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DEFENSE MINERALS ADMINISTRATION
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DMA Docket No. 3693

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Exploration

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3-28-55

DMEA-369

Nathan Wachsler phoned re: AEC drilling on adjacent land. I called AEC & was told they are doing wide-spaced drilling for geologic info. only. Probably will complete next month. If this applic. is referred to F.T., they can contact AEC for confidential information which may help the F.T. to reach a decision.

EX 3-5515 EWR.

Denial - 3693

Uranium

$ 523,600.00

Well documented

No Controversy

Murphy

Surname Copy

Murphy
Ellis
Gehan
Thilsgaard
Selfridge

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

AUG 2 5 1955

Trans-Western Uranium Corporation
c/o Mr. Nathan Wechsler
1010 Vermont Avenue, N. W.
Washington, D. C.

Re: Docket No. DMEA-3693 (Uranium)
Section 36, T.36S., R.21E., S.L.B. & M.
San Juan County, Utah

Gentlemen:

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 indicates to us that the possibility 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. Such denial, however, is made without prejudice. In the event future drilling on your or adjacent land, discloses new and more favorable evidence of ore deposition, we shall be pleased to consider a new application.

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

Sincerely yours,
C. O. Mittendorf
Administrator

FMMurphy:ai
8/22/55
cc to: Admr. Reading File
Docket
Operating Committee
Messrs. J.E.Crawford, Rm. 3641
T.H.Kiilsgaard, Rm. 5222
J.O.Hosted, Rm 3210, GSA
Code 700
Mr. Murphy
DMEA Field Team, Region III (2)

R.C.S.

(Docket Copy) 700

Murphy

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

WASHINGTON 25, D. C.

August 22, 1955

SUMMARY OF PROPOSED PROJECT

Object: Denial of application for exploration aid.

Docket No.: DMEA-3693

Commodity: Uranium

Applicant: Trams-Western Uranium Corp.
c/o Mr. Nathan Wechsler
1010 Vermont Avenue, N. W.
Washington, D. C.

Property: Utah State land lease, Section 36, T. 36S., R. 21E., S. L. P. M., San Juan County, Utah

Date of Application: February 15, 1955

Referred to Field Team: May 12, 1955

Field Team Report Received: August 10, 1955

Amount of Application: $523,600.00

Work Proposed:

	Number of Drill Holes	Average Depth	Total Footage
Phase I	56	732	41,000
Phase II	56	740	41,400
Phase III	?	?	20,600
	Total drilling footage for project		103,000 feet

Estimated Costs:

Independent Contracts

103,000 feet drilling : $4.00/ft.	$412,000.00
Clearing drill sites, bulldozing, etc.	10,000.00
1040 650 sample assays @ $5.00 each	5,200.00
Labor, Supervision, Consultants	38,800.00
Operating materials and supplies	4,000.00
Operating equipment (purchase)	7,000.00
Buildings	3,500.00

Estimated Costs: (Cont'd)

Independent Contracts

Miscellaneous	$7,500.00
Contingencies	47,600.00
Total estimated costs	$535,600.00
Government participation @ 75%	$401,700.00

Note: Applicant's estimate of costs does not check above figure.

Excerpts from Field Team report:

Section 36 is on a plateau, near the western edge of the Great Sage Plains of Southeastern Utah at an elevation of about 7,000 feet, which is capped by the Cretaceous Burro Mountain formation except where two canyons have cut into the Brushy Basin member of the Jurassic Morrison formation. The potential ore-bearing sandstone beds of the Salt Wash member of the Morrison formation are at a depth of 760 feet.

The U. S. Atomic Energy Commission drilled 7 holes located about 4,000 feet southwest of the southwest corner of section 36. These holes penetrated the Salt Wash member of the Morrison formation with unfavorable results.

Because of the negative results of the Atomic Energy Commission drilling, the lack of outcrops of a potential ore horizon, and the depth to that horizon, it is recommended that DMEA application 3693 be denied without prejudice.

Commodity Committee Members' Comments:

U. S. Geological Survey - W. P. Williams, August 17, 1955, notes in part:

" 1) The presence and character of the ore-bearing Salt Wash sandstone has not been established on the claims.

2) Ore bodies in the vicinity are small and erratically distributed.

3) Drilling depths of about 800 feet add to unfavorability of the proposed project.

"I concur with the recommendation that the application for DMEA assistance be denied without prejudice."

U. S. Bureau of Mines - J. E. Crawford, August 18, 1955

Mr. Crawford concurs in the recommendation that the subject application be denied without prejudice.

Rare and Miscellaneous Metals Division - F. M. Murphy - August 19, 1955

(Excerpts from Geological Report by D. D. Haynes)

"Drilling by the Atomic Energy Commission in sections 2 and 3, T. 37S., R. 21E., has outlined an east-west trending favorable belt. The favorable belt has not been delineated east of sec. 2, but if it were extended eastward along its known trend, it would be at least 3,000 feet south of sec. 36.

"The La Sal Mining Company intends to explore sec. 2, T. 37S., R. 21E., and their drilling may outline another favorable zone north of the one now known to exist. If a favorable zone is outlined by drilling and can be shown to extend on to the subject property, a reappraisal of sec. 36 might be made."

In view of the Field Team's report this Division concurs in recommending the denial of application DMEA-3693 without prejudice.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

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

August 18, 1955

Memorandum

RECEIVED
AUG 18 1955

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

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

Subject: Report of examination, DMEA Docket 3693, Trans-Western Uranium Corporation, Sec. 36, T. 36 S., R. 21 E., San Juan County, Utah

I have reviewed the Field Team report of examination, Trans-Western Uranium Corporation, DMEA Docket 3693; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We concur with the recommendation of the Field Team that the application be denied. This reaffirms our opinions expressed in my memorandum of March 1, 1955, in which we suggested the application be disapproved owing to the wildcat nature of the exploration program.

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

John E. Crawford
John E. Crawford

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

August 18, 1955

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Uranium Commodity Committee, Room 4445

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John E. Crawford

IN REPLY REFER TO:

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

August 17, 1955

Memorandum

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

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

Subject: Review of Field Examination Report, DMEA Docket 3693, Trans-Western Uranium Corporation, School sec. 36, T. 36 S., R. 21 E., San Juan County, Utah.

The examining team and the Field Team, Region III, recommend that the subject application be denied without prejudice because:

1) The presence and character of the ore-bearing Salt Wash sandstone has not been established on the claims.

2) Ore bodies in the vicinity are small and erratically distributed.

3) Drilling depths of about 800 feet add to the unfavorability of the proposed project.

I concur with the recommendation that the application for DMEA assistance be denied without prejudice.

WPWilliams

W. P. Williams

RECEIVED
AUG 18 1955

IN REPLY REFER TO:

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

August 17, 1955

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WPW

W. P. Williams

WPWilliams:iml
G-8/17/55

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

RECEIVED
AUG 18 1955

IN REPLY REFER TO:

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

August 17, 1955

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AUG 18 1955

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UNITED STATES
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GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

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G-8/17/55

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Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

RECEIVED
AUG 18 1955

8-16-55
pm

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

RECEIVED
AUG 10 1955

224 New Customhouse
Denver 2, Colorado

August 4, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Report of Examination, DMEA Docket 3693 (Uranium), Trans-Western Uranium Corporation, Sec. 36, T. 36 S., R. 21 E., San Juan County, Utah

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

Because of the negative results of the AEC drilling, the lack of outcrops of a potential ore horizon, and the depth to that horizon, we recommend that the application be denied.

DMEA Field Team, Region III

W. M. Traver

E. N. Harshman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
8-15-55
(date)

RECEIVED

AUG 1 0 1955

DMEA
Date Rec'd.

AUG 4 1955

BUREAU OF MINES
Denver, Colorado

TRANSMITTED

AUG - 4 1955

Building 20
Denver Federal Center
Denver 2, Colorado
August 3, 1955

Region III

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw

Subject: Docket No. DMEA 3693, Trans-Western Uranium Corporation, Section 36, T. 36 S., R. 21 E, Blanding Mining District, San Juan County, Utah

Enclosed are the original and ten copies of the Summary Onclusions and Recommendations by W. D. McMillan, Mining Engineer ad Donald Haynes, Geologist and the original and ten copies of an ngineering Report by W. D. McMillan covering Docket No. DMEA 3693.

The Trans-Western Uranium Corporation applied for explor-tion assistance in the amount of $523,600.00 to explore Section 36, 36 S., R. 21 E. by 103,000 feet of plug bit and core drilling.

The field examination was made on June 2, 1955. The omic Energy Commission had drilled 7 holes about 4,000 feet south-st of the southwest corner of Section 36. These holes penetrated e Salt Wash member of the Morrison formation with unfavorable sults.

Because of the negative results of the A. E. C. drilling, e lack of outcrops of a potential ore horizon, and the depth to that rizon, it is recommended that the application be denied.

John F. Shaw
John F. Shaw
Supervising Mining Engineer

S:jw

: o/w 10
DMEA 3693
Chron.

Reviewed by
DMEA OPERATING COMMITTEE
8-15-55
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
AUG 10

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3693

School Section 36

Trans-Western Uranium Corporation

Blanding Mining District

San Juan County, Utah

Uranium

W. D. McMillan, Mining Engineer
Bureau of Mines

Donald Haynes, Geologist
Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
8-15-55
(date)

DMEA 3693

SCHOOL SECTION 36
TRANS-WESTERN URANIUM CORPORATION
BLANDING MINING DISTRICT
SAN JUAN COUNTY, UTAH

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

W. D. McMillan, Mining Engineer
Bureau of Mines

Donald Haynes, Geologist
Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
8-15-55
(date)

TRANSMITTED

AUG - 4 1955

DMEA 3693
SCHOOL SECTION 36
TRANS-WESTERN URANIUM CORPORATION
BLANDING MINING DISTRICT
SAN JUAN COUNTY, UTAH

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

An application has been made to the Defense Minerals Exploration Administration for Government assistance in exploration of uranium on Section 36, Blanding Mining District, San Juan County, Utah. The applicant leases the property from the Utah State Land Board. The applicant proposed plug and core drilling at an estimated total cost of $523,600.00 for 103,000 feet of drilling in 140 holes. Government participation at 75 percent would be $392,700.00.

A field examination was made on June 2, 1955 and information was obtained from the Atomic Energy Commission on the results of their drilling in the area.

Section 36 is on a plateau near the western edge of the Great Sage Plains of Southeastern Utah at an elevation of about 7,000 feet, which is capped by the Cretaceous Burro Mountain formation except where two canyons have cut into the Brushy Basin member of the Jurassic Morrison formation. The potential ore bearing sandstone beds of the Salt Wash member of the Morrison formation are at a depth of 760 feet.

The U. S. Atomic Energy Commission drilled 7 holes located about 4,000 feet southwest of the southwest corner of Section 36. These holes penetrated the Salt Wash member of the Morrison formation with unfavorable results.

Because of the negative results of the A.E.C. drilling, the lack of outcrops of a potential ore horizon, and the depth to that horizon, it is recommended that DMEA application 3693 be denied without prejudice.

DMEA 3693

SCHOOL SECTION 36
TRANS-WESTERN URANIUM CORPORATION
BLANDING MINING DISTRICT
SAN JUAN COUNTY, UTAH

Engineering Report

By W. D. McMillan
Mining Engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
8-15-55
(date)

DMEA 3693

SCHOOL SECTION 36
TRANS-WESTERN URANIUM CORPORATION
BLANDING MINING DISTRICT
SAN JUAN COUNTY, UTAH

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Conclusions	4
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ILLUSTRATIONS

Figure	Follows page
1. Location Map, Trans-Western Uranium Corporation Property, Blanding Mining District, San Juan County, Utah	2
2. Proposed Exploration, Trans-Western Uranium Corporation, San Juan County, Utah	4

DMEA 3693
SCHOOL SECTION 36
TRANS-WESTERN URANIUM CORPORATION
BLANDING MINING DISTRICT
SAN JUAN COUNTY, UTAH

INTRODUCTION

Trans-Western Uranium Corporation applied for Defence Minerals Exploration Administration assistance for exploration by diamond plug and core drilling of their lease on Section 36, Blanding District, San Juan County, Utah. Their proposal was for a first stage of 56 holes on a 700-foot grid spacing, followed by a second stage of 56 holes also on a 700-foot pattern, these holes to be in the centers of the Stage I drilling. If ore was formed in the first two stages, a third stage of 28 offset holes was proposed.

The estimated total amount of drilling was 103,000 feet in 140 holes at an estimated cost of $523,600.

An examination was made on June 2, 1955 by a Region III field team consisting of W. D. McMillan of the Bureau of Mines and Donald Haynes of the Geological Survey, accompanied by Sherman D. Gardner, Geologist for Trans-Western Uranium Corporation, and George H. Bradford, laborer for the corporation.

This examination and further consultation by Donald Haynes with members of the Atomic Energy Commission resulted in the examining team recommending denial of the application.

ACKNOWLEDGEMENTS

Data on the property was obtained from the experience of the Geological

Survey member of the examining team, and from Sherman D. Gardner, Geologist for the Corporation, who had several years experience in the district. The exploration branch of Atomic Energy Commission furnished information on the results of their exploration near the property.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The leased property is School Section 36, T. 36 S., R. 21 E., S.L.P.M., Blanding Mining District, San Juan County, Utah (Fig. 1). This section is on a plateau about 2 miles northeast of Cottonwood, Washington. It is reached by traveling southwest on State Highway 95 for 10 miles, and thence 4 miles northeast on an access road built by the A. E. C. to within 1/4 mile of the southern line of Section 36.

Blanding, 14 miles east, and Monticello, 36 miles northeast, are the nearest sources of supplies. The topography of the area is a flat plateau at an elevation of approximately 7,000 feet. This plateau is cut by two northsouth canyons on the eastern and western parts of Section 36 with widths at the top of approximately 900 feet and 500 feet respectively, and depths of 140 feet in the eastern canyon and 100 feet in the western canyon.

There is a moderate cover of pines, cedar, and sage brush. Access will be fairly easy by the new proposed roads up the canyons from State Highway 95, and drilling sites can be prepared at a reasonable cost.

The climate of the area is arid, with warm to cool summers and moderate winters, with infrequent periods of extreme cold. There may be heavy storms of short duration throughout the year, with accumulations of snow in the timbered areas for short periods, in the winter months.

