L. Hamrick, Francis L. Caldwell, Robert S. Bohrer, and Lawrence Migliaccio, accompanied your application.

Please forward to this office a signed copy, or a photostat of a signed copy, of the Assignment of the Agreement and Option to Blue Canyon Uranium, Incorporated.

When we receive this Assignment we will continue to process your application.

Very truly yours,

John F. Shaw
for W. H. King
Executive Officer, DMEA
Field Team, Region IV

1/17/55

See letter in file from company, dated January 6, 1955, transmitted with Mr. King's memo January 14, 1955, requesting all communications be addressed and channeled through:

Mr. Ira L. Abelow
5420 E. 6th Avenue
Denver, Colorado

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Minerals Administration
RECEIVED
NOV 22 1954
Mining Division
Date Rec'd

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

NOV 12 1954
BUREAU OF MINES
Denver, Colorado

Not to be filled in by applicant

Docket No. 3578.
Metal or Mineral Uranium
Date Received
Estimated Cost $69,100
Participation (Government %)

All correspondence to 725 Denver Nat'l Bank Bldg. c/o Mr Gould.

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: Blue Canyon Uranium Inc., P.O.Box 476, Grand Junction, Colorado
R.S.Bohrer, Pres. 218 S. 17th, Pocatello, Idaho
James D. Nickols, Vice-Pres. Arbon, Idaho
Edwin K. Gage, Sec-Treas, 785 Ebony St., Pocatello, Idaho

(*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 Mesa County, Colorado, Towhship 50 North, Range 17 West, Sections 19,20,29,30 Scotty #1, Scotty #2a, Scotty #3, Scotty #4, Scotty #5, Terry #1, Terry #2, Terry #3, Terry #4, Terry #5, Terry #6, Terry #7, Terry #8a, Scot #6, Scot #7, Scot #8.

(*b*) State any mine name by which the property is known. Scotty #1-6. Terry #1-8a

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Owner of three (Locator), purchaser under contract of thirteen (13) claims

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

(*e*) If you own the land, describe any liens or encumbrances on it None

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

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

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

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

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

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

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

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

(*c*) The work will start within 45 days and be completed within 6 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated _____, 195__

Blue Canyon Uranium, Inc.
(Applicant)

By Robert S. Bohn

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

Blue Canyon Uranium, Inc. Grand Junction, Col.

Department of the Interior
Bureau of Mines
Mineral Administration
NOV 22 1954

Supplement to Application for aid in an Exploration Project, Pursuant to DMEA Order 1, Under the Defense Production Act of 1950, as Amended

3. Applicant's Property Rights

(a) Legal Description- The claims are all located in Mesa County, Colorado, Township 50 North, Range 17 West, Sections 19,20,29,30. They are known as the Scotty 1, Scotty 2a, Scotty 3, Scotty 4, Scotty 5, Terry 1, Terry 2, Terry 3, Terry 4, Terry 5, Terry 6, Terry 7, Terry 8a, Scot 6, Scot 7, Scot 8.

(b) Mine names -The mine names for the property are as follows;- SCOTTY 1-5, TERRY 1-8a, SCOT 6-7-8

(c) Interest in property- Owner under purchase agreement.

(d) Documents - Purchase Agreement submitted herewith Exhibit ____.

(e) Liens and encumberances- None other thanincluded in above.

(f) Unpatented Claims-Book and Page Numbers

Claim Name	Book	Page	Amended Location Notices Book	Amended Location Notices Page
Scotty 1	606	460	617	582
Scotty 2a	617	585		
Scotty 3	606	462	617	583
Scotty 4	617	586		
Scotty 5	606	464	617	584
Terry 1	607	52	617	571
Terry 2	607	53	617	572
Terry 3	607	54	617	573
Terry 4	607	55	617	575
Terry 5	607	56	617	575
Terry 6	607	57	617	576
Terry 7	607	58	617	577
Terry 8	617	578		
Scot 6	617	579		
Scot 7	617	580		
Scot 8	617	581		

Blue Canyon Uranium, Inc. Grand Junction, Col.

Supplement to Application for aid in an Exploration Project, Pursuant to DMEA Order 1, Under the Defense Production Act of 1950, as Amended

4. Physical Description

(a) The nature of the terrain is shown in Exhibit (1), "Calamity Mesa Quadrangle", published by the Geological Survey. Exploratory cuts have been made on each claim at points indicated on Exhibit (2). Bull-dozed roads to these cuts are also shown on Exhibit (2). Limited drift mining operations have been carried out on Scotty No. 1 Claim. Approximately ten (10) tons of commercial ore have been stock-piled out of two drift tunnels. All of these operations belong to Blue Canyon Uranium, Inc. All workings are easily accessible by indicated roads.

(b) No ore has been shipped and no estimate of reserves can be made until the claims are drilled. However evidence of uranium ore occurance has been obtained over a good portion of the claim area group. Reference to Exhibit (3)"Report on Scotty and Terry Claims, Outlaw Mesa, Colorado" by D.V.Watrous-E.M.R.Anderson, Geologist, dated July 7, 1954, under Ore Occurances. In addition to facts presented on Scotty No. 1 and Terry No. 4 and 5, the Scotty No. 1 drift mined a mineralized bed ranging from 12" to 18" in thickness and ran from 0.30% to 0.84% uranium oxide. Geiger Counter readings of sufficient magnitude to indicate commercial ore were obtained on Scotty No. 5, Scotty No. 7 and Terry No. 6 claims.

(c) The Morrison is exposed over a good portion of the claims and where not exposed may be covered by 30 to 50 feet calcareous sandstone. In the geological report by Watrous and Anderson (Exhibit (2)) the thickness of the Morrison formation down to the Slick Rock (Entrada) is estimated at 450 feet. In a geological report of the general area by Stokes and Fisher, Exhibit (4) "Vanadium Deposits in the Gateway Area", the thickness of the Morrison at nearby Calamity Mesa is 260 feet of Upper Morrison and 410 feet of Lower Morrison. Assuming the difference in total Morrison thickness of 670 feet at Calamity and 450 feet at Blue Canyon is due to greater erosion at Blue Canyon, 220 feet of Upper Morrison would have been eroded away leaving 40 feet of Upper Morrison and 410 feet of Lower Morrison. Stokes and Fisher, Exhibit (4), note that most mineralization occurs within 50 feet of the top of the Lower Morrison. Thus at Blue Canyon would occur from the surface to depth of 90 feet. The many surface occurances of uranium ore support this reasoning, cross section sketch (Exhibit (5)). Where calcareous sandstone overlies the Morrison, a hole 150 feet deep would be adequate to test both the Upper and Lower Morrison. For proper geologic control and test of Slick Rock occasional 450 foot holes would be required.

(d) A good all weather road extends north and south from the claims a distance of approximately 10 miles to Colorado State Highway 141. From this junction it is about 6 miles south to Gateway and about 45 miles to Grand Junction. The cost of road building for drilling sites and mining is slight. Ore buying stations are located at Uravan, Colorado, a distance of 40 miles, and at Grand Junction, Colorado, a distance of 55 miles from the property.