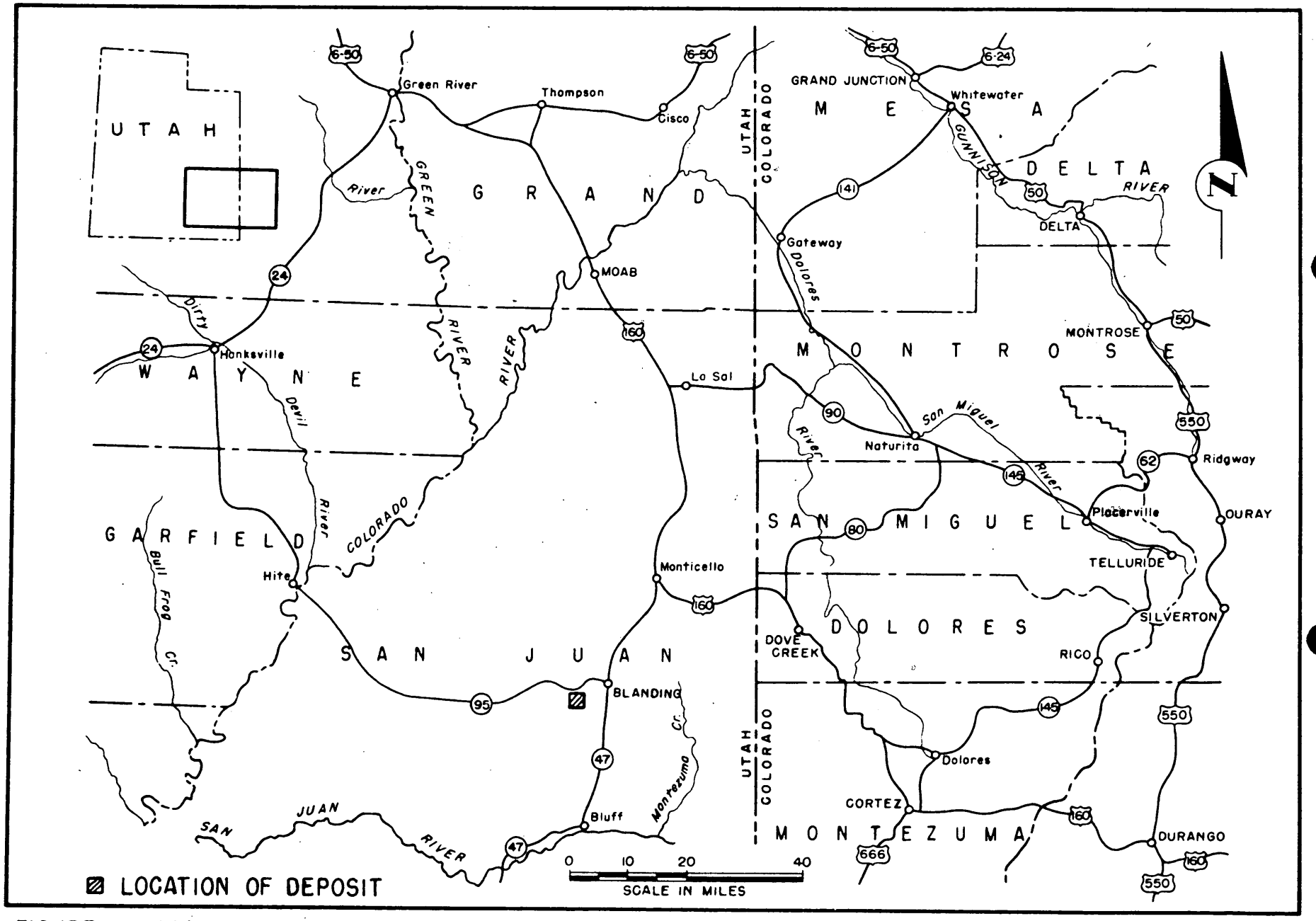


FIGURE 1 - LOCATION MAP, TRANS-WESTERN URANIUM CORPORATION PROPERTY, BLANDING MINING DISTRICT, SAN JUAN COUNTY, UTAH. DMEA 3693

Surface drilling and underground mining are feasible throughout the year.

The market for uranium ores from Section 36 is the receiving and treatment plant at Monticello, 36 miles northeast.

Mining lumber and timber are available at local saw mills, and there is an ample supply of domestic fuel on the claims. All power needs must be furnished by gasoline or diesel driven units. Water for drilling and domestic purposes must be hauled from Cottonwood, Washington, about 4 miles southwest of the section.

HISTORY, PRODUCTION, AND OWNERSHIP

The mining history of the area dates from exploration for vanadium after World War I. In recent years the Blanding Mines, about 2 miles southwest of the southwest corner of Section 36 have produced many thousands of tons of uranium-vanadium ore and are still producing. There has not been any production from Section 36.

The property is held under Utah State Uranium and Vanadium Lease ML-6051, dated February 19, 1954.

DESCRIPTION OF THE DEPOSITS

About 90 percent of the area of Section 36 is covered by the Cretaceous Burro Canyon formation which is approximately 90 feet thick. The remainder is covered by the Brushy Basin member of the Jurassic Morrison formation, which outcrops in the bottom of two canyons.

A section presented by Sherman D. Gardner, Geologist for the Corporation which was prepared from data obtained from the Blanding Mines and

the A. E. C. drilling about one half mile southwest of Section 36, gives estimated thickness of 430 feet Brushy Basin member, 150 feet of the Westwater Canyon, and 210 feet of the Salt Wash member. The uranium ore bearing sandstone bed of the Salt Wash member has an estimated thickness of 20 feet at a depth of 760 feet from the surface of the plateau.

MINABLE RESERVES

There are no minable reserves of ore.

PRESENT STATUS

Exploration and Development

No exploration has been performed on the property.

Mining and Milling Equipment and Other Facilities

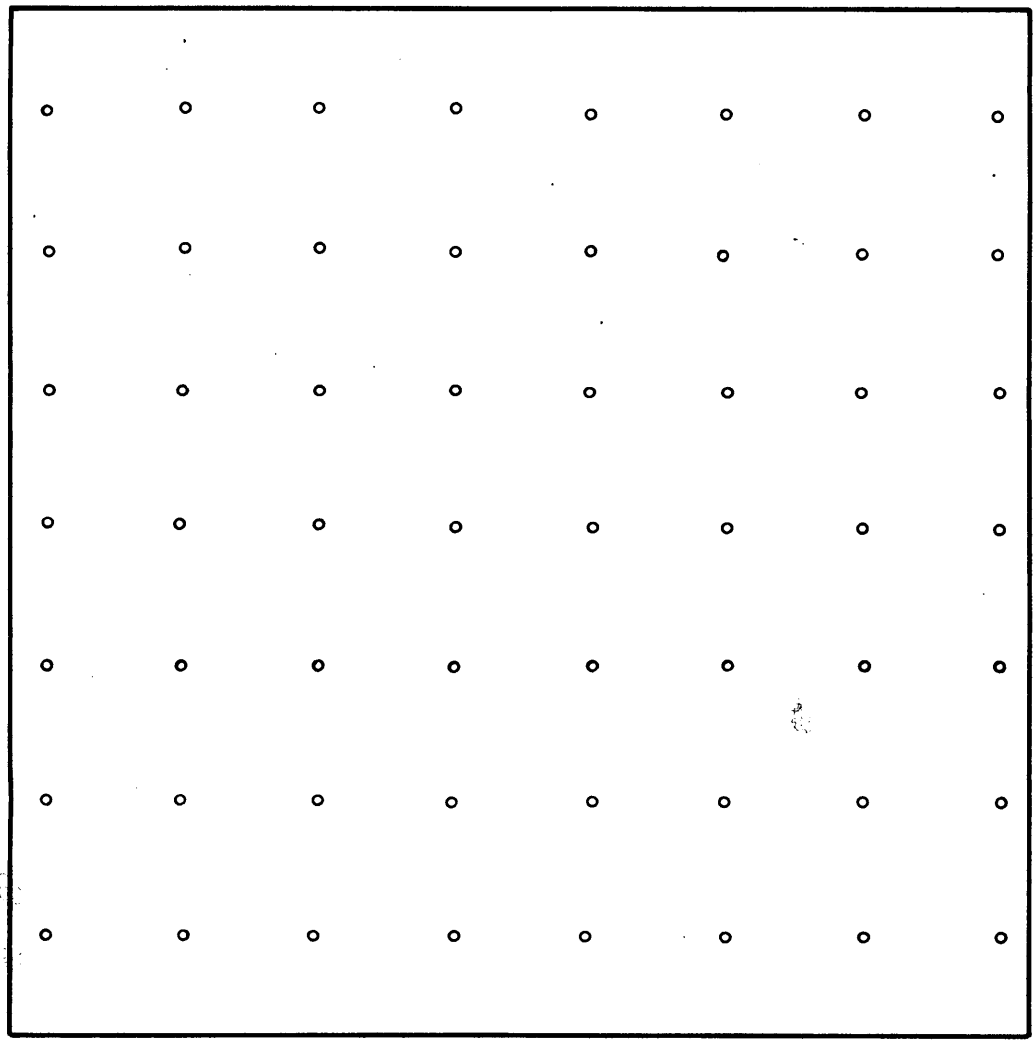
There are no mining and milling equipment or other facilities on the property.

PROJECT PROPOSALS WITH COSTS

The applicants proposed plug and diamond core drilling in three stages, set up to explore Section 36 by widely spaced drilling in the first and second stages, followed by closely spaced holes in a third stage to extend any ore found in the other two stages. The first stage drilling is shown on Fig. 2. This program consisted of 140 drill holes with an estimated total amount of drilling of 103,000 feet at an estimated cost of $523,600.00.

CONCLUSIONS

On Section 36, the ore bearing sandstone beds in the Salt Wash



SECTION 36, T. 36 S., R. 21 E.
SAN JUAN COUNTY, UTAH

L E G E N D

o Phase I - 1000' Grid spacing
56 holes (staggered)

N

1000 0 1000 2000
SCALE IN FEET

N O T E
Taken from Applicant's map

FIGURE 2 -PROPOSED EXPLORATION, TRANS-WESTERN URANIUM CORP., SAN JUAN COUNTY, UTAH. DMEA 3693

member of the Jurassic Morrison formation is at a depth of 760 feet from the surface of the plateau. Atomic Energy Commission drilling 4,000 feet southwest of the southwest corner of Section 36 gave unfavorable results.

The examining team concludes that the chances of finding uranium ore on the property are unfavorable.

RECOMMENDATIONS

It is recommended that DMEA application No. 3693 be denied without prejudice because of the lack of outcrops of a potential ore horizon, the depth to that horizon and the unfavorable results from Atomic Energy Commission drilling near-by.

/jw

DMEA
IN REPLY REFER TO:
Date Rec'd
JUL 20 1955
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

July 20, 1955

TRANSMITTED
AUG - 4 1955

Memorandum

To: DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3693 (Uranium), Trans-Western Uranium Corporation, San Juan County, Utah

Enclosed are 10 copies of a report by D. D. Haynes, U. S. Geological Survey, in which it is recommended that the application for Government assistance in exploring the subject property be denied.

The recommendation for denial is based on the following facts:

1) No favorable sandstone is known to underlie the claims, the nearest favorable belt having been outlined by AEC drilling 3,000 feet southwest of the south boundary of the subject property.

2) AEC drilling southwest of the property indicates that ore bodies are small and if present under the subject property could not be mined profitably at depths of 800 feet.

Since there appears to be little geological probability of discovering significant uranium deposits by the proposed exploration, the recommendation for denial of the request for exploration assistance is, in my opinion, justified.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (10)

ENHarshman:arh

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

MINERAL DEPOSITS
DMEA
RECEIVED
JUL 18 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

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

July 14, 1955

DMEA
Date Rec'd.
JUL 20 1955
BUREAU OF MINES
Denver, Colorado

Memorandum

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

From: J. William Hasler

Subject: DMEA 3693, Trans-Western Uranium Corporation, Monticello Mining District, San Juan County, Utah

The Trans-Western Uranium Corporation, DMEA docket 3693, applied for a DMEA loan to explore for uranium in the Monticello Mining District, San Juan County, Utah.

The property was appraised on June 2 by a Region III examining team, composed of W. D. McMillan, U. S. Bureau of Mines, and D. D. Haynes, U. S. Geological Survey, accompanied by Sherman D. Gardner and George H. Bruelford, representatives of the applicant.

The rocks exposed in the vicinity of the subject area are the Cretaceous Dakota formation and the Jurassic Morrison formation. The Salt Wash sandstone of the Morrison formation is the major uranium-producing horizon in this area. The uranium-vanadium ore deposits in the area occur in thin roughly-tabular masses, in thin- to thick lenticular bodies and in small high-grade pockets which surround mineralized fossil trees or trash pockets of carbonaceous material. The mineralized deposits in this area appear to be localized in the outer convex side of old stream channels where the sandstone and mudstone interfinger.

The Atomic Energy Commission has outlined a favorable belt of ground in secs. 2 and 3, T. 37 S., R. 21 E. The belt has not been delineated east of sec. 2, but if it were extended along its known trend, it would be at least 3,000 feet south of the applicant's property. If diamond drilling by the La Sal Mining Company in sec. 2 should outline a favorable zone that can be shown to extend in the subject property, a reappraisal might be considered. However, the results of the AEC exploration work indicates that any ore body found in the vicinity of sec. 36 would not contain any more than 3,000 tons of ore-grade material. The drilling depths required to test the ground by the applicant averages about 800 feet. It would require an ore body of approximately 15,000 tons or more of 0.23 percent U_3O_8 to mine profitably at this depth.

Reviewed by
DMEA OPERATING COMMITTEE

(date)

It is concluded that the possibility of finding an ore body of the size required to mine at a profit from a depth of 800 feet is not likely, and that the only favorable belt established to date lies out of the subject property. It is, therefore, recommended that the application for DMEA assistance be denied.

We are enclosing 12 copies of the geologic report by D. D. Haynes with accompanying maps. We are also returning the brochure.

D. D. Haynes for.
J. William Hasler,
Geologist

JWH/mlr

Enclosures

UNITED STATES DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
AUG 1 0

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

DMEA 3693, Trans-Western Uranium Corporation, Monticello Mining District San Juan County, Utah

Uranium

Geologic Report

by

D. D. Haynes
U. S. Geological Survey

July 14, 1955

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

INTRODUCTION

Application (DMEA docket No. 3693) was made on February 21, 1955, by the Trans-Western Uranium Corporation for Government assistance in exploring for uranium in the Monticello Mining District, San Juan County, Utah. The applicant proposes to explore the leased area with a maximum of 103,000 feet of core and non-core drilling at a total cost of $525,600. The Government's share would be 75 percent, or $392,700.

The property was visited on June 2, 1955, by a Region III examining team composed of W. D. McMillan, U. S. Bureau of Mines, and D. D. Haynes, U. S. Geological Survey. The examining team was accompanied by Sherman D. Gardner and George H. Bruelford, representatives of the applicant.

The writer conferred with Mr. Phil H. Dodd of the U. S. Atomic Commission, Exploration Division, on evaluation of the propery.

GENERAL DESCRIPTION

The Trans-Western Uranium Corporation property is located in sec. 36, T. 36 S., R. 21 E., S.L.M., San Juan County, Utah (fig. 1). The property is accessible from Blanding, Utah, by traveling about 4 miles south on State Highway 47, thence about 7 miles west on State Highway 95, thence north about 4 miles on unimproved dirt roads to the property. The last 4 miles are U. S. Atomic Energy Commission drill roads and would be impassable after rains.

Topographically the area is a flat bench capped by the Cretaceous Dakota formation. There are two north-south trending canyons on the property, but they are no more than 125 feet deep. To the west and south of the property in Cottonwood Wash the Salt Wash member of the Morrison formation is exposed.

GEOLOGY

Stratigraphy

The rocks exposed in the vicinity of the subject area are, in decending order, the Cretaceous Dakota formation, and the Jurassic Morrison formation. The Jurassic Morrison formation is composed of the Brushy Basin member, the Westwater Canyon member and the Salt Wash sandstone member. Underlying the Morrison formation, but not exposed in the area, is the Jurassic Summerville formation.

The sandstone capping the higher areas in sec. 36 is the Cretaceous Dakota formation. It is about 90 feet thick and consists of coarse conglomerate with a matrix of coarse sandstone and sandstone with minor shale lenses.

The Brushy Basin member of the Morrison formation is about 400 feet thick and is composed of variegated silts, shales, and minor sandstone lenses. The sandstones vary in color from gray, green, maroon, to gray-white.

The Westwater Canyon member in the area is about 150 feet thick, and consists of a greenish-yellow to greenish-gray, cliff-forming, coarse- to medium-grained, poorly sorted sandstone with a subordinate amount of gray-green shale. The Westwater Canyon sandstone is similar to the Salt Wash sandstone in type of bedding, grain size and sorting but its color is distinctive.

The Salt Wash sandstone is the major uranium-producing horizon in this area and is about 210 feet thick. It is composed of gray-white to buff, gently cross-bedded sandstone lenses separated by red and green mudstones and shales. Conglomeratic lenses and gritty beds are scattered throughout this member but are not persistent for any great length. The Jurassic Summerville formation underlies the Morrison formation in this area. The Summerville formation ranges from 70 to 90 feet thick and is composed of maroon to chocolate-brown, calcareous and gypsiferous mudstones and shales interbedded with limy, gray-white to buff, bedded to cross-bedded, ripple-marked sandstones of variable thickness.

Structure

The subject area lies east of the Comb Ridge monocline in an area of nearly flat-lying strata. The dip is about 1° to the east. There are no known faults or folds in the vicinity of sec. 36.

Minerals

The chief ore minerals are carnotite, tyuyamunite, and roscoelite with minor amounts of pascoite and vanoxite. Common accessory minerals are chert, calcite, limonite, gypsum and minor amounts of jarosite.

ORE DEPOSITS

The ore horizon in the vicinity of sec. 36 is in the upper 80 to 90 feet of the Salt Wash sandstone. The uranium-vanadium ore of the Monticello Mining District, Blanding area, occurs in thin, roughly tabular masses, in thin to thick lenticular bodies, which may thicken appreciably or pinch out completely within short distances and in small high-grade pockets which surround a mineralized fossil tree or trash pockets of carbonaceous material.

The mineralized deposits in this area seem to be localized in the outer convex side of old stream channels where the sandstone and mudstone interfinger. These places also seem to have an abundance of carbonaceous material.

The ore deposits in the Monticello Mining District, Blanding area, appear smaller as they approach the northeast corner of the district. The largest known ore deposit in the vicinity of sec. 36 is about 7,500 feet from the southwest corner of sec. 36. The ore deposit contains about 2,500 tons of 0.23 percent U_3O_8 and lies at a depth of about 300 feet.

Mr. Phil Dodd, of the U. S. Atomic Energy Commission, Exploration Division, believes that any ore deposits found in the vicinity of sec. 36 would contain no more than 3000 tons of ore-grade material (ore grade being 0.1 percent U_3O_8 or 1.0 percent V_2O_5 one foot or more thick) and as the drilling depths average about 800 feet on sec. 36, it would require an ore body of 15,000 tons or more of 0.23 percent U_3O_8 to mine profitably at this depth.

FAVORABLE TRENDS

Drilling by the U. S. Atomic Energy Commission, Exploration Divison, in secs. 2 and 3, T. 37 S., R. 21 E., has outlined an east-west trending favorable belt. The favorable belt has not been delineated east of sec. 2, but if it were extended eastward along its known trend, it would be at least 3000 feet south of sec. 36 (fig. 2).

The La Sal Mining Company intends to explore sec. 2, T. 37 S., R. 21 E. and their drilling may outline another favorable zone north of the one now known to exist. If a favorable zone is outlined by drilling and can be shown to extend on to the subject property, a reappraisal of sec. 36 might be made.

PROPOSED EXPLORATION

The applicant proposes to explore sec. 36 in three stages of drilling with 140 holes totaling 103,000 feet.

Stage I would consist of drilling 56 holes totaling 41,000 feet on 1000-foot centers. These holes would be drilled to obtain a better understanding of the sub-surface geologic conditions and to help establish within close limits the depths where coring of the formation should be commenced in subsequent holes.

Stage II would consist of drilling 56 holes totaling 41,400 feet on a 500-foot spacing. If no favorable indications of ore are discovered in stage II, stage III would be discontinued.

Stage III would consist of 28 holes totaling 20,600 feet. The objective of stage III is to outline any favorable ground with more closely spaced holes. The offset interval may be as small as 50 feet. The work could be completed within 12 months.

CONCLUSIONS AND RECOMMENDATIONS

Drilling by the U. S. Atomic Energy Commission in sec. 2 has proven that a favorable belt with an east-west trend exists to the south of sec. 36 . Drilling to the north of this favorable belt for a distance of 2000 feet has proven that no favorable sandstone lenses or ore bodies exist there. If future drilling should prove another favorable belt north of the one now tested, which could be projected into sec. 36, a reappraisal of sec. 36 for Government assistance may be made.

Mr. Phil Dodd of the U. S. Atomic Energy Commission, believes that even though favorable sandstone lenses might exist on sec. 36, any ore deposit found would probably be too small to be economically mined. This should be kept in mind if a reappraisal of the subject property is made.

At this time no favorable trends can be extended into sec. 36 and as any holes drilled would be of a "wildcat" nature, it is recommended that Government assistance be denied.

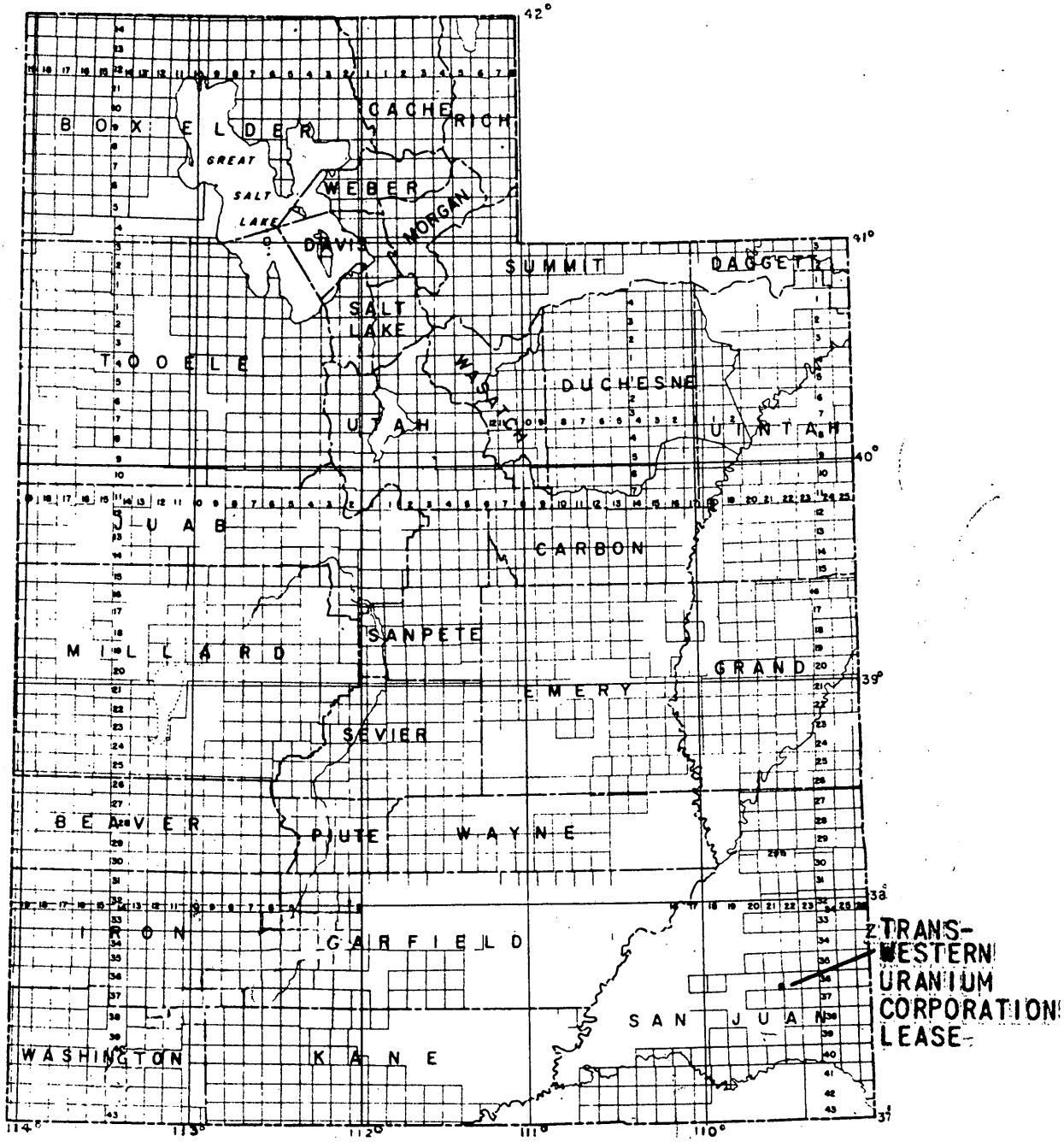
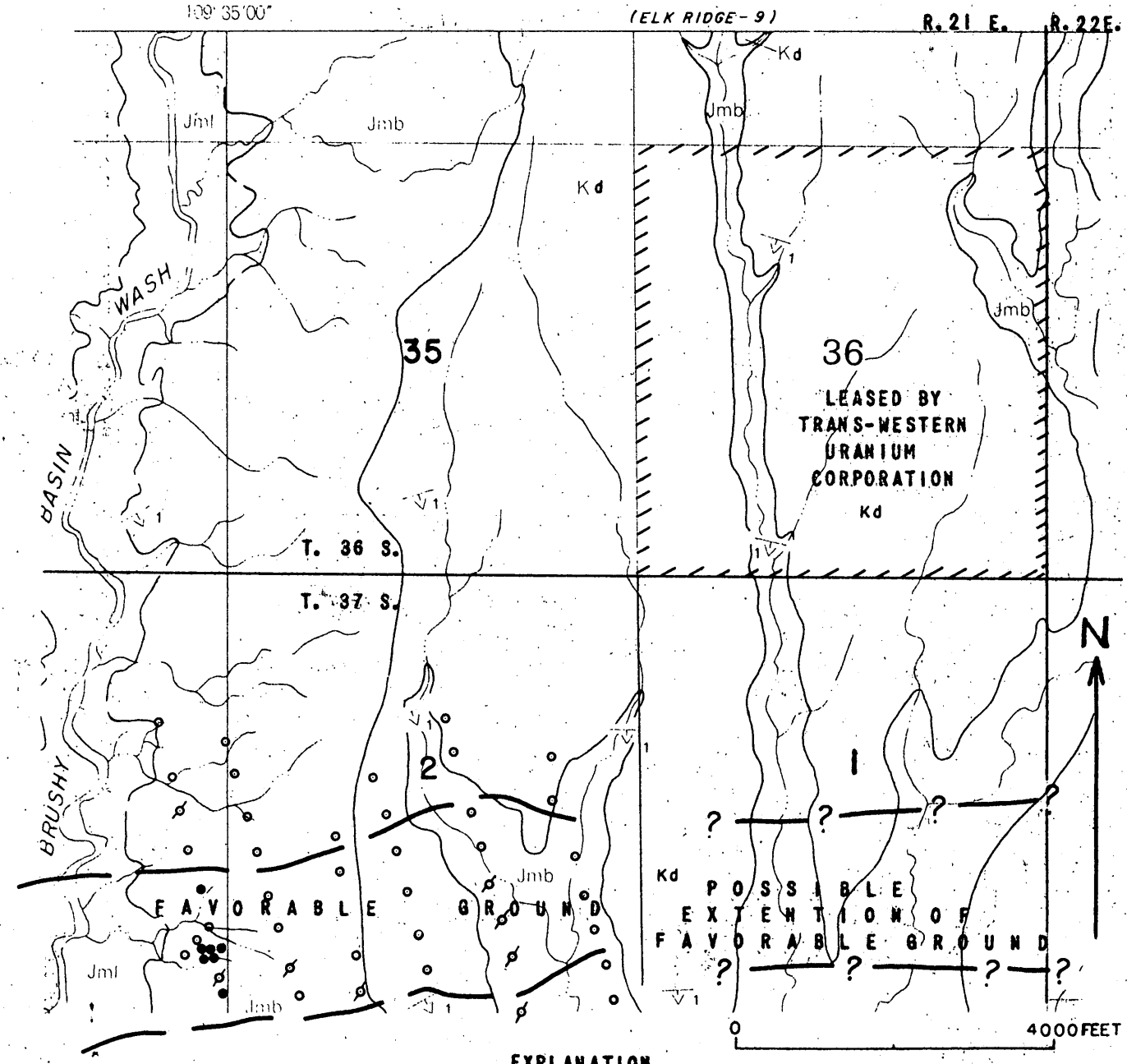


Figure 1. INDEX MAP OF UTAH SHOWING LOCATION OF TRANS-WESTERN URANIUM CORPORATION LEASE SAN JUAN COUNTY, UTAH



EXPLANATION

Kd	CRETACEOUS DAKOTA SANDSTONE
Jmb	JURASSIC BRUSHY BASIN MEMBER OF MORRISON FORMATION
Jml	JURASSIC LOWER MORRISON FORMATION
	BOUNDARY OF FAVORABLE GROUND
	BOUNDARY OF AREA PROPOSED FOR EXPLORATION

DIAMOND-DRILL HOLES, A.E.C.