Blue Canyon Uranium,Inc. Grand junction, Col.

Supplement to Application for aid in an Exploration Project, Pursuant to DMEA Order 1, Under the Defense Production Act of 1950, as Amended

4. Physical Description -cont.-

(e) Manpower, supplies and equipment to support mining operations are available from Gateway, Uravan and Grand Junction. Water from Blue Creek is accessible for mining. This may be hauled over a distance of three miles on the present road, however catchment basins may be constructed to obtain water from occasional rains. Electric Power is not available and will have to be generated using mobile field generators.

5. The Exploration Project.

(a) We wish to explore for Uranium.

(b) As shown in Exhibit (2), the exploration project shall consist of (diamond) drilling eighty (80) 150-foot holes to test the most likely mineralization in the Morrison and eleven (11) 450-foot holes to test the Slick Rock deeper possibilities. In so far as practical all of the holes are located on a 400 foot grid interval oriented in such a manner as to reduce road building to a minimum. No drill-site is located closer than 200 feet from the outside perimeter of the claim group. The 150-foot hole locations are shown in Blue in Exhibit (2) and the 450-foot holes are shown in Red.

Nine (9) of the 150-foot holes will be core-drilled. These are indicated by Blue Squares (Exhibit 2). The seventy-one (71) non-core 150-foot holes are indicated by Blue Squares. Only two (2) 450-foot holes will be core-drilled. These two (2) holes are indicated by Red Squares.

circles

Radiometric probing will be made of all holes and results calibrated against assays made of cores and an evaluation report provided.

(c) The work will start within 45 days and be completed within six (6) months from date of exploration project contract.

(d) Will engage Edwards Mining & Exploration Co.,Inc, Denver Colorado to do all the drilling and the "Geophysical Core Drilling Company" to do all Supervision, Radiometric Probing, Geological Consulting and Evalutaion Report after drilling.

6. Estimate of Costs.

(a) Independent Contracts. All work will be let to Independent Contractors as follows;-

(1) Drilling	Footage	Price per ft.	Total
80 150-foot holes			
9 core drilled	1,350	$ 2.85	$ 3,847.50
71 non-core drilled	10,650	2.45	26,092.50
11 450-foot holes			
2 core-drilled	900	4.95	4,455.00
9 non-core drilled	4,050	3.85	15,592.50
Totals	16,950		$ 49,987.50
Estimated Stand-by time, 1 hour per hole		$12.00 per hr	1,092.00

Blue Canyon Uranium, Inc. Grand Junction, Col.

Supplement to Application for aid in an Exploration Project, Pursuant to DMEA Order 1, Under the Defense Production Act of 1950, as Amended.

6. Estimate of Costs -cont-

(a) Independent Contracts - cont -	Footage	Price per ft.	Total
2. Estimated Reaming and Casing of holes to prevent cave in, poor core recovery and sticking tools 2000 feet at $3.50 per foot		$3.50	$ 7,000.00
Total Drilling			$ 58,079.50
3. Additional Access Roads-Estimated Bulldozing 364 hours rental Bulldozer		$12.50	4,550.00
4. Additional Surveying of drill locations 91 Locations at		$20.00	1,820.00
5. Supervision, radiometric probing, geological counseling and evaluation report after drilling Estimated 62 Working Days-- per day		$75.00	4,650.00
Total			$ 69,099.50

(b) Labor, supervision, consultants-None other than included in above.

(c) Operating Materials and supplies-None other than included in above.

(d) (e) (f) (g) (h) None other than included in above.

Summary of estimated cost, including drilling, coring, assays, preparation of additional access roads, surveying in drill sites and hole locations, supervision, radiometric probing, counseling, evaluation reports and all possible contingencies;-

Total estimated costs $69,099.50 divided by 16,950 feet of drilling equals $4.07 2/3 per foot for completed turn-key operation.

Agreement and Option

ABELOW FOR DMEA

THIS AGREEMENT entered into this 17th day of June, 1954 between Earl L. Hamrick and Francis L. Caldwell, hereinafter called H & C, and Robert S. Bohrer, hereinafter called Bohrer, and Lawrence M. Miniaccio, hereinafter called Miniaccio.

DEPARTMENT OF THE INTERIOR
Bureau of Mines
NOV 22 1954

WHEREAS H & C have located certain mining claims known and recorded as the Scotsys 1 to 5 and the Terrys 1 to 9 in the NW ¼ Sec. 30, N½Sec.19, SW¼Sec.29 and SE¼Sec.17, T.50n., R.17W., New Mexico Principal Meridian in the Ouray Creek Mining District of Mesa County, Colorado

BLOE

WHEREAS H & C are desirous of selling said claims to Bohrer and Miniaccio subject to certain conditions below outlined.

NOW THEREFORE it is mutually agreed between the parties hereto that H & C will deliver title to above said claims to Bohrer provided

1. Bohrer and Miniaccio shall pay to H & C the sum of Twenty Five Hundred Dollars ($2,500) on or before July 15, 1954.

2. Bohrer shall cause to be formed a mining company to which he shall sell and convey all of his rights and interests in above claims, including the rights given to him under this option, for the purpose of exploring and developing said claims. Said company shall be obligated to pay and deliver to H & C the following further considerations:

A. The sum of Ten Thousand and Five Hundred Dollars ($10,500.00) to be paid from the first monies obtained by a public issue of stock of above said mining company.

B. Three Hundred Thousand Shares of the common stock at one cent per share issue price or sixty thousand shares of the common stock at five cents per share issue price, in said mining company, fully paid and non assessable, to be issued to H & C or their designees.

C. Said mining company shall employ either or both H & C to assist in developing and exploring above said mining claims at standard rates of pay prevailing in the area.

It is mutually understood and agreed that the terms and conditions of this agreement and option shall be binding upon the administrators, executors, heirs and assigns of all parties hereto and that this agreement and option may be assigned by any or all of the parties hereto as far as their respective interests are concerned.

This agreement and option is given in consideration of the payment of the sum of one dollar ($1.00) by Bohrer and Miniaccio to H & C, the receipt of which is hereby acknowledged, and other good and valuable considerations the covenants of which are above outlined.

IN WITNESS WHEREOF the undersigned have hereto set their hands and seals the day, month, and year first above written.

SIGNED:

Earl L. Hamrick
Earl L. Hamrick

Francis L. Caldwell
Francis L. Caldwell

Lawrence M. Miniaccio
Lawrence M. Miniaccio

Robert S. Bohrer
Robert S. Bohrer

James D. Huckels

ABELOW FOR DMEA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
NOV 22 1954

ESCROW INSTRUCTIONS

Adams, Eachman and Traylor
Attorneys at Law
Grand Junction, Colorado

Gentlemen:
The undersigned hereunto requests that you act as escrow holder of the following instruments deposited with you the 15th day of July, 1954, to-wit.