- ○ BARREN
- MINERALIZED
- ● ORE-BEARING

Note: BASE MAP FROM U.S. GEOLOGICAL SURVEY PHOTOGEOLOGIC QUADRANGLE MAP ELK RIDGE 16

Figure 2. MAP OF SECTION 36, T. 36 S., R. 21 E., S.L.M. AND VICINITY SHOWING FAVORABLE GROUND OUTLINED BY ATOMIC ENERGY COMMISSION
SAN JUAN COUNTY, UTAH

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

224 New Customhouse
Denver 2, Colorado

May 17, 1955

Defense Minerals Administration
RECEIVED

Memorandum

To: John F. Shaw (w/brochure)
W. P. Williams

From: DMEA Field Team, Region III

Subject: Docket DMEA-3693 (Uranium), Trans-Western Uranium Corporation, Sec. 36, T. 36 S., R. 21 E., S.LB & M., San Juan County, Utah

Enclosed are copies of the subject loan application for $523,600.00, its transmittal from the Chairman of the Operating Committee and memoranda from R.W. Trace, USGS, and J.E. Crawford, USBM, members of the Uranium Commodity Committee, to E.W. Ellis.

In addition to the above, the file includes a copy of a letter dated March 15, 1955 from Mr. Ellis to the applicant requesting additional information, and a copy of the applicant's reply over the signature of Nathan Wechsler dated April 27, 1955. This letter is supplemented by a short geological report with accompanying maps by Sherman D. Gardner, Geologist.

The Chairman of the Operating Committee points out the fact that although the property is located in a favorable area, unless the deposits to be expected are of a size comparable with the funds expended perhaps consideration should be given to a much less ambitious project.

The AEC Grand Junction Operations Office can supply information on the results of their drilling near the Section. After consultation with them a field examination is required with covering reports.

WMT:jp
cc Subject
Chron
Harshman w/encls.
Sec. Op. Comm.

W. M. TRAVER
W. M. Traver

E. N. Harshman
E. N. Harshman

Encls.

Surname copy
Murphy
Ellis
Johnson
Kilsgaard
Selfridge
Johnson

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

MAY 12 1955

Trans-Western Uranium Corporation
c/o Mr. Nathan Weehsler
1010 Vermont Avenue, N. W.
Washington, D. C.

Re: Docket No. DMEA-3693 (Uranium)
Section 36, T. 36 S., R. 21 E., S.L.B. & M.
San Juan County, Utah

Gentlemen:

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

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

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

Sincerely yours,

C. O. Mittendorf (for)

Administrator

FMMurphy/gla
5-9-55
cc to: Admr.'s Reading File
Docket
Code 700
Mr. Murphy
DMEA Field Team, Region III (2)

R.C.S.

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

Surname copy

Murphy
Ellis
Selfridge
Johnson

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

MAY 12 1955

Re: Docket No. DMEA-3693 (Uranium)
Trans-Western Uranium Corporation
Section 36, T. 36 S., R. 21 E., S.L.B. & M.
San Juan County, Utah

Dear Mr. Traver:

The captioned application is referred to Region III Field Team for investigation, a field examination, and recommendation. A copy of the application was forwarded to your office on February 23, 1955.

Enclosed are copies of memoranda from Mr. R. D. Trace, dated May 4, and Mr. J. E. Crawford, dated May 5, 1955, members of the Uranium Commodity Committee. Also enclosed are two copies of a letter, dated April 27, with attached additional data, received from the Applicant in response to our letter of March 15.

The subject proposed project estimated to cost $523,000.00, requested by the Applicant, would have to be justified by target inferred-ore deposits of commensurate value. Maps available here show that the property is located in a favorable mineralized area. However, as the A.E.C. has drilled near the subject property, you may have or can obtain more specific information on the possibilities of discovering extensive ore deposits by the proposed project or a modified exploration program.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (GHB)

Enclosures

FMMurphy/gla
5-9-55
cc to: Admr.'s 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. Murphy

APPROVED:

/s/ C. H. Johnson (GHB)
Member, Bureau of Mines

Thor H. Kiilsgaard (GHB)
Member, Geological Survey

R.C.S.

5/5/55 gla

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

May 5, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 3693, Trans-Western Uranium Corporation, Section 36, San Juan County, Utah

I have reviewed the attached additional information supplied by Trans-Western Uranium Corporation, DMEA Docket No. 3693, Section 36, San Juan County, Utah; and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We recommend that this data be referred to the Field Team for study, and that the Field Team be requested to discuss the data with Ernest R. Gordon, Grand Junction Operations Office, Atomic Energy Commission, Grand Junction, Colorado. Mr. Gordon will probably be able to supply the Field Team with information about the Atomic Energy Commission drilling near Section 36. Should the Atomic Energy Commission drilling prove the area unfavorable, a field examination of the property may not be warranted.

John E. Crawford

John E. Crawford

Attachment

5/5/55 gla

IN REPLY REFER TO:

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

May 4, 1955

Re: DMEA-3693
Trans-Western Uran. Corp.
Sec. 36 State Lease
Cottonwood Canyon Area
San Juan County, Utah
$523,600 - Uranium

Memorandum

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

From: R. D. Trace, U. S. Geological Survey

Subject: Review of supplemental data

I doubt whether data can be obtained that will justify 700 to 800 foot drill holes in this area. However, the Field Team conceivably could use the Commission drill data and justify a greatly reduced project.

As the Commission's report is now being prepared, according to Gardner, and therefore presumably not yet available to Mr. Hosted, I suppose that the only way to get any Commission information is to refer the application to the Field Team.

R. D. Trace

R. D. Trace

IN REPLY REFER TO:

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

Defense Minerals
MAY 5 - 1955

May 4, 1955

Re: DMEA-3593
Trans-Western Uran. Corp.
Sec. 36 State Lease
Cottonwood Canyon Area
San Juan County, Utah
$523,000 - Uranium

Memorandum

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

From: R. D. Trace, U. S. Geological Survey

Subject: Review of supplemental data

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As the Commission's report is now being prepared, according to Gardner, and therefore presumably not yet available to Mr. Hosted, I suppose that the only way to get any Commission information is to refer the application to the Field Team.

R. D. Trace

RDTrace:hlm
G-5/4/55

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

4/29/55 gla

WECHSLER AND COMPANY
ACCOUNTANTS, AUDITORS AND TAX CONSULTANTS
SUITE 300, DENRIKE BUILDING
WASHINGTON 5, D. C.
EXECUTIVE 3-5515

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 29 1955

April 27, 1955

Mr. Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division
U. S. Department of the Interior
Washington 25, D. C.

REFERENCE: Trans-Western Uranium Corporation
Docket No. DMEA-3693 (Uranium)
Section 36, T. 36 S., R. 21 E., S.L.B.&M.
San Juan County, Utah

Dear Mr. Ellis:

In reply to your letter of March 15, 1955, I transmit, herewith, the following data for your examination:

1. Geologic Report on Section 36, Township 36 South, Range 21 East , San Juan County, Utah, signed by Sherman D. Gardner, Geologist.

2. Geologic map showing relation between Section 36 and the Blanding Mines Area.

3. Cross-section from Blanding mines to Section 36, showing geological formations.

Recently, Mr. Gardner was in Grand Junction, where he talked with the Exploration Branch of A.E.C. about drilling in the area. He was unable to obtain any information about this drilling, but was told that, if you request information from them, they will see that it is forwarded to you immediately.

As you will note on the maps, the approximate locations of the holes nearest to the property have been placed. This should give Defense Minerals Exploration Administration, upon finding the results of such drilling from A.E.C., sufficient data on mineralization trends and favorability of the host rock which would materially assist them in the planning of the exploration of Section 36.

If a verbal report is necessary, Mr. Gardner would be willing to come to Washington, D. C., to expedite the completion of this application for field examination. If there is any further information necessary, please contact me, as Trans-Western Uranium will be glad to help expedite the matter.

Very truly yours,

WECHSLER AND COMPANY

Nathan Wechsler

Nathan Wechsler, C.P.A. and
Attorney at Law

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 29 1955

Encls.- 3
As stated above

NW/fdr

GEOLOGIC REPORT ON SECTION 36, TOWNSHIP 36 SOUTH, RANGE 21 EAST
SAN JUAN COUNTY, UTAH

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 29 1955

- -

Section 36, Township 36 South, Range 21 East is located about 6 miles west of Blanding, Utah and can be reached by traveling either State Highway 95 to Cottonwood Wash or by the Blanding-Elk Ridge Road. It is necessary to traverse a short distance on foot to reach the area proper since there are no roads directly to Section 36.

This property lies a few miles to the east of Comb Ridge Monocline, where the rocks are essentially horizontal. There is no indication of faulting of any consequence in the immediate vicinity and, in general, the rocks do not appear to have been disturbed.

Exposed on Section 36 are the Burro Canyon-Dakota sandstone, undifferentiated, of Cretaceous Age; also the upper portion of the Brushy Basin Shale member of the Morrison Formation, which is Jurrasic. (See map).

The Burro Canyon-Dakota sandstone is chiefly a buff to tan, medium to coarse-grained sandstone that is highly resistant and weathers into vertical cliffs which form the rims of the deep stream cut washes and canyons throughout the area. This unit is 90 feet thick by actual measurement. The only other exposed rocks are the upper 75 to 100 feet of Brushy Basin shale which consists mainly of gray to green bentonitic shales interbedded with thin beds of buff to gray sandstones and greenish-gray siltstones. This unit forms the steep slopes and valley floors along the canyons found on Section 36. Total thickness of this member is about 430 feet.

Underlying the Brushy Basin shale is the Westwater Canyon member composed chiefly of sandstone but with some shale interbedded. Below this member are the shales of the Recapture member and the sandstones of the ore horizon, the Salt Wash sandstone, the lowest member of the Morrison Formation. The ore producing horizon is about 70 feet below the top of this member, and is believed to be about 20 to 30 feet in thickness. This is verified by the present mining operations at Blanding Mines in Cottonwood Wash about two miles to the west. (See drawing No. 4).

Aggregate thickness of all above named units would be about 880 feet, with total depth to the ore horizon being approximately 760 feet. (See drawing No. 5).

Although the producing Salt Wash sandstone does not outcrop on Section 36 and therefore cannot be studied in detail, it is exposed along Cottonwood Wash a short distance to the west. It is here that the Blanding Mines has been producing Uranium-Vanadium ores for many years. Dr. William Lee Stokes, who has made a careful and thorough investigation of the area, states in his report: "Many studies of the trends of mineralization of the belt of ore bodies in the Blanding Area clearly show that the trend is easterly or northeasterly from Blanding Mines toward the general vicinity of Section 36." This has been verified in part by the findings of the writer.

A recent drilling program by the A.E.C. explored the area south and west of Section 36, with the nearest hole being about 1500 feet from the southwest corner of this property. (See drawing No. 4). Although the detailed information acquired by this drilling was not available to the author, it is believed that the results of this program were encouraging and considerable mineralization was encountered. A report by the A. E. C. is now in the process of preparation and once published should give a detailed account of the drilling results.

Because of the proximity of this property to a known producing area and the mineralizationthat is known to exist in the immediate vicinity, it is hereby recommended that a drilling program be instigated on Section 36 to establish the ore trends believed to exist here. Although this would be a rather deep drilling project, it is felt by the writer that the possibilities of ore are such that this would be definitely warranted.

Respectfully submitted,

Sherman D. Gardner

Sherman D.Gardner
Geologist

SDG-g

Surname copy

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

MAR 15 1955

Trans-Western Uranium Corporation
c/o Mr. Nathan Wechsler
1010 Vermont Avenue, N. W.
Washington, D. C.

Re: Docket No. DMEA-3693 (Uranium)
Cottonwood Wash
Section 36, T. 36 S., R. 21 E., S.L.B.& M.
San Juan County, Utah

Gentlemen:

Your application for aid in an exploration project has been reviewed by our geologists and mining engineers.

In your application we note that the Morrison formation is not exposed on your property. Also, to cut the surmised mineralized zone of the Salt Wash member of this formation will require drill holes with an average depth of 750 feet.

The subject property appears to be located in a favorable district. However, this Agency is not authorized to recommend work which could be considered prospecting or reconnaissance drilling for geologic information only. In your application, the initial drilling in proposed Stage I is considered by our reviewers to be essentially reconnaissance drilling.

Your proposal calls for a total expenditure of $523,600 to drill 640 acres of land. Our Agency has recommended contracts of this value. However, such contracts were only on properties where our geologists and engineers have had specific data available on which they could base their conclusions that the value of the ore deposits which might be discovered would be proportionate to the capital expenditure required for the project.

To assist us in an appraisal of the merits of your proposal, we suggest that some preliminary reconnaissance drilling should be done on your property to obtain the geological information we require. Then the results of such drilling together with the following data should be submitted to this Agency:

1. Four copies of maps, or sketches, indicating the surmised mineral trend, and, if possible, the sedimentary trend in the subject area.

2. Data on geological features on your or adjacent property, such as ore trends, channels, faults, or other structures, etc., favorable to possible ore deposition.

R.C.H.

3. Estimated depths and thickness of favorable host rock and other geological data pertinent to ore deposition in these formations. Also, estimated size and approximate value of individual ore bodies on your or adjacent land.

4. Assay and sample data of any mineralization encountered on your property or adjacent thereto.

5. Results of any radiometric logging or surveying.

We are holding your application in abeyance in order to give you an opportunity to complete the work required to obtain the data outlined above. Also, you may desire us to hold your application until results of the A.E.C. drilling on the adjacent property becomes available. If their work is successful, the resulting data on mineralization trends and favorability of the host rock would materially assist in planning the exploration of your property.

Sincerely yours,

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

FMMurphy/am/gla
(3-11-55)
3-14-55
cc to: Admr. Reading File
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. C. Hosted, Rm. 3210, GSA
Code 700
Mr. Murphy
DMEA Field Team, Region III (2)

3/8/55 gla

IN REPLY REFER TO:

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

Defense Minerals Administration
RECEIVED
MAR 8 1955

March 7, 1955

Re: DMEA-3693
Trans-Western Uran. Corp.
Sec. 36 State Lease
Cottonwood Canyon area
San Juan County, Utah
$523,600 - Uranium

Memorandum

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

From: R. D. Trace, U. S. Geological Survey

Subject: Review of application

The Cottonwood Canyon or Blanding district has produced a substantial tonnage of uranium from the Salt Wash member of the Morrison formation. The Bureau of Mines drilled a few holes in the district in 1943, and, as stated by the applicant, the Commission has studied and explored the district. The results of the recent drilling are not available to me, and I can not therefore make a geologic analysis of the ore potential of the applicant's property.