1. A signed copy of option executed by the undersigned to Robert G. Bohrer & Lawrence Vigliaccio dated June 17, 1954, for the sale and purchase of twenty (13) Lode Mining Claims known as the Scottys 1 to 5 and Terrys 1 to 8

2. A quit claim deed signed by the undersigned conveying Scottys 1 to 5 and Terrys 1 to 8 to Robert G. Bohrer of Pocatello Ida.

You are instructed to hold said deeds in escrow until you have received from the optionees or their assigns, the sum of ten thousand five hundred dollars ($10,500), which sum is to be paid from the sale of the public issue of stock in the corporation or corporations to be organized to finance the purchase of said properties, and the delivery of three hundred thousand shares of the capital stock of said company or companies based upon a one cent per share issue price or fifty thousand shares based upon a five cent per share issue price, in said mining company or companies fully paid and non-assessable, to be issued to the undersigned or their designatees.

On compliance with the above provisions, you are instructed to deliver said deeds to the grantee named above or his designated agent.

If the above payments are not made within six (6) months from the date hereof, you are instructed to return said deeds to the grantors unless instructed otherwise by said grantors.

IN WITNESS HEREOF we have signed our names this 15th day of July, 1954.

Carl L. Hamrick
Carl L. Hamrick

Francis L. Caldwell
Francis L. Caldwell

CERTIFIED COPY

STATE OF COLORADO
COUNTY OF MESA } ss.

№ 577

I, Annie M. Dunston

County Clerk and Recorder in and for said County and State, do hereby certify that the within and foregoing is a full, true and correct copy of Location Certificate

No. 612746 as it appears of record in my office in Book 617 at Page 580.

WITNESS my hand and official seal at Grand Junction, Colorado, this 26 day of October, 1954.

Issued to Blue Canyon Min. Co

Annie M. Dunston
County Clerk and Recorder, Mesa County

Fee: $ 2.5

By
Deputy

Book 617 Page 580 Recorded at 11:59 o'clock A.M. Sep. 14, 1954
Reception No. 612746 Annie M. Dunston, Recorder

No. 162. LOCATION CERTIFICATE—Lode Claim.
—Bradford-Robinson Ptg. Co., Mfrs. Robinson's Legal Blanks, 1834-46 Stout St., Denver, Colorado

KNOW ALL MEN BY THESE PRESENTS, That We, J. D. Nuckels, Robert Bohrer, Edwin K. Gage, Earl L. Hamrick, and Francis L. Caldwell

have located the Scot No. # 7 lode mining claim, and by this certificate, and by right of discovery and location, claim 1500 feet, linear and horizontal measurement along the vein thereof, with all its dips, angles and variations as allowed by law 623 feet on said vein running N 25 E from the center of the discovery Cut and 877 feet running S 25° W from the center of the discovery Cut, together with 300 feet on each side of the middle of said vein at the surface, and all veins, lodes, ledges, deposits and surface ground within the lines of said claim, situate in Gateway Mining District, County of Mesa, and State of Colorado and described by metes and bounds as follows, to-wit:

Beginning at Corner No. 1 Beginning at the S. W. corner, whence the S. W. corner, of Section 20, T 50 N, R 17 W of N.M.O.M., bears approximately N 42 30 E, 1580 ft., thence N 25 E, 750 ft., to W S C, thence N 25 E, 750 ft., to N. W. corner, thence S 65° E, 600 ft. to N.E. corner S 25 W, 750 ft. to E S C, thence S 25 W, 750 ft. to S.E. corner, thence N 65 W, 600 ft. to S. W. corner, The point of beginning.

Said lode was discovered on the 6th day of August, A. D. 19 54
and located on the 6th day of August, A. D. 19 54
Dated this 13th day of September, A. D. 19 54

J. D. Nuckels [SEAL]
Robert Bohrer [SEAL]
Edwin K. Gage [SEAL]
Earl L. Hamrick [SEAL]
Francis L. Caldwell [SEAL]
By H D Clark [SEAL]

NIELSEN BLUE PRINT, INC.
GRAND JUNCTION, COLO.

Recorded at 12:00 o'clock P.M. Sep. 14, 1954 Book 617 Page 581
Reception No. 612747 Annie M. Dunston, Recorder

No. 162. LOCATION CERTIFICATE—Lode Claim.
—Bradford-Robinson Ptg. Co., Mfrs. Robinson's Legal Blanks, 1824-46 Stout St., Denver, Colorado

KNOW ALL MEN BY THESE PRESENTS, That We, J.D. Nuckels, Edwin K. Gage, Robert Bohrer, Earl L. Hamrick and Francis L. Caldwell

have located the Scot No # 8 lode mining claim, and by this certificate, and by right of discovery and location, claim 1500 feet, linear and horizontal measurement along the vein thereof, with all its dips, angles and variations as allowed by law 50 feet on said vein running N 25 00 E from the center of the discovery Cut and 1450 feet running S 25 00 W from the center of the discovery Cut, together with 300 feet on each side of the middle of said vein at the surface, and all veins, lodes, ledges, deposits and surface ground within the lines of said claim, situate in Gateway Mining District, County of Mesa, and State of Colorado and described by metes and bounds as follows, to-wit:

Beginning at Corner No. 1 Beginning at S. W. Corner, whence the S. W. Corner of Section 20, T 50 N, R 17 W, N.M.P.M., Bears # N 21° 35 ft. E, 2105 ft., thence N 25° E, 750 ft. to W. S. Corner, thence N 25° E, 750 ft. to N. W. Corner, thence S 65 E, 600 ft. to N. E. Corner, thence S 25 W, 750 ft. to E. S. C., thence S 25 W, 750 Ft. to S. E. Corner, thence, N 65 W, 600 ft. to S. W. Corner. The point of beginning.

Said lode was discovered on the 6th day of August, A. D. 19 54
and located on the 6th day of August, A. D. 19 54
Dated this 13th day of September, A. D. 19 54

J. D. Nuckels [SEAL]
Edwin K. Gage [SEAL]
Robert Bohrer [SEAL]
Earl L. Hamrick [SEAL]
Francis L. Caldwell [SEAL]
By H D Clark [SEAL]

NIELSEN BLUE PRINT, INC.
GRAND JUNCTION, COLO.