According to the USGS Map MF 16, the property is no more than 2 miles from known ore deposits. Results of AEC drilling may have lessened this gap.

The only way that I know of justifying the proposed project is: take the results of the Commission drilling, plus a knowledge of the ore habits in the area, and propose that these data strongly suggest that the applicant's property is on the general trend of the known favorable ground and ore bodies. The size of the targets is important also.

The supervisory costs of the proposed project seem too high.

Bob Trace
R. D. Trace

IN REPLY REFER TO:

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

Defense Minerals Administration
MAR 8 - 1955

March 7, 1955

Re: DMEA-3693
Trans-Western Uran. Corp.
Sec. 36 State Lease
Cottonwood Canyon area
San Juan County, Utah
$523,600 - Uranium

Memorandum

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

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Subject: Review of application

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R. D. Trace

RDTrace:hlm
G-3/7/55

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

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

March 7, 1955 MAR 8 - 1955

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Cottonwood Canyon area
San Juan County, Utah
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DMEA (3)
Docket file
J. E. Crawford, 3641 Interior

3/2/55 gla

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

DEPARTMENT OF THE INTERIOR
Bureau of Mines Administration
RECEIVED
MAR 1 - 1955

March 1, 1955

Memorandum

To: Ernest W. Ellis, DMEA Member
Uranium Commodity Committee

From: Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 3693, Trans-Western Uranium Corp., State Uranium and Vanadium Lease, Cottonwood Wash, San Juan County, Utah

I have reviewed the attached application of Trans-Western Uranium Corporation and have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We recommend that the application be denied. The program presented by Trans-Western Uranium Corporation represents over a half-million dollar geologic exploration venture. Such long-range geologic drilling has been, and should continue to be, the responsibility of the Atomic Energy Commission and its contractors.

The applicant apparently has conducted no preliminary prospecting work on the claims. Results of AEC drilling south of the company's holdings are not known, as their program has not been completed. Nevertheless, even if the AEC proved the presence of favorable ground to the south, this would not be sufficient reason to warrant granting a $523,600 contract, with 75 percent Government assistance. If the applicant is serious in his interests, I suggest that he put down several holes prior to applying to the DMEA.

John E. Crawford

John 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 1, 1955

MAR 1 - 1955

Memorandum

To: Ernest W. Ellis, DMEA Member
Uranium Commodity Committee

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

March 1, 1955

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John E. Crawford

Attachment

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

February 23, 1955
Subject: DMEA 3693
Re: Exploration Assistance
Cottonwood Wash

Trans-Western Uranium Corporation
C/o Mr. Nathan Wechsler
1010 Vermont Avenue, N. W.
Washington, D. C.

Gentlemen:

The receipt of your application dated February 15, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA 3693 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

APPLICATION TO DMEA

TRANS-WESTERN URANIUM CORPORATION

Prepared by:

WECHSLER AND COMPANY
1010 Vermont Avenue, N.W.
Washington, D. C.

McKAY, BURTON, McMILLAN AND RICHARDS
Attorneys and Counselors at Law
Newhouse Building
SALT LAKE CITY, UTAH

SPECIAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS:

That TRANS-WESTERN URANIUM CORPORATION, a corporation of Utah, with offices at 412 Ness Building, Salt Lake City, Utah, does hereby make, constitute and appoint NATHAN WECHSLER, his agents and attorneys, its true and lawful attorney to appear for said corporation and representsaid corporation before the United States Department of the Interior, Defense Minerals Exploration Administration, in connection with any matters involving an application for aid in an exploration project in which said corporation shall be the sole applicant, pursuant to an employment agreement dated December 1, 1954, giving said attorney full power to do everything requisite to be done in such matters, but not any power to execute agreements.

It is requested that all communications be addressed regarding any matter in which said attorney is hereby authorized to act, as follows:

Mr. Nathan Wechsler 1010 Vermont Avenue, N. W. Washington, D. C.	Trans-Western Uranium Corporation 412 Ness Building Salt Lake City 1, Utah.

Any power of attorney for this purpose, if any, heretofore executed, is hereby revoked.

IN WITNESS WHEREOF, Trans-Western Uranium Corporation has executed this special power of attorney by its president and secretary thereunto duly authorized, this 15th day of January, A. D. 1955.

TRANS-WESTERN URANIUM CORPORATION,
a corporation of Utah,

ATTEST:

Webster W. Decker
Secretary

By Paul S. Dixon
President

STATE OF UTAH)
: ss.
County of Salt Lake)

On the 15th day of January, 1955, personally appeared before me Paul S. Dixon and Webster W. Decker, who, being by me first duly sworn, did say that they are respectively the President and Secretary of Trans-Western Uranium Corporation, and that the foregoing instrument was signed in behalf of said corporation by authority of a resolution of its board of directors duly adopted at a lawful meeting attended by a quorum, and said Paul S. Dixon and Webster W. Decker duly acknowledged to me that said corporation executed the same and that the seal thereunto affixed is the seal of said corporation.

Paul B. Barnum
NOTARY PUBLIC
Residing at Salt Lake City, Utah.

My commission expires
May 1, 1958

Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

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Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

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APPENDIX

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Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

REPORT ACCOMPANYING APPLICATION TO DMEA

1. NAME OF APPLICANT

(a) The applicant is the Trans-Western Uranium Corporation, 412 Ness Building, Salt Lake City, Utah.

(b) The Trans-Western Uranium Corporation is a corporation organized in and doing business under the laws of the State of Utah.

(c) The following are the titles, names and addresses of officers:

(1) President and General Manager:

Paul S. Dixon
19 West on South Temple
Salt Lake City, Utah

(2) First Vice-President:

Virgil V. Peterson
Walker Bank Building
Salt Lake City, Utah

(3) Second Vice-President:

Willis L. Peterson
325 West 14th South
Salt Lake City, Utah

(4) Secretary and Treasurer:

Webster W. Decker
15 Exchange Place
Salt Lake City, Utah

(5) Field Supervisor:

Sherman D. Gardner
412 Ness Building
Salt Lake City, Utah

(6) Chief Engineer:

Arnold L. Brown
412 Ness Building
Salt Lake City, Utah

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

FEB 21 1955

Form Approved.
Budget Bureau No. 42-R1085.2.

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

Not to be filled in by applicant

Docket No. 3693
Metal or Mineral Uranium-Vanadium
Date Received 2-21-55
Estimated Cost $523,600
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: TRANS-WESTERN URANIUM CORPORATION
412 Ness Building, Salt Lake City, Utah

(*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. A Utah Corporation

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. See Report, Page 1

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract See Report - Page 2

(*b*) State any mine name by which the property is known. See Report - Page Two

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
See Report - Page 2

(*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 See Report - Page 2

(*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. See Report - Page 2

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. See Report - Page 2,3& 4

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. See Report - Page 2, 3 & 4

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.
See Report - Page 5

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.
See Report - Page 5

16—66551-1

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

(*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 contact veins, ore-bearing beds, etc. See Report - Page 5

(*c*) The work will start within 3 weeks days and be completed within 12 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See Report - Page 9

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: See Report

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.). See Report - Page 12

(*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. See Report - Page 12

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. See Report - Page 12

(*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. See Report - Page 12

(*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. See Report - 12

(*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. See Report - Page 12

(*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)? See Report - Page 13

(*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 February 15, 1955, 195__

TRANS-WESTERN URANIUM CORPORATION
(Applicant)

By [signature]

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

3. PROPERTY RIGHTS

State Uranium and Vanadium Lease, ML-6051, Cottonwood Wash, San Juan County, Utah, dated February 19, 1954, covers all of Section 36, Township 36 South, Range 21 East, Salt Lake Meridian. The Lease requires payment of annual rental of 50 cents per acre, and 12-1/2% royalty on gross value of or gross amount received for the ore. Work must be commenced by December 31, 1954. Annual reports must be made. The Lease is for a term of 10 years and as long thereafter as said leased minerals may be produced in commercial quantities. At the end of 20 years, if said lease is then in force, there shall be such re-adjustment of terms as the State may require as necessary in the interest of the State.

4. PHYSICAL DESCRIPTION

(a) History

At the time of submitting this application, no exploration or development work is being carried out on the above described property. Some drilling has been done by the A.E.C. within one mile of this section and roads have been constructed to these drill sites. One road recently constructed runs within 1/4 mile of the property line.

(c) Geologic Setting

The following is a geologic report on Section 36, Township 36 South, Range 21 East, written by Dr. William Lee Stokes for Trans-Western Uranium Corporation. Dr. Stokes, an eminent geologist, was at one time employed by the A.E.C. and has made an exhaustive study of the Blanding area. Dr. Stokes who is a Professor of Geology at the University of Utah, is also associated with the firm Geoprofessional Services, Inc. The following is his report:

Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

Section 36, T. 36 S., R. 21 E., is located approximately six miles west of Blanding, Utah. It is easily accessible by two routes; one is via Utah Highway 95 from Blanding and thence down the Cottonwood Canyon Road and the other is via the Bluff Road and thence north up Cottonwood Canyon.

Cottonwood Canyon lies to the east of Comb Ridge monocline in an area of nearly flat-lying strata. The youngest formation exposed on Section 36 is the Burro Canyon formation of early Cretaceous age and the oldest rock exposed is the upper 70 feet of the Brushy Basin member of the Morrison formation. The areal extent of the exposed Brushy Basin on Section 36 is very limited and the Burro Canyon forms at least 90 per cent of the surface. The Morrison is exposed in a north-south trending valley 400 to 600 feet wide across the center of the section and in a small canyon on the eastern side of the section.

From the foregoing it is apparent that no exposures of the uranium bearing Salt Wash sandstone appear in this area. The possibilities of uranium ore in the Salt Wash under the surface are, however, very good. This is based on the proximity of the important Blanding Mines area which has yielded thousands of tons of uranium-vanadium ore and is the most important producer from the Salt Wash in San Juan County, Utah. (See attached map.)

In addition to the important ore bodies discovered on the natural outcrops there have been many others found by drilling in three separate exploration programs by Federal agencies. The area of outcrop of the Salt Wash was thoroughly explored during these earlier programs but the thickness of overburden to the east toward Section 36 discouraged deeper drilling until recently. During the early part of 1954 the A. E. C. initiated a program to test the Salt Wash to the east of the previous tested area. The results of

this drilling are not known but are understood to be encouraging which would normally mean that ore had been encountered. Land south of Section 36 is at present (July, 1954) withdrawn by the A. E. C. for exploration.

Many studies of the trends of mineralization of the belt of ore bodies in the Blanding area clearly show that the trend is easterly or northeasterly from the Blanding Mines toward the general vicinity of Section 36.

The current A. E. C. drilling is following this trend and if favorable results are obtained the trend will be worked out so there will be no question of whether or not Section 36 is mineralized.

In the opinion of the writer, the client's holdings do contain uranium ore, the only question being the depth and closeness of drilling which would be needed to find it.

Field measurement of the stratigraphic units which would have to be penetrated in drilling show the following thicknesses: Cretaceous Burro Canyon formation, 90 feet; Jurassic Brushy Basin member of the Morrison formation, 400 feet; Westwater Canyon member of the Morrison formation, 100 feet to 150 feet. The minimum depth to favorable sandstone units in the Salt Wash member of the Morrison formation, based on these field measurements, would be 500 feet if drilled from the points where the Brushy Basin is exposed and approximately 600 feet if drilled through the Burro Canyon formation.

In summary, the area is located in a district that has a long history of uranium production. The area lies to the northeast of producing mines, and this is also the direction of the ore trend from the mines.

(d) Accessibility

The property is easily accessible, being located six miles west of Blanding, Utah, and served by two routes, one of which is Utah Highway 95 from Blanding, Utah, and down Cottonwood Canyon road; and the other is via Bluff road and north up Cottonwood Canyon.

(e) Availability of Manpower, materials, supplies and equipment:

Manpower, materials, supplies, equipment, etc. are available from Blanding, Utah, six miles away.

5. THE EXPLORATION PROJECT

(a) Objective

The sole objective of the exploration program is the discovery of uranium-vanadium ore.

(b) Proposed Work

The program of proposed work submitted for your consideration and examination is, at best, only tentative, since it is fully realized that at this stage neither the full scope of the project, if approved, nor the direction it will take, can be determined with any certainty. With these limitations in mind, it is possible to formulate a general plan of exploration which may serve as a basis for later discussions between the corporation and the DMEA.

So far as may be anticipated at this time, the exploratory work may be divided conveniently into three stages; the work in each new stage dependent upon the results obtained in the stage just completed. No rigid rules can be laid down, as any program to be successful must be reasonably flexible to permit alterations in plans as new data become available.

Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

It is obvious that the major costs for any program in the area will be represented by the cost of drilling. The amount of drilling required to thoroughly prospect the ground will be the basic factor governing the length of the project, and this factor, in turn, will largely control the overall costs. It is important, therefore, that some tentative drilling footages and depths should be determined in order that a basis may be established for submitting this application to your agency.

Phase 1 - Reference to Plate 1 (following Page 6) will show the approximate number of holes, spaced on 1,000 foot center, which could be drilled within acreage available for exploration. It will be noted that Section 36 claim group has been divided into three separate phases. Holes drilled on this coordinate spacing would be for the primary purpose of obtaining a better understanding of the sub-surface geologic conditions, especially those related to thicknesses, characteristics and mineralization of the formation. Data obtained in this Phase 1 drilling will help to establish within close limits the depths where coring of the formation should be commenced in subsequent holes.

It must be noted at this time that the drilling depths mentioned in Dr. Stokes' report are somewhat underestimated. More recent information indicates that it will require about 750 feet of drilled hole to penetrate through the Salt Wash sandstone at the point of maximum depth. This figure has been used as a basis for calculation for total footage.

The number of holes and the drilling footages for the area (Plate 1) may be estimated as follows:

Phase 1:	56 holes	732 feet Average Depth	41,000 Total Footage

It may be noted that the coordinate lines of the grid have been oriented in such a way as to be normal to what is considered the mineralized zone trend.

Although the exact thickness of the Salt Wash sandstone is not known, it has been estimated for calculation purposes that 125 feet of coring will be necessary to penetrate this unit. This figure may possibly be reduced after several holes have been drilled and the mineralized zone definitely established.

Using this average for Phase 1, it is estimated that the fifty-six holes will require about 7,000 feet of coring and about 34,000 feet of plugging with rotary bits.

It is suggested that core diameters should not be less than BX in size. The diameter of the hole from the surface to the top of the cored section will depend upon the equipment employed by the drilling contractor.

It is proposed to carry out standard radio-metric drill-hole logging during this and subsequent phases of the work.

Phase 2 - The overlay on Plate 1 (following page 6) indicated the approximate number of holes required to explore the property on a 500-foot spacing.

Assuming for estimation purposes that such a program were carried out the footage and holes to be drilled may be calculated as follows:

56 holes	740 Feet Average Depth	41,400 Total Footage

It must be noted that the average depth of the holes varies somewhat in Phases 1 and 2 because of the varying number of holes in area 1 and 2 as indicated on Plate 1.

On the basis of 125 feet of coring per hole, the total cored footage would amount to 7,000 feet, leaving a balance of 34,400 feet of plug-hole drilling.

Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

Summary of Phases 1 and 2

A recapitulation of the drilling footages in Phases 1 and 2 as follows:

Phase	Number of Holes	Feet of Coring	Feet of Plugged Drilling	Total Feet
1	56	7,000	34,000	41,000
2	56	7,000	34,400	41,400
	112	14,000	68,400	82,400

Area (See Plate 1)	Number of Holes	Average Depth	Total Feet
1	16	650	10,400
2	96	750	72,000
	112		82,400

The 82,400 feet shown above for Phases 1 and 2 would represent the optimum possible footage.

If no favorable indications of ore, or actual ore, are discovered in this amount of drilling, Phase 3 would be automatically discontinued. However, if reasons existed for closer spacing or, say a 250 grid located around holes showing mineralization or ore, Phase 3 of the program would become effective.

Phase 3 - The maximum amount of drilling which may be required in this phase is less easily calculated than for the previous two phases. The objective of this phase is to outline any favorable ground with more closely spaced holes, in some cases this interval may be as small as 50 feet.

If we assume for calculation purposes that 25 per cent more drilling is required to establish a deposit found in Phase 1 and 2 drilling, an additional 20,600 feet would be required.

Summary of Phases 1, 2 and 3

According to our estimates, a total of approximately 103,000 feet of drilling will be required for this project.

(c) Time of Work

The work will start within three weeks after the loan is granted, and will be completed within 12 months.

(d) Operating Experience and Background of Applicant

The project will be under the supervision of the following persons:

1. Paul S. Dixon - President, General Manager and Director

Education:

B. S. Degree, B. Y. U., Provo, Utah.
M.B.A. Degree, New York University Graduate School of Business Administration

Employment History:

Radio Service Corporation of Utah, Salt Lake City, Utah, 1945 to current date, Corporate Management; Equity Conservation Corporation, 270 Madison Avenue, New York City, 1941 to 1945, Vice-President and Office Manager; Bank of Manhattan Company, 40 Wall Street, New York City, Chemical Bank and Trust Company, New York City, Irving Trust Company, New York City, 1929 to 1941, Banking Operation Supervisor Real Estate Management.

Professional Affiliations:

American Institute of Real Estate Appraisors; Society of Residential Appraisors; Salt Lake Real Estate Board; National Association Real Estate Boards.

2. Virgil V. Peterson - First Vice-President and Director

Education:

A. B. Degree, Department of Geology, B.Y.U. Provo, Utah

Employment History:

Land and Lease Operator, Salt Lake City, Utah, 4 years; Secretary-Treasurer and Director, Topside Oil Company, Denver, Colorado, 2 years; Secretary-Treasurer and Director, Oro Grande Placers Corporation, S. A., Panama City, 7 years; Director Potash Chemical Company, Salt Lake City, Utah.

3. Willis L. Peterson - Second Vice-President and Director

Education:

Geological Studies, B.Y.U., Provo, Utah.

Employment History:

Sales and Advertising Manager, Northern Natural Gas Company, Omaha, Nebraska, 10 years; Associated with Topside Oil Company, Denver, Colorado, 4 years; Oil and Gas Lease Operator, 2 years; Procurer and Inspector of Uranium Properties, 1 year; President and General Manager, W. L. Peterson Company, Salt Lake City, Utah, 12 years.

4. Webster W. Decker - Secretary-Treasurer and Director

Education:

C.P.A. State of Utah.

Experience:

Private Accounting Practice, 4 years; General Accountant for Bigelow-Sanford Carpet Company, New York City, 2 years; Controller for Standard Brands Subsidiary, New York City, 2 years; Assistant

Treasurer for North American Phillips Company, New York City, 4 years; Cost Accountant for E. R. Squibb & Sons, New York City, 4 years.

5. Sherman D. Gardner - Field Supervisor and Director

Education:

B. S. Degree, Department of Geology, University of Utah, 1950.

Employment History:

2 years as Mining Engineer in exploration and production, Iron County, Utah, and Ruth, Nevada; Exploration Geologist for The Ohio Oil Company, Salt Lake City, Utah, 2 years; Field Supervisor for Trans-Western Uranium Corporation, 6 months.

6. Arnold L. Brown - Chief Engineer

Education:

B. S. Degree, Mining Engineering, University of California, 1950.

Employment History:

3-1/2 years in Engineering and Mine Production, Ruth, Nevada; 16 months as Job Superintendent in Heavy Construction, San Francisco, California.

6. ESTIMATE OF COSTS

Costs for the project have been projected on a twelve-month period for purposes of estimation, and we have used the total drilling footage of 103,000 as a basis for calculations. These following costs, therefore, are based on a maximum figure, and for this reason the cost of the entire project will be considered as a whole.

Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

Phases 1, 2 and 3

(a) Independent Contracts

(1)	103,000 feet drilling @ $4.00 per foot (includes stand-by time, casings left in hole, etc.)	$412,000.00
(2)	Clearing drill sites, bulldozing, etc.	10,000.00
(3)	Assaying ~~650~~ 1040 samples @ $5.00 each	5,200.00
	Sub-Total	$415,200.00 ? 427,200.00

(b) Labor, Supervision and Consultants

(1)	Common Labor	
	3 Men @ $400 per month ($1,200 x 12)	14,400.00
(2)	Geologist ($600 per month x 12)	7,200.00
(3)	Recording Clerk ($300 per month x 12)	3,600.00
(4)	Superintendent ($800 per month x 12)	9,600.00
(5)	Consultants, Mining, Engineering and Geology	4,000.00
	Sub-Total	$38,800.00

(c) Operating Materials and Supplies 4,000.00 ✓

(d) Operating Equipment

(1)	Truck	4,000.00
(2)	Jeep Station Wagon	3,000.00
	Sub-Total	7,000.00 ✓

(f) Buildings

(1)	Butler Building with core storage facilities, equipment, etc.	3,500.00 ✓

(g) Miscellaneous 7,500.00

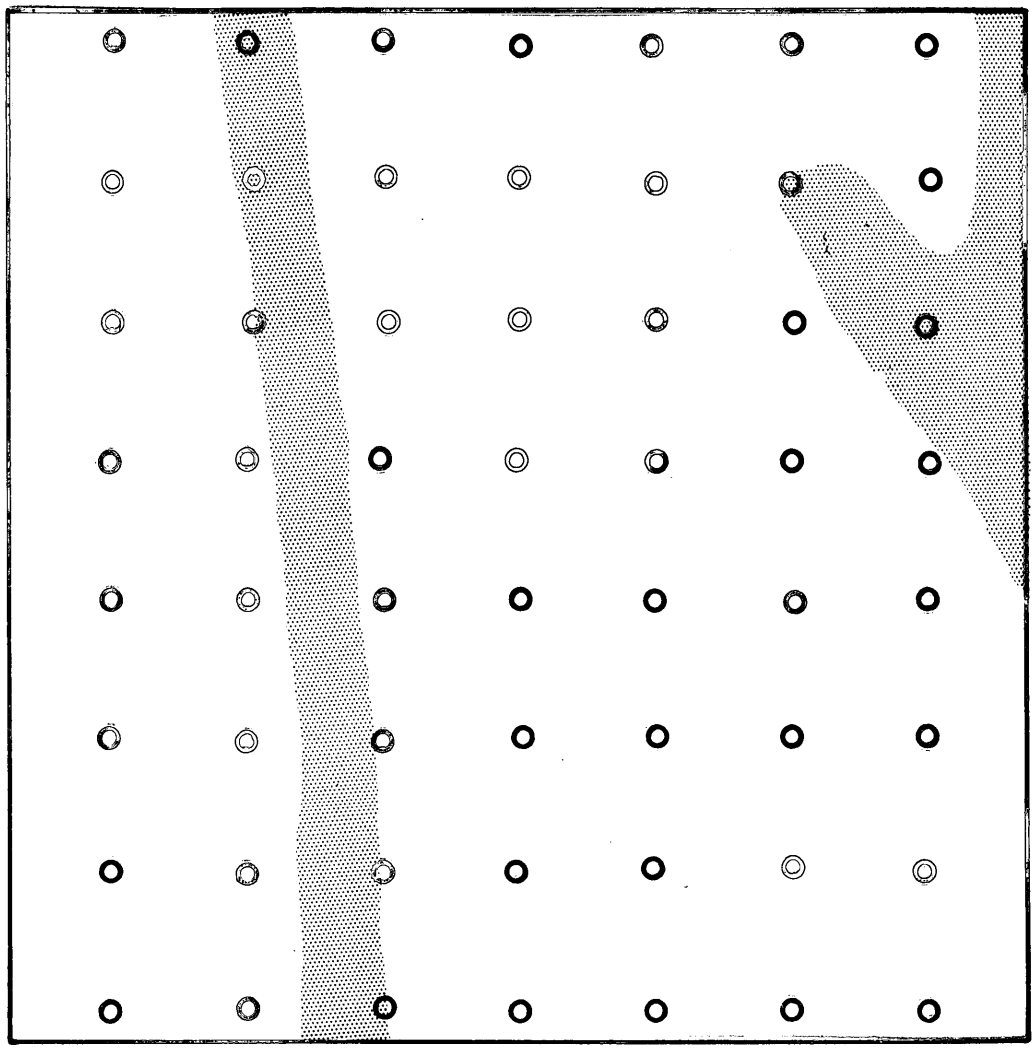
Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

Summary of Estimated Costs

		427,200.00
(a)	Independent Contracts	$415,200.00 ?
(b)	Labor, Supervision and Consultants	38,800.00
(c)	Operating Materials and Supplies	4,000.00
(d)	Operating Equipment	7,000.00
(f)	Buildings	3,500.00
(g)	Miscellaneous	7,500.00
		$476,000.00
(h)	Add 10% for Contingencies	47,600.00
	Total Estimated Costs	$523,600.00
		12,000
		535,600.00

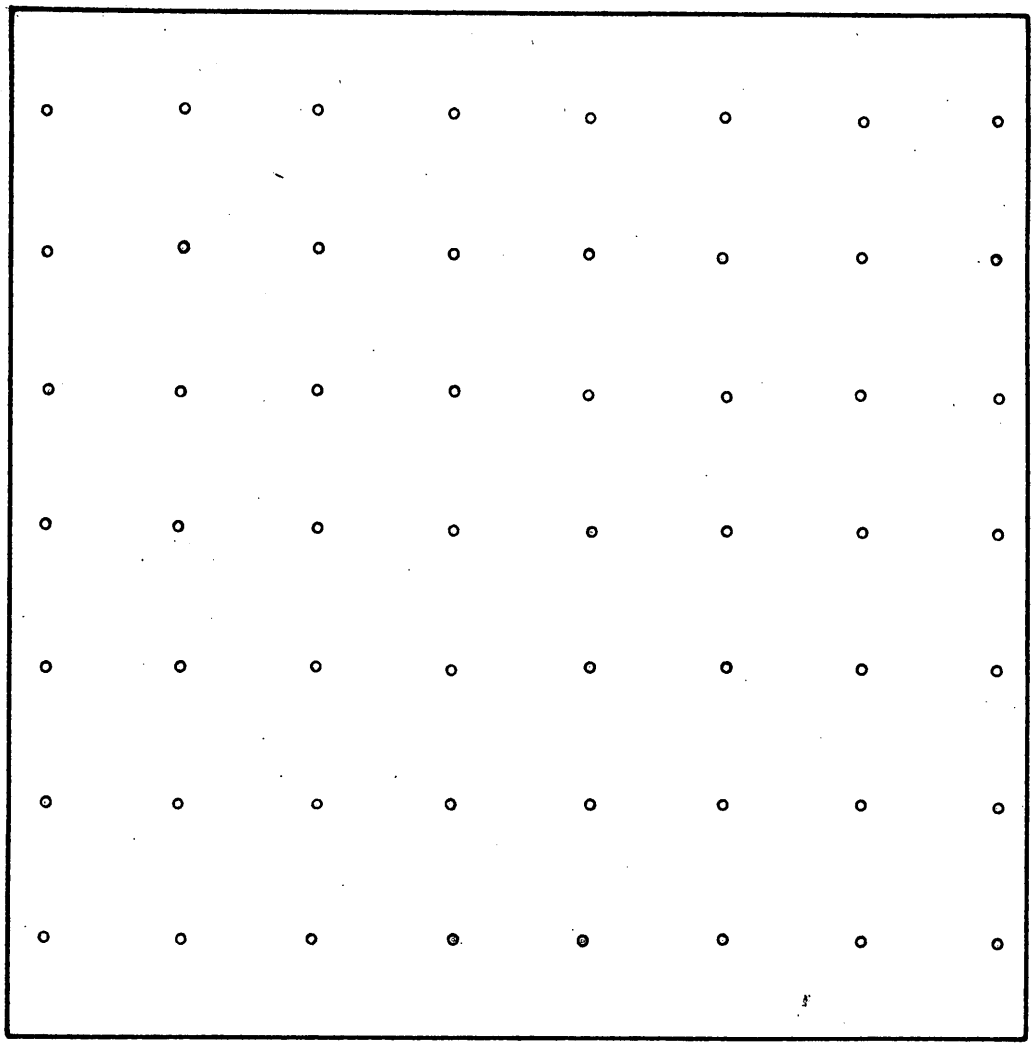
7. PARTICIPATION OF THE CORPORATION

The Corporation is prepared to furnish its share of the cost of the proposed project in accordance with the regulation of government participation.