Recorded at 11:58 o'clock A.M. Sep. 14, 1954 Book 617 Page 579
Reception No. 612745 Annie M. Dunston, Recorder

No. 162. LOCATION CERTIFICATE—Lode Claim.
—Bradford-Robinson Ptg. Co., Mfrs. Robinson's Legal Blanks, 1824-46 Stout St., Denver, Colorado

KNOW ALL MEN BY THESE PRESENTS, That We, J. D. Nuckels, Robert Bohrer, Edwin K. Gage, Earl L. Hamrick, and Francis L. Caldwell

have located the Scot No # 6 lode mining claim, and by this certificate, and by right of discovery and location, claim 1500 feet, linear and horizontal measurement along the vein thereof, with all its dips, angles and variations as allowed by law 100 feet on said vein running N 25 E from the center of the discovery Cut and 1100 feet running S 25° 00 ft. W from the center of the discovery Cut, together with 300 feet on each side of the middle of said vein at the surface, and all veins, lodes, ledges, deposits and surface ground within the lines of said claim, situate in Gateway Mining District, County of Mesa, and State of Colorado and described by metes and bounds as follows, to-wit:

Beginning at Corner No. 1 Beginning at S. W. Corner, whence, the S. W. Corner of Section 20, T 50 N, R 17 W, N.M.P.M., Bears approximately S 79° 50 ft. W, 1550 ft., thence N 25 E, 750 ft. to W S C, thence N 25 E, 750 ft. to N. W. corner, thence, S 65° E, 600 ft. to N. E. corner, thence S 25 W, 750 ft. to E S C., thence S 25 W, 750 ft. to S. E. corner, N 65° W, 600 ft. to S. W. corner. The point of beginning.

Said lode was discovered on the 6th day of August, A. D. 19 54
and located on the 6th day of August, A. D. 19 54
Dated this 13th day of September, A. D. 19 54

J. D. Nuckels [SEAL]
Robert Bohrer [SEAL]
Edwin K. Gage [SEAL]
Earl L. Hamrick [SEAL]
Francis L. Caldwell [SEAL]
By H D Clark [SEAL]

NIELSEN BLUE PRINT, INC.
GRAND JUNCTION, COLO.

Book 617 Page 578 Recorded at 11:57 o'clock A.M. Sep. 14, 1954
Reception No. 612744 Annie M. Dunston, Recorder

No. 162. LOCATION CERTIFICATE—Lode Claim.
—Bradford-Robinson Ptg. Co., Mfrs. Robinson's Legal Blanks, 1924-46 Stout St., Denver, Colorado

KNOW ALL MEN BY THESE PRESENTS, That We, Earl L. Hamrick and Francis L. Caldwell

have located the Terry No. # 8-A lode mining claim, and by this certificate, and by right of discovery and location, claim 1500 feet, linear and horizontal measurement along the vein thereof, with all its dips, angles and variations as allowed by law 145 feet on said vein running N 65 00 W from the center of the discovery Cut and 1355 feet running S 65 00 E from the center of the discovery Cut, together with 300 feet on each side of the middle of said vein at the surface, and all veins, lodes, ledges, deposits and surface ground within the lines of said claim, situate in Gateway Mining District, County of Mesa, and State of Colorado and described by metes and bounds as follows, to-wit:

Beginning at Corner No. 1 Beginning at S. W. Corner, whence the S. W. Corner of Section 20, T 50 N, R 17 W, N.M.P.M., Bears approximately S 57° 15ft. W, 2820 ft., thence N 25 E, 600 ft. to N. W. Corner thence, S 65 E, 750 ft. to N S C., thence S 65 E, 269 ft. to Wit. corner, thence S 65 E, 481 ft. to N. E. Corner, thence S 25 W, 600 ft. to S. E. corner, Thence, N 65 W, 186 ft. to Wit. corner, thence N 65 W, 564 Ft. to S S C, thence N 65 W, 750 ft. to S. W. Corner. The point of beginning.

Said lode was discovered on the 6th day of August, A. D. 19 54
and located on the 6th day of August, A. D. 19 54
Dated this 13th day of September, A. D. 19 54

Earl L. Hamrick [SEAL]
By H D Clark [SEAL]
Francis L. Caldwell [SEAL]
By H D Clark [SEAL]
[SEAL]
[SEAL]

Exhibit (3)

REPORT ON

SCOTTY AND TERRY URANIUM CLAIMS

OUTLAW MESA--COLORADO

BY

D.V. WATROUS-E.M.

R.ANDERSON-GEOLOGIST

July 7, 1954

CERTIFIED COPY

№ 575

STATE OF COLORADO
COUNTY OF MESA } ss.

I, Annie M. Dunston

County Clerk and Recorder in and for said County and State, do hereby certify that the within and foregoing is a full, true and correct copy of ~~Amend~~ Location Certificate No. 612744 as it appears of record in my office in Book 617 at Page 578.

WITNESS my hand and official seal at Grand Junction, Colorado, this 26 day of October, 1954.

Issued to Blue Canyon Uran Co

Annie M Dunston
County Clerk and Recorder, Mesa County

Fee: $ 1.25

By _____
Deputy

CERTIFIED COPY

№ 576

STATE OF COLORADO
COUNTY OF MESA } ss.

I, Annie M Dunston

County Clerk and Recorder in and for said County and State, do hereby certify that the within and foregoing is a full, true and correct copy of Location Certificate No. 612745 as it appears of record in my office in Book 617 at Page 579.

WITNESS my hand and official seal at Grand Junction, Colorado, this 26 day of October, 1954.

Issued to Blue Canyon Uran Co

Annie M Dunston
County Clerk and Recorder, Mesa County

Fee: $ 25¢

By _____
Deputy

CERTIFIED COPY

№ 578

STATE OF COLORADO
COUNTY OF MESA } ss.

I, Annie M. Dunston

County Clerk and Recorder in and for said County and State, do hereby certify that the within and foregoing is a full, true and correct copy of Location Certificate No. 612747 as it appears of record in my office in Book 617 at Page 581.

WITNESS my hand and official seal at Grand Junction, Colorado, this 26 day of October, 1954.

Issued to Blue Canyon Uran Co

Annie M Dunston
County Clerk and Recorder, Mesa County

Fee: $ 25

By _____
Deputy

LOCATION AND ACCESSIBILITY

The Scotty and Terry claims are located principally within Section 20, T 50 N, R 17 W, Mesa County, Colorado. They are on the extreme east edge of Outlaw Mesa and bounded by the Blue Creek Canyon on the east.

A good all-weather road extends north and west from the claims a distance of approximately ten miles to Colorado State Highway 141. From this junction it is about six miles south to Gateway and about 45 miles north to Grand Junction. The cost of road building for drilling sites and mining is slight. Ore buying stations are located at Uravan, Colorado, a distance of 48 miles and at Grand Junction, Colorado, a distance of 55 miles from the property.

CLIMATE AND VEGETATION

In this area the general elevation is slightly over 6,000 ft. Topographically, the claims are situated on a mesa, incised by canyons up to 200 ft. deep. The climate of this area is generally temperate with slightly more rainfall than is found over the Colorado Plateau. Vegetation consists of scrubby, coniferous trees and brush. Water for mining is accessible in Blue Creek, which may be hauled over a distance of three miles on the present road, however, catchment basins may be constructed to obtain water from occasional rains.

LEGAL STATUS

These claims are staked on an area formerly withdrawn by the A.E.C., and which was released by the A.E.C. on June 14, 1954. On release date the claims were staked and recorded by Earl Hemrich, with the exception of the Scotty #1 claim which was obtained by Earl Hemrich from a previous owner. The claim boundaries observed in part by Mr. Anderson have been properly marked and do not appear to conflict with any other adjoining claims. The claims are newly staked and should qualify for the A.E.C. bonus. The oil and gas lease status under A.E.C. Circular Seven should be examined.