PHASE 2.– 500' GRID SPACING
56 HOLES

TO ACCOMPANY DMEA LOAN APPLICATION. — PLATE I



SECTION 36, T. 36 S., R. 21 E.
SAN JUAN COUNTY- UTAH

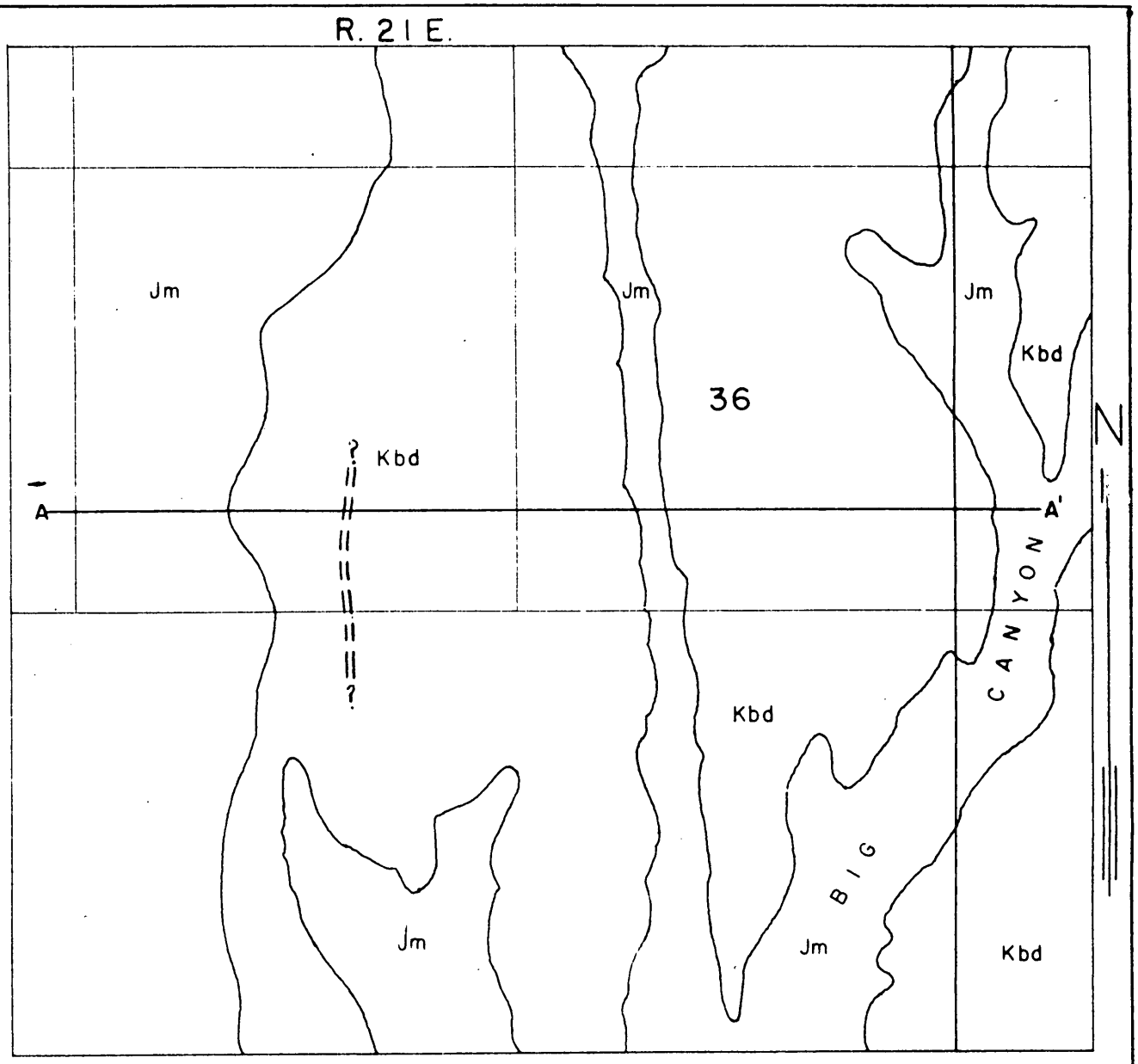
TRANS-WESTERN URANIUM CORP.

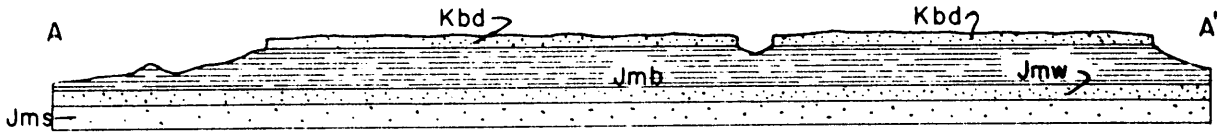
PHASE I. - 1000' GRID SPACING
56 HOLES (STAGGERED)

SCALE: 1" = 100'

AREA 1

AREA 2





Geologic Section Along Line A—A'

GEOLOGIC MAP OF SECTION 36, T. 36 S., R. 21 E.

SCALE

0 1/2 1 MILE

Kbd	Burro Canyon fm. & Dakota ss.
Morrison fm. Jmb	Brushy Basin mem.
Morrison fm. Jmw	Westwater Canyon mem.
Morrison fm. Jms	Salt Wash mem.

GEOPROFESSIONAL SERVICES INC.
1311 WALKER BANK BUILDING, SALT LAKE CITY, UTAH

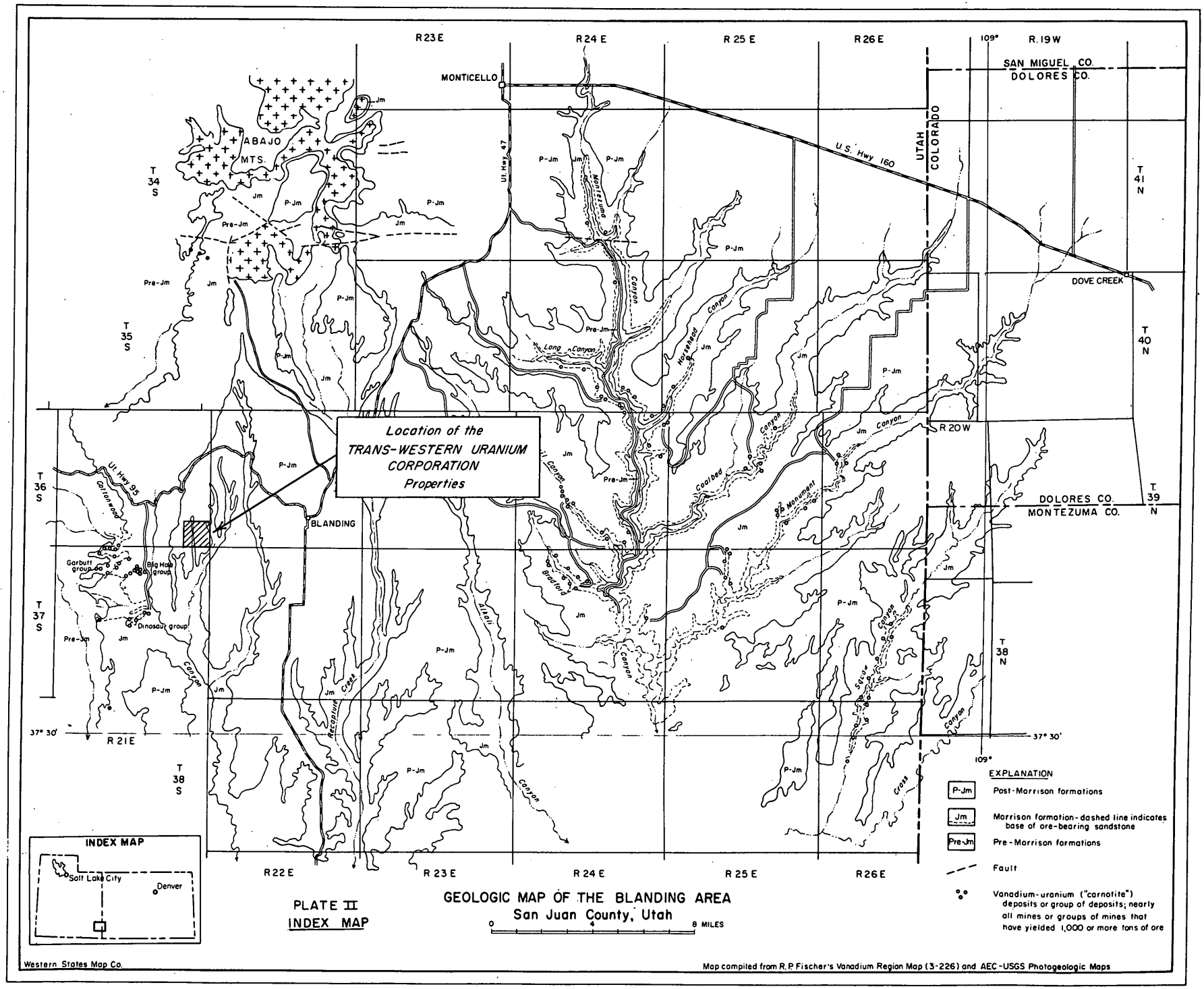


PLATE II
INDEX MAP

GEOLOGIC MAP OF THE BLANDING AREA
San Juan County, Utah

FORM 84 5M 2-51

ASSIGNMENT

Mineral Lease No. 6051

Grazing Lease No.

Certificate No. Application No. 4205

For and in consideration of the sum of Ten and no/100 - - - - - - - - - - - - - - - - - - Dollars

I (we) hereby sell, assign and transfer unto George D. Fehr

of 343 So. State St., Salt Lake City, Utah all my (our) right, title and interest in and to

ML# 6051; GL#; Cert. #; embracing the following described land:

ALL

of Section 36 Township 36S Range 21E

Salt Lake Meridian, in the County of San Juan State of Utah.

Witness my (our) hand(s) this 28th day of July, 195 4

Two Witnesses:

Quint E. O'Connor

Margaret L. Bailey

John A. Howell

x Margaret H. Howell

STATE OF ~~UTAH~~, Colorado

County of City & Denver } ss.

On the 28th day of July, A. D. 1954, personally appeared before me John A. Howell and Margaret H. Howell, his wife the signer(s) of the above instrument, who duly acknowledged to me that they executed the same.

Notary Public.
Residing at: Denver, Colo.

My commission expires Sept. 1

Affidavit of Citizenship of Assignee

I, (we) George D. Fehr on oath, do solemnly swear that I am (we are) at the present time (a)* native born Citizen(s) of the United States of America and over the age of twenty-one years.

George D. Fehr

Subscribed and sworn to before me this 30th day of July, 1954

Marjorie D. Shapley
Notary Public.

My commission expires Feb. 4, 1958

NOTE—*Insert here whether native born or naturalized. If naturalized, it will be necssary to file with this office Proof of Citizenship or Declaration of Intention to become a citizen, in the form of a letter or certificate of verification from Court of Issuance, and registration fee of $1.00.

NOTE—The original Certificate, Grazing Lease, or Mineral Lease must be produced. ASSIGNMENT FEE, $2.00.

UTAH STATE LAND OFFICE

FORM 84 5M 2-51

ASSIGNMENT

Mineral Lease No. 6051

Grazing Lease No.

Certificate No. Application No. 4205

For and in consideration of the sum of Ten and no/100- - - - - - - - - - - - - - - - - - - Dollars

I (we) hereby sell, assign and transfer unto George D. Fehr

of 343 So. State St., Salt Lake City, Utah all my (our) right, title and interest in and to

ML# 6051; GL#; Cert. #; embracing the following described land:

ALL

of Section 36 Township 36S Range 21E

Salt Lake Meridian, in the County of San Juan State of Utah.

Witness my (our) hand(s) this 28th day of July, 1954

Two Witnesses:

R. V. Redd

Earl B. McMaguem

X Earl H. Perkins

X Tamar Y. Perkins

STATE OF UTAH,
County of San Juan } ss.

On the 28th day of July July, A. D. 1954,

personally appeared before me Earl H. Perkins & Tamar Y. Perkins, his wife the signer(s) of the above instrument, who duly acknowledged to me that they executed the same.

B. Frank Redd
Notary Public.
Blanding Utah

My commission expires Oct 21, 1958

Affidavit of Citizenship of Assignee

I, (we) George D. Fehr on oath, do solemnly swear that I am (we are) at the present time (a)* native born Citizen(s) of the United States of America and over the age of twenty-one years.

George D. Fehr

Subscribed and sworn to before me this 30th day of July, 1954.

Marion W. Shipley
Notary Public.
Residing at Salt Lake City, Utah

My commission expires Feb. 4, 1958.

NOTE—*Insert here whether native born or naturalized. If naturalized, it will be necssary to file with this office Proof of Citizenship or Declaration of Intention to become a citizen, in the form of a letter or certificate of verification from Court of Issuance, and registration fee of $1.00.

NOTE—The original Certificate, Grazing Lease, or Mineral Lease must be produced. ASSIGNMENT FEE, $2.00.

UTAH STATE LAND OFFICE

FORM 84--5M-10-47 DL.

ASSIGNMENT

Mineral Lease No. 6051

Grazing Lease No.

Certificate No. Application No. 4205

For and in consideration of the sum of Ten and no/100- - - - - - - - - - - - - - - - Dollars

I (we) hereby sell, assign and transfer unto Trans-Western Uranium Corporation, a Utah Corporation,

of 412 Ness Building, Salt Lake City, Utah all my (our) right, title and interest in and to

ML # 6051; GL #; Cert. #; embracing the following described land:

ALL

of Section 36 Township 36S Range 21 E

Salt Lake Meridian, in the County of San Juan State of Utah.

Witness my (our) hand(s) this 13th day of October, 194 54

Two Witnesses:

Jack E. McCune S.L.C. Utah

Arthur Lyon S.L.C. Utah

George D. Fehr

STATE OF UTAH,

County of Salt Lake } ss.

On the 13th day of October A. D. 194 54

personally appeared before me George D. Fehr, a single man the signer(s) of the above instrument, who duly acknowledged to me that he executed the same.

Marjorie B. Smith

Notary Public.

My commission expires Feb. 4, 1958

Residing in Salt Lake City, Utah

Affidavit of Citizenship of Assignee

I, (we) on oath, do solemnly swear that I am (we are) at the present time (a)* Citizen(s) of the United States of America and over the age of twenty-one years.

Subscribed and sworn to before me this day of, 194

Notary Public.

My commission expires

NOTE— *Insert here whether native born or naturalized. If naturalized, it will be necessary to file with this office Proof of Citizenship or Declaration of Intention to become a citizen, in the form of a letter or certificate of verification from Court of Issuance, and registration fee of $1.00.

NOTE—The original Certificate, Grazing Lease, or Mineral Lease must be produced. ASSIGNMENT FEE 50c

UTAH STATE LAND OFFICE

Copy of
does not DMEA
requirements

APPLICATION TO DMEA

TRANS-WESTERN URANIUM CORPORATION

DMEA-3693

Prepared by:

WECHSLER AND COMPANY
1010 Vermont Avenue, N.W.
Washington, D. C.