GEOLOGY

These claims have been located entirely on a white to light tan sandstone mapped by the U.S.G.S. as Morrison formation. The under-lying Slick Rock formation may be observed in the Blue Creek Canyon to the east, and will underlie the area at a depth up to 450 feet. Structurally the sandstones are nearly horizontal, however, on the east side of Blue Creek Canyon, the regional dip is to the southwest. No major faulting was noted in the area.

These claims are situated within the Uravan mineral belt and on the favorable Morrison formation. A slight amount of Carbonaceous material accompanies the ore. However, the uranium mineralization seems to be localized by the vanadium ore bodies. Yellow limonite stains on the outcrops are associated with the uranium and vanadium. Fossil bones showing some radioactivity were reported to have been found in the lower portions of the Morrison as float.

ORE OCCURRENCES

Considerable uranium ore is now being produced within four miles northwest of the property from the Calamity and Outlaw Mines. Production from this area is about 180 tons per day over the past eight years. Within one mile west of the property extensive mining is being done, similarly within two miles southeast of the property.

The Hanson #2 Mine indicated on the map, ¼ mile north of the claim boundaries, has been in production up until a few months ago and produced about 500 tons of .8% U_3O_8 ore over a period of four months. This mine was sub-leased by Elmer Nielsen from Climax Uranium Co. which in turn leased from the A.E.C. This information was supplied by Earl Hamrich.

Within the Scotty #1 claim, two ore occurrences were noted, which may be a continuous ore body about 300 feet long and may contain as much as 300 tons of ore. These occurrences trend northwesterly and may tie in with a fifteen foot channel noted across a small canyon to the northwest on Climax Uranium ground. The ore outcrop on the northwest slope of the ridge is up to two feet thick and covered by about 30 feet of calcareous sandstone, and may be as much as ten feet horizontal in width. Grab samples taken by Earl Hamrich from a small stock pile of ore located near the northwest outcrop were reported by him to contain 2.47% vanadium and .80% U_3O_8. This ore contains visible carnotite and is typical vanadium ore which gives a good count with a Geiger counter. The southeast ore outcrop exposes an eight to ten inch streak of vanadium ore in cross-bedded

sandstone, it is also overlain by about 30 feet of calcareous sandstone. Values reported by Earl Hamrich were .8% to 4.0% vanadium and no uranium. The horizontal width of this ore is less than 10 ft.

Although no carnotite was visible, a slight count was given by the Geiger counter. A small vanadium occurrence was noted on the Terry #5 and Terry #4, showing about six inches of vanadium ore with no visible carnotite and but slight count on the Geiger counter.

No evidence of previous core drilling was noted on the property although extensive drilling has been done by the A.E.C. on the area adjoining to the north and west. The reason for the A.E.C. not drilling the area of the property during its withdrawal should be investigated.

RECOMMENDATIONS

The development of these claims must be based upon a drilling program. On the basis of ore occurrences on the Scotty #1 and possibly on the Terry #4 and #5 claims, we recommend that a compressor be installed on the property for possible development and mining of this ore.

We also recommend that a plane table map be made of the property showing claim corners, ore occurrences, evidence of channeling, rolls and other geological information so that an intelligent drilling program can be outlined. Following this we recommend that a contract drilling program supervised by an engineer be initiated to explore areas outlined by the plane table work. It appears that the drilling

program should include a few holes up to 400 feet in depth so as to also explore lower ore horizons which have produced on adjoining properties; a mining program on new ore will have to await the results of the drill [illegible]

Respectfully submitted by,

Paul A. Anderson
Boyertown, Calif.

E. V. Watrous
E. V. Watrous, M.D.

My enclosed

SUMMARY

The Terry and Scotty groups consist of ten adjoining claims located on the east portion of Outlaw Mesa, Mesa County, Colorado. Ore outcroppings on the Scotty #1 claim indicate a possibility of 300 tons of uranium ore immediately accessible for mining. The remainder of the claims require drilling to explore for additional bodies. The claims are readily accessible by good roads for immediate exploration and operation.

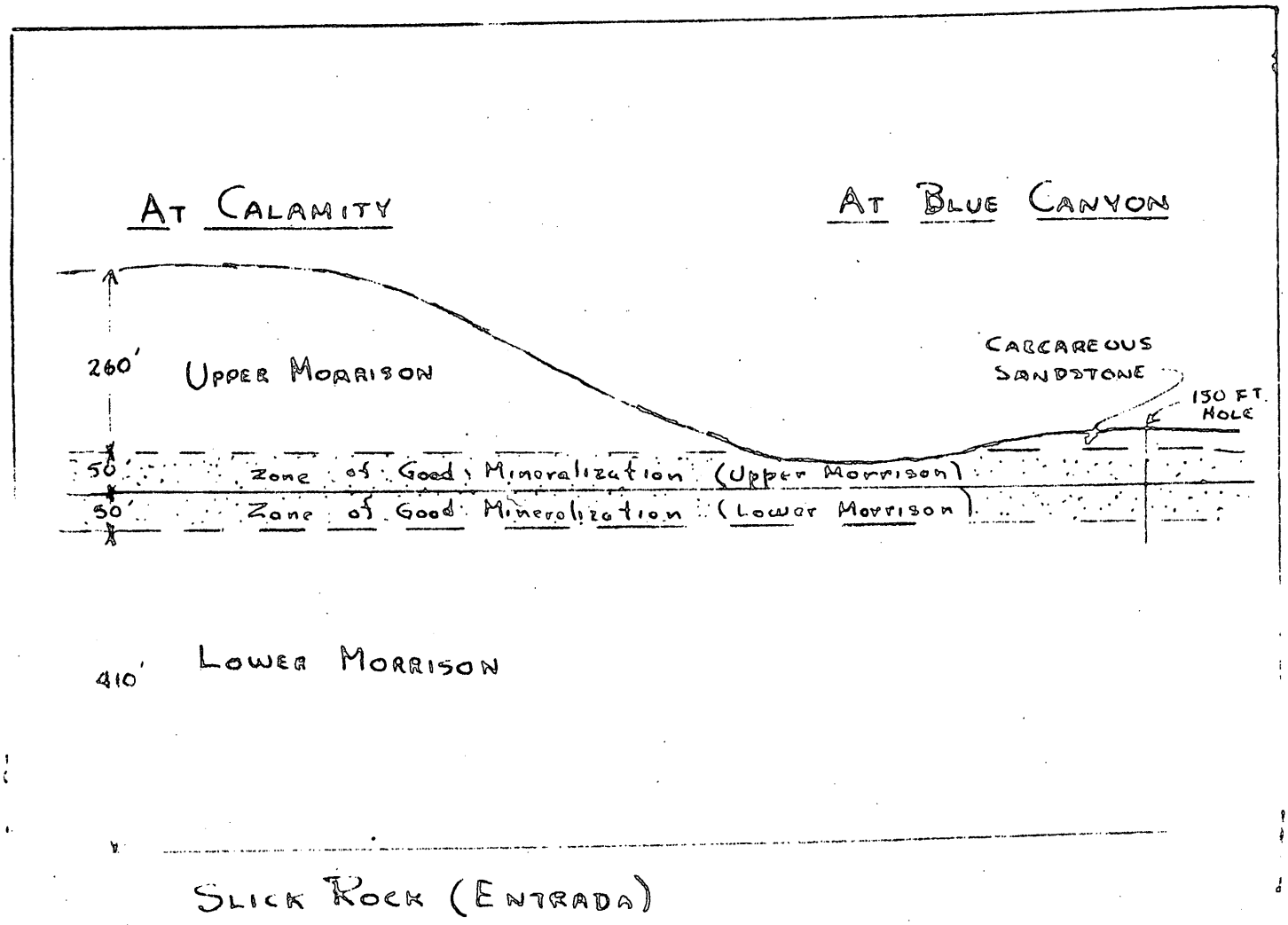


Exhibit (5)

Cross-sectional Sketch Showing Relation of Geologic Column at Calamity Mesa & Blue Canyon

DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

OFFICIAL BUSINESS

COLO.

Mr. J. L. Chambers, Chief

Contract Administration & Audit Div.

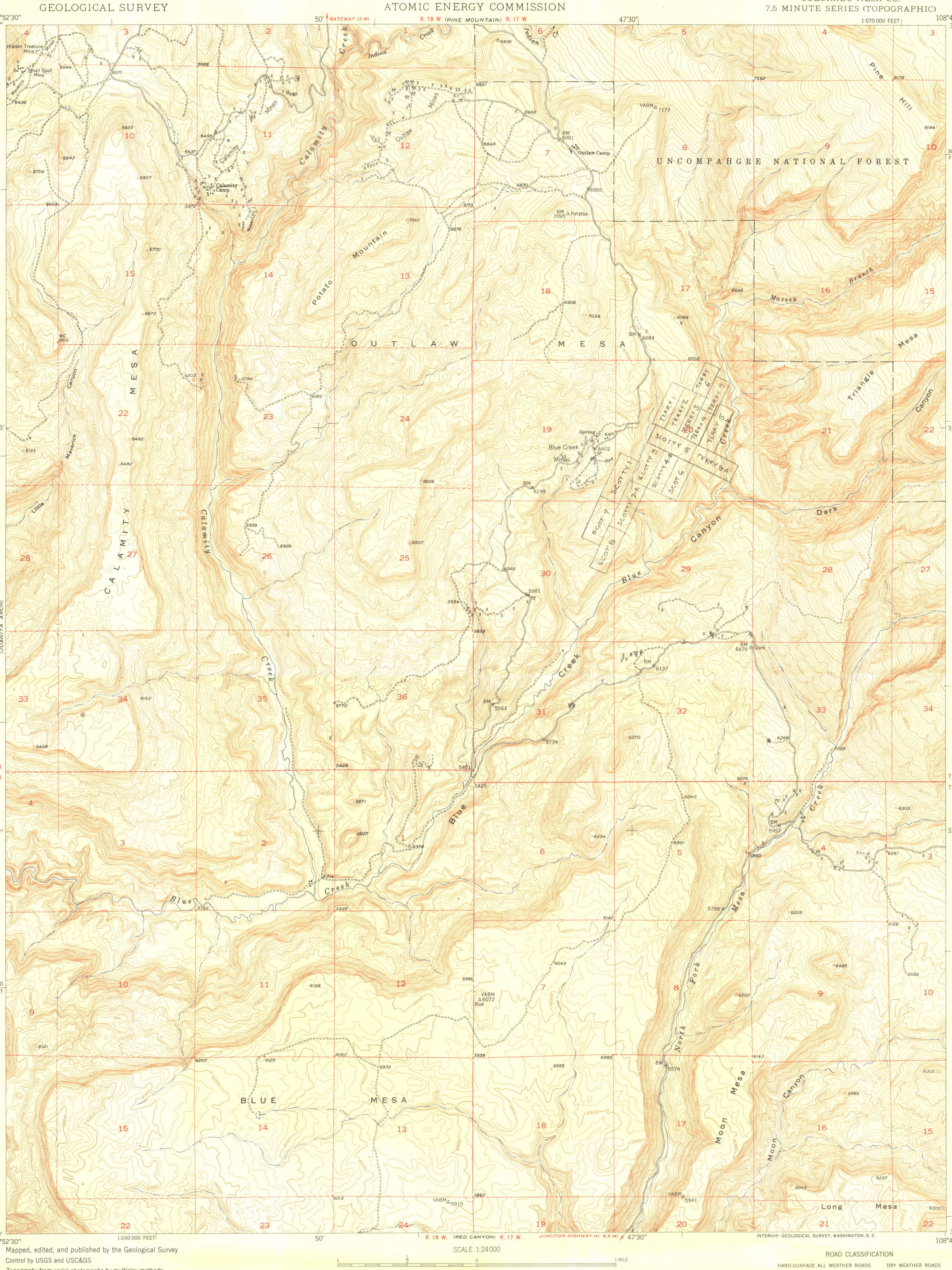
DMEA -- Interior Bldg.

Washington 25, D. C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
ATOMIC ENERGY COMMISSION

CALAMITY MESA QUADRANGLE
COLORADO-MESA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by multiplex methods, and by plane-table surveys
Aerial photographs taken September 1947. Field check 1949

Polyconic projection. 1927 North American datum
10,000-foot grid based on Colorado coordinate system, central zone

Dashed land lines indicate approximate location
Land lines unsurveyed in part of T. 49 N.–R. 18 W. and T. 50 N.–R. 18 W.

Unchecked elevations are shown in brown

15°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1949

SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

FOR SALE BY U. S. GEOLOGICAL SURVEY, FEDERAL CENTER, DENVER, COLORADO OR WASHINGTON 25, D. C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

HARD-SURFACE ALL WEATHER ROADS		DRY WEATHER ROADS
Heavy-duty	4 LANE / 2 LANE	Improved dirt
Medium-duty	4 LANE / 2 LANE	Unimproved dirt

Loose-surface, graded, or narrow hard-surface

U. S. Route State Route

CALAMITY MESA, COLO.
N3830—W10845/7.5

EDITION OF 1950

NOTES: Locations of roads, stream, & reservoirs are approximate.
There are no apparent legal conflicts

EXPLORATION DRILL-SITES: 400 FEET GRID-SPACING

- 150-foot Hole Non-core Drilling
- 150-foot Hole Core-Drilling
- 450-foot Hole Non-core Drilling
- 450-foot Hole Core-Drilling

ORE CUTS: ⊗

EXISTING ACCESS ROADS:

CLAIMS HELD
BY THE
BLUE CANYON URANIUM COMPANY
ON
OUTLAW MESA - MESA CO. - COLO.
SEC. 20 - T50N - R17W - N.M.P.M.
STADIA SURVEY BY CLARK ENGINEERING CO.
8-3-54 TO 8-18-54