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
Defense Minerals Exploration Administration

FEB 21 1955

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

Not to be filled in by applicant

Docket No. 3693
Metal or Mineral Uranium-Vanadium
Date Received 2-21-55
Estimated Cost $523,600
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: TRANS-WESTERN URANIUM CORPORATION
412 Ness Building, Salt Lake City, Utah

(*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. A Utah Corporation

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract See Report - Page 2

(*b*) State any mine name by which the property is known. See Report - Page 2

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
See Report - Page 2

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

(*e*) If you own the land, describe any liens or encumbrances on it See Report - Page 2

(*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. See Report - Page 2

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. See Report - Page 2, 3 & 4

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. See Report - Page 2, 3 and 4

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.
See Report - Page 5

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.
See Report - Page 5

16—66551-1

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

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. See Report - Page 5

(*c*) The work will start within 3 weeks days and be completed within 12 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See Report - Page 9

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: See Report

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.). See Report - Page 12

(*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. See Report - Page 12

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. See Report - Page 12

(*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. See Report - Page 12

(*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. See Report - 12

(*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. See Report - Page 12

(*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)? See Report - Page 13

(*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 February 15, 1955, 195__

TRANS-WESTERN URANIUM CORPORATION
(Applicant)

By Gordon Wetherby

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

: ss.
County of Salt Lake)

On the 15th day of January, 1955, personally appeared before me Paul S. Dixon and Webster W. Decker, who, being by me first duly sworn, did say that they are respectively the President and Secretary of Trans-Western Uranium Corporation, and that the foregoing instrument was signed in behalf of said corporation by authority of a resolution of the board of directors duly adopted at a lawful meeting attended by a quorum, and that Paul S. Dixon and Webster W. Decker duly acknowledged to me that said corporation executed the same and that the seal thereunto affixed is the seal of said corporation.

My commission expires
May 1, 1958

Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

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Section		Page
1.	Name of Applicant	1
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4.	Physical Description	2
	(a) History	2
	(c) Geologic Setting	2
	(d) Accessibility	5
	(e) Availability of Manpower, Materials, Supplies and Equipment	5
5.	The Exploration Project	5
	(a) Objective	5
	(b) Proposed Work	5
	(c) Time of Work	9
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Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

ILLUSTRATIONS

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APPENDIX

Lease, ML-6051, Cottonwood Wash, San Juan County, Utah	13
Assignments of Lease	13

Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

REPORT ACCOMPANYING APPLICATION TO DMEA

1. NAME OF APPLICANT

(a) The applicant is the Trans-Western Uranium Corporation, 412 Ness Building, Salt Lake City, Utah.

(b) The Trans-Western Uranium Corporation is a corporation organized in and doing business under the laws of the State of Utah.

(c) The following are the titles, names and addresses of officers:

(1) President and General Manager:

Paul S. Dixon
19 West on South Temple
Salt Lake City, Utah

(2) First Vice-President:

Virgil V. Peterson
Walker Bank Building
Salt Lake City, Utah

(3) Second Vice-President:

Willis L. Peterson
325 West 14th South
Salt Lake City, Utah

(4) Secretary and Treasurer:

Webster W. Decker
15 Exchange Place
Salt Lake City, Utah

(5) Field Supervisor:

Sherman D. Gardner
412 Ness Building
Salt Lake City, Utah

(6) Chief Engineer:

Arnold L. Brown
412 Ness Building
Salt Lake City, Utah

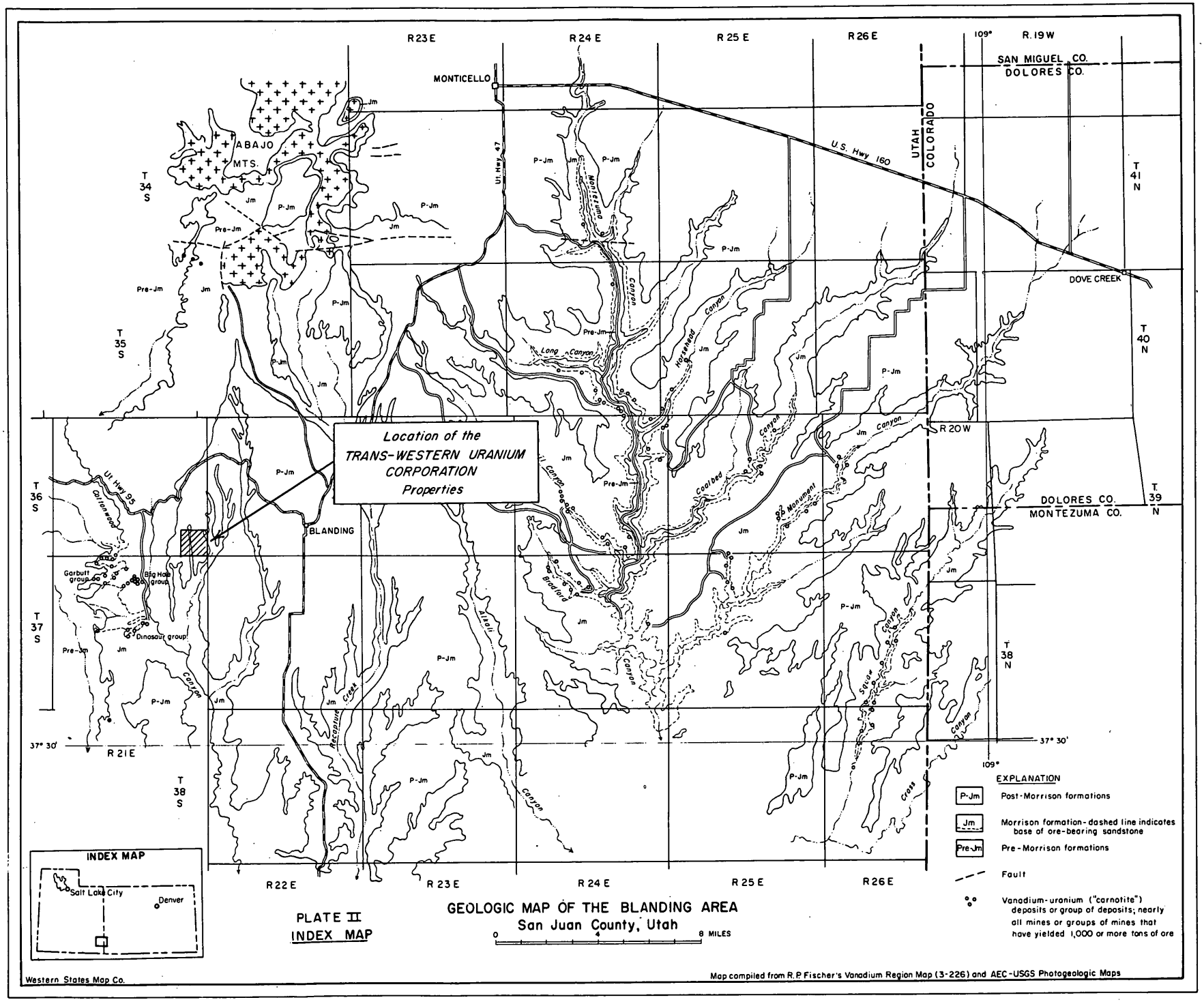


PLATE II
INDEX MAP

GEOLOGIC MAP OF THE BLANDING AREA
San Juan County, Utah

3. PROPERTY RIGHTS

State Uranium and Vanadium Lease, ML-6051, Cottonwood Wash, San Juan County, Utah, dated February 19, 1954, covers all of Section 36, Township 36 South, Range 21 East, Salt Lake Meridian. The Lease requires payment of annual rental of 50 cents per acre, and 12-1/2% royalty on gross value of or gross amount received for the ore. Work must be commenced by December 31, 1954. Annual reports must be made. The Lease is for a term of 10 years and as long thereafter as said leased minerals may be produced in commercial quantities. At the end of 20 years, if said lease is then in force, there shall be such re-adjustment of terms as the State may require as necessary in the interest of the State.

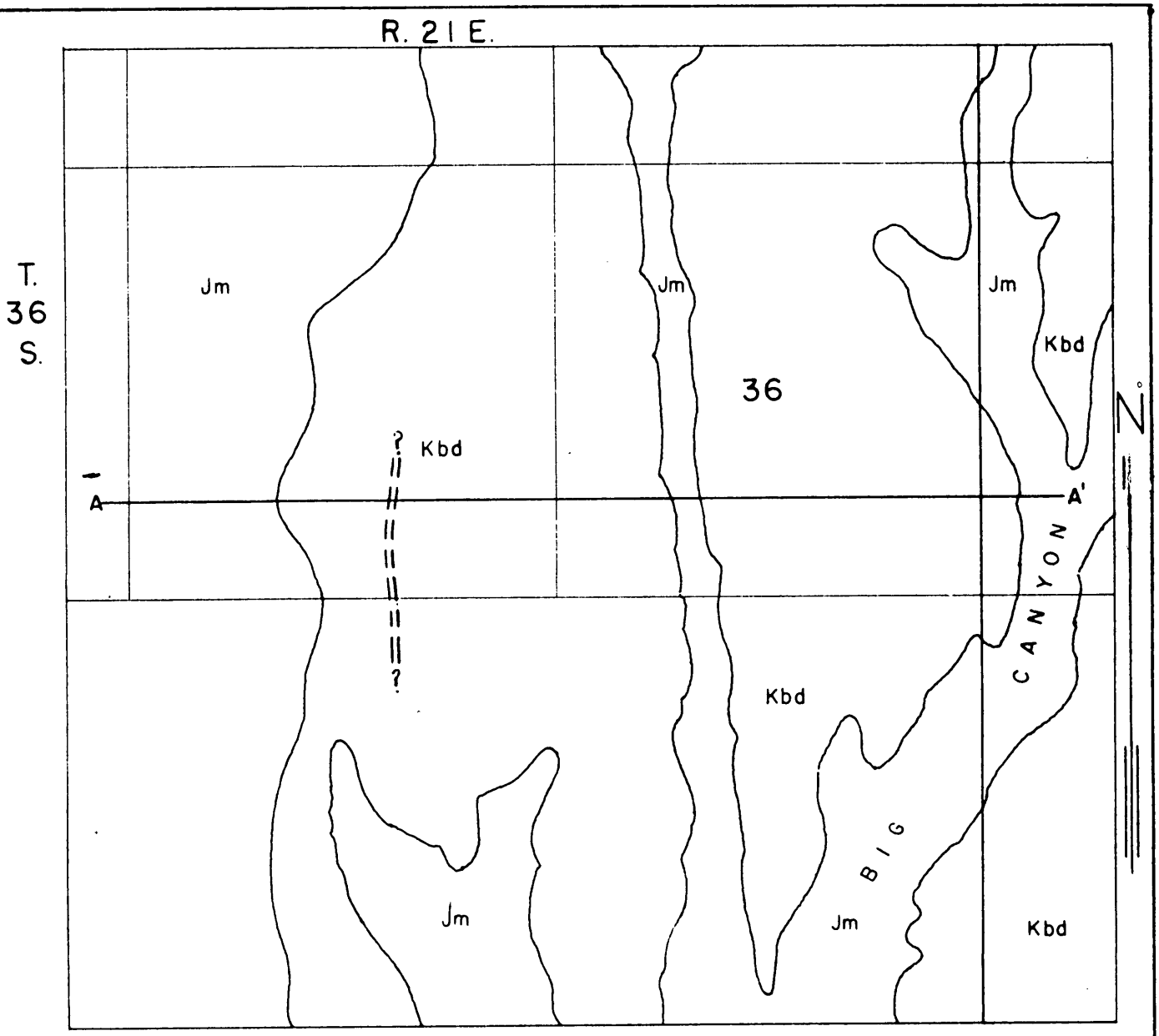
4. PHYSICAL DESCRIPTION

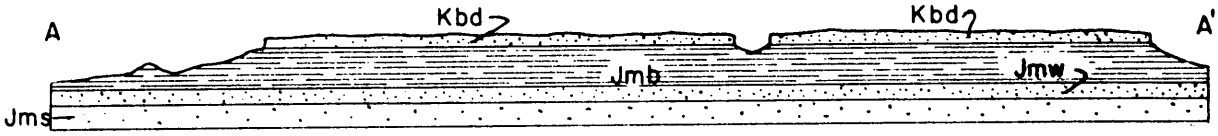
(a) History

At the time of submitting this application, no exploration or development work is being carried out on the above described property. Some drilling has been done by the A.E.C. within one mile of this section and roads have been constructed to these drill sites. One road recently constructed runs within 1/4 mile of the property line.

(c) Geologic Setting

The following is a geologic report on Section 36, Township 36 South, Range 21 East, written by Dr. William Lee Stokes for Trans-Western Uranium Corporation. Dr. Stokes, an eminent geologist, was at one time employed by the A.E.C. and has made an exhaustive study of the Blanding area. Dr. Stokes who is a Professor of Geology at the University of Utah, is also associated with the firm Geoprofessional Services, Inc. The following is his report:





Geologic Section Along Line A—A'

GEOLOGIC MAP OF SECTION 36, T. 36 S., R. 21 E.

SCALE

0 1/2 1 MILE

Kbd	Burro Canyon fm. & Dakota ss.
Morrison fm. Jmb	Brushy Basin mem.
Morrison fm. Jmw	Westwater Canyon mem.
Morrison fm. Jms	Salt Wash mem.

GEOPROFESSIONAL SERVICES INC.
1311 WALKER BANK BUILDING, SALT LAKE CITY, UTAH

Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

Section 36, T. 36 S., R. 21 E., is located approximately six miles west of Blanding, Utah. It is easily accessible by two routes; one is via Utah Highway 95 from Blanding and thence down the Cottonwood Canyon Road and the other is via the Bluff Road and thence north up Cottonwood Canyon.

Cottonwood Canyon lies to the east of Comb Ridge monocline in an area of nearly flat-lying strata. The youngest formation exposed on Section 36 is the Burro Canyon formation of early Cretaceous age and the oldest rock exposed is the upper 70 feet of the Brushy Basin member of the Morrison formation. The areal extent of the exposed Brushy Basin on Section 36 is very limited and the Burro Canyon forms at least 90 per cent of the surface. The Morrison is exposed in a north-south trending valley 400 to 600 feet wide across the center of the section and in a small canyon on the eastern side of the section.

From the foregoing it is apparent that no exposures of the uranium bearing Salt Wash sandstone appear in this area. The possibilities of uranium ore in the Salt Wash under the surface are, however, very good. This is based on the proximity of the important Blanding Mines area which has yielded thousands of tons of uranium-vanadium ore and is the most important producer from the Salt Wash in San Juan County, Utah. (See attached map.)

In addition to the important ore bodies discovered on the natural outcrops there have been many others found by drilling in three separate exploration programs by Federal agencies. The area of outcrop of the Salt Wash was thoroughly explored during these earlier programs but the thickness of overburden to the east toward Section 36 discouraged deeper drilling until recently. During the early part of 1954 the A. E. C. initiated a program to test the Salt Wash to the east of the previous tested area. The results of

this drilling are not known but are understood to be encouraging which would normally mean that ore had been encountered. Land