SIGNED H D Clark
COLORADO REG. LAND SURVEYOR

SCALE 1" = 300' 8-19-54

GHP

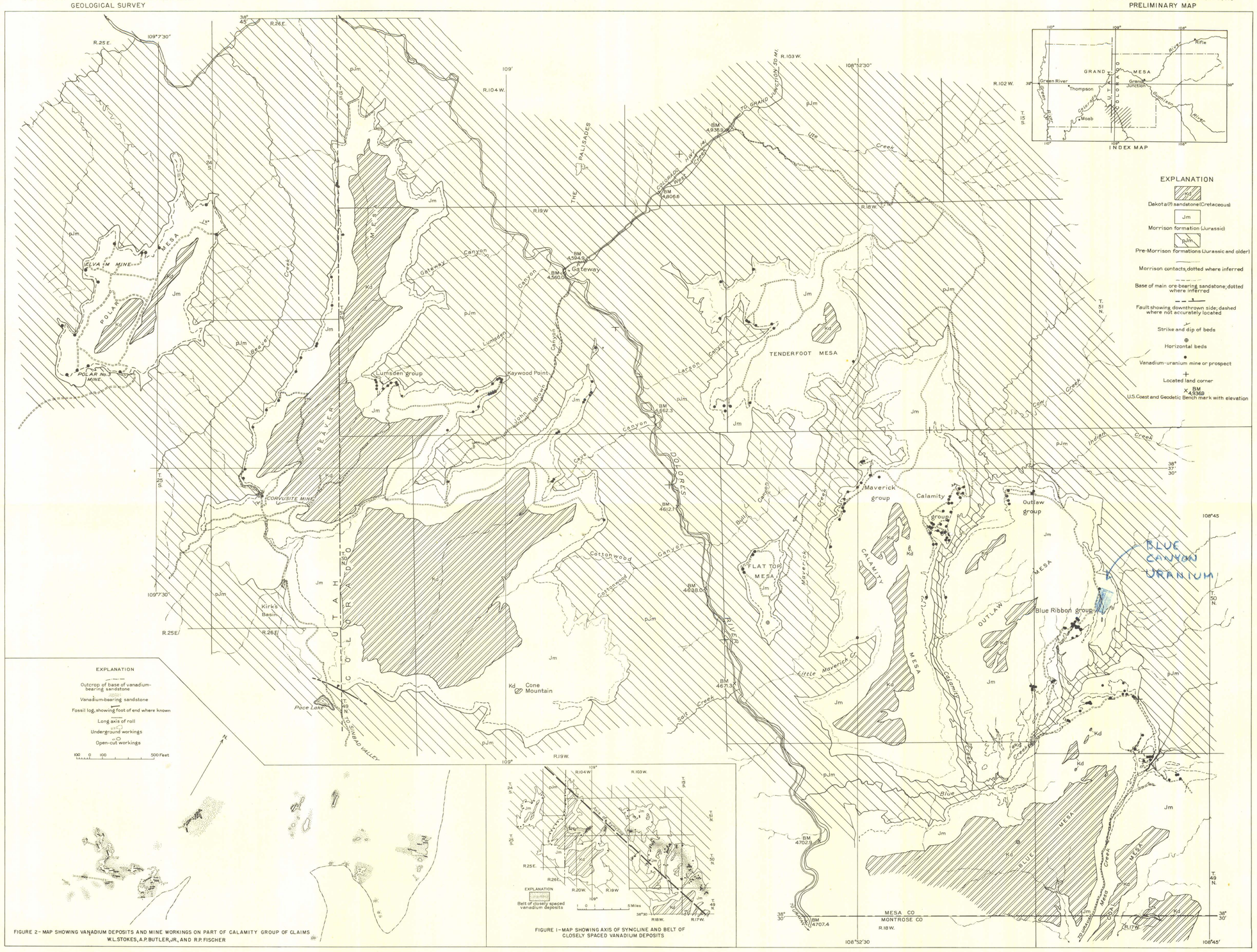


FIGURE 2 - MAP SHOWING VANADIUM DEPOSITS AND MINE WORKINGS ON PART OF CALAMITY GROUP OF CLAIMS
W.L. STOKES, A.P. BUTLER, JR., AND R.P. FISCHER

FIGURE 1 - MAP SHOWING AXIS OF SYNCLINE AND BELT OF CLOSELY SPACED VANADIUM DEPOSITS

Base from aerial photographs, land survey divisions from General Land Office plats adjusted to observed land corners as plotted on photographic base.

0 1 5 Miles

Geology by W. L. Stokes, R.T. Russell, R.P. Fischer, and A.P. Butler, Jr.
1945

GEOLOGIC MAP OF THE GATEWAY AREA, MESA COUNTY, COLORADO, AND THE ADJOINING PART OF GRAND COUNTY, UTAH

VANADIUM DEPOSITS IN THE GATEWAY AREA, MESA COUNTY, COLORADO, AND THE ADJOINING PART OF GRAND COUNTY, UTAH

By W. L. Stokes and R. P. Fischer

In the course of investigation of the domestic vanadium resources by the Geological Survey, United States Department of the Interior, the vanadium ("carnotite") deposits in the Gateway area, Mesa County, Colo., and in the adjoining part of Grand County, Utah, were examined and mapped during parts of 1942, 1943, and 1944. The work in 1943 was in cooperation with the Bureau of Mines, as part of a Federal prospecting project for vanadium. In addition to the writers, A. P. Butler, Jr., and R. T. Russell participated part-time in the field work, which was under the direct supervision of R. P. Fischer. Thanks are due to Mr. W. S. Burbank for helpful suggestions concerning the map and text. The accompanying map shows the distribution of the known vanadium deposits and the outcrop of the ore-bearing Morrison formation. The map base was compiled from aerial mosaics, which were prepared by the Soil Conservation Service.

The area is part of a ruggedly dissected plateau. Most of the canyons are steep-walled, and in many places vertical cliffs a hundred or more feet high extend continuously for several miles. Altitudes range from about 4,500 feet along the Dolores River to about 8,000 feet on the plateau surface a few miles away.

Mining in the area began as early as 1914, but all individual deposits have been worked in a desultory manner, and in some years in the late twenties and early thirties no production is recorded for the entire area. Before 1924 the ore was mined principally as a source of radium, and since then principally for vanadium. A small mill at Gateway has operated intermittently since it was built in 1936, but except for the ore treated there, all of the ore mined has been shipped from the area for treatment. The ore production data summarized below was compiled from the files of the Bureau of Mines, individual operators, and Metals Reserve Co., and it is believed to be nearly complete.

Production of "carnotite" ore in the Gateway area, Mesa County, Colo., and the adjoining part of Grand County, Utah

Period	Short tons (rounded figures)	Approximate average grade (percent V_2O_5)
1914-23	3,500	4
1924-39	3,500	4½
1940-44	30,000	2-2½

Geology.—The rock formations in the area consist mainly of continental sediments of late Paleozoic and Mesozoic age. A broad northwest-trending syncline, into which the rocks dip at low angles from the Uncompahgre Plateau uplift on the northeast and from the Sinbad Valley anticline and the La Sal Mountains on the southwest, extends through the central part of the area (see fig. 1).

The Morrison formation of Jurassic age, which contains all the known vanadium deposits in the area, is 600 to 700 feet thick, and it consists of two easily distinguished parts. The lower and upper parts of the formation are 260 and 410 feet thick, respectively, at the Calamity group of claims on Calamity Creek in the east-central part of the area, and at the Corvusite mine on Beaver Mesa 12 to 14 miles to the west they are 220 and 280 feet thick, respectively. The lower part is composed of lenticular beds of gray, medium-grained, current-bedded sandstone, alternating with and replacing red and gray, sandy clay and mudstone; these beds are regarded as channel, mud-flat, and flood-plain deposits of fluvial origin. A zone of widespread, bench-forming sandstone beds at the top of the lower part contains most of the important vanadium deposits, but sandstone beds as much as 50 feet above and 50 feet below this zone also contain deposits in places. The upper part of the Morrison is composed of light-colored, soft, bentonitic clay and mudstone with a few sandstone lenses.

The Dakota (?) sandstone of Cretaceous age overlies the Morrison formation, and it consists of 100 feet or more of sandstone, shale, and conglomerate, all dominantly gray or brown. It is cliff-forming and caps the high mesas. The Entrada sandstone of Jurassic age crops out in a light-colored, smooth-weathering cliff, called the "slick rim" by the miners, and is a distinctive datum about a hundred feet below the Morrison formation. The formations below the Entrada are dominantly reddish and consist of sandstone and shale.

Ore deposits.—The vanadium ("carnotite") deposits in the area shown on the map are similar in mineralogy and occurrence to those in the neighboring parts of Colorado and Utah. The ore consists principally of a fine-grained, gray, micaceous mineral that coats the sand grains and partly or entirely fills the pore spaces of the sandstone, but generally some bright-yellow carnotite is mixed with this mineral. In a few places the ore minerals are chiefly dark-colored vanadium oxides. Run-of-mine ore of these types contains from 1 to about 5 percent V_2O_5. Fossil plant remains—logs and branches—are relatively abundant in the ore-bearing sandstone, and they show various states of preservation or alteration to coaly matter. Some of this plant material is richly mineralized, notably with carnotite, which either replaces the woody remains or partly fills cavities left by the decay of the wood. Commonly the sandstone surrounding the plant remains is well mineralized. Fossil logs in the Gateway area have yielded valuable amounts of high-grade carnotite ore. Clay pebbles and sandy shale beds within and underlying mineralized sandstone commonly contain some vanadium.

The ore bodies range from small masses only a few feet across and irregular in shape, containing only a few tons of ore each, to large tabular bodies of irregular outline and a couple hundred feet across, containing several thousand tons of ore. Deposits of average size in the area contain perhaps 100 tons each. The tabular bodies consist of one or more layers of ore that lie essentially parallel to the enclosing beds but do not follow the beds in detail. These layers are too thin to mine in parts of many deposits, but they may connect ore masses of minable thickness, and thus are followed as leads in prospecting and mining. Many masses of minable ore, including some of those in the tabular bodies as well as some that individually make small ore bodies, crudely resemble cylinders. They are elongate essentially parallel to the sandstone bedding. Wherever the lateral boundaries are well defined, the edge of the ore crosses the bedding planes in a smooth curve. These cylindrical ore masses are called "rolls" by the miners.

As has been observed in other carnotite-producing areas,1/ neighboring rolls generally are oriented in about the same direction, and this direction corresponds closely to the common orientation of fossil logs in the ore-bearing sandstone, whether or not the rolls actually enclose the fossil logs. Most of the fossil logs and rolls in the Gateway area trend northeasterly, and the average direction is about N. 60° E.

Most of the fossil logs are thought to have drifted into place, and their orientation probably was controlled by stream conditions at the time the enclosing sands were deposited. The localization and trend of the ore rolls, on the other hand, must have been influenced in some manner by structural conditions of sedimentary origin that controlled the flow of solutions through the sandstone beds, for the ore minerals in their present form were deposited from solutions after the sands were deposited. In places, as in part of the Calamity group of claims (see fig. 2), the clusters of fossil logs and rolls in the ore deposits show a curving arrangement, suggestive of a meandering stream, even though the channels of sedimentation are not clearly defined.

The general distribution of the ore deposits in the eastern part of the area suggests a belt of relatively closely spaced deposits extending from the north end of the Blue Mesa northwestward to Calamity Mesa, and perhaps from there westward to Beaver Mesa (see fig. 1). Continued prospecting may show a less well defined extension of this belt westward to Polar Mesa. This belt is flanked by areas in which few deposits are exposed. It seems unlikely that the evident concentration of deposits along this belt is an accident of exposure. On the other hand, the trend of the belt is not obviously related to any known stage in the physiographic development of the area; it does not correspond with the general northeast orientation of the ore rolls or fossil logs; and in part at least it is divergent from the axis of the syncline (see fig. 1) and from the regional fractures, which mostly strike about parallel to the synclinal axis. Hence the localization of the belt seemingly cannot be rationalized by a simple explanation.

Suggestions for prospecting.—The genesis of the deposits and the controls that localized the ore are not definitely determined, and all of the evidence concerning them cannot be presented in a brief statement. Nevertheless, certain observed facts regarding the distribution and character of the deposits may be useful as guides in prospecting. Most of the deposits are in a zone of bench-forming sandstone beds near the middle of the Morrison formation, and prospecting should be largely restricted to this zone. A belt, in which the known deposits are relatively closely spaced at the outcrop, trends northwestward through the middle of the area. In many places the ore rolls and fossil logs have a common orientation locally, and they show trends useful in prospecting for extensions of known deposits as well as for new deposits. Within reasonable limits, exposures at the outcrop are considered to be representative samples of what may be expected in adjacent concealed parts of a bed, so that covered areas near closely spaced deposits at the outcrop are considered most favorable for subsurface prospecting. Considering all known factors, the ground between the Maverick and Calamity groups of claims seems to be relatively favorable for the discovery of deposits by subsurface prospecting, and the ore-bearing sandstone is no more than 50 to 100 feet beneath the surface in much of this area. Likewise the ground between the Outlaw and Blue Ribbon groups might be favorable, although the ore-bearing sandstone is mostly under thicker cover and the larger deposits may average lower in grade.

Although most discoveries in the future will probably be made by subsurface prospecting, surface prospecting along the rims and on the benches will probably still yield some results. A few parts of the area, notably east and north of Cone Mountain, have been relatively inaccessible and probably not thoroughly prospected.

1/ Fischer, R. P., Vanadium deposits of Colorado and Utah: U. S. Geol. Survey Bull. 936-P, pl. 57, 1942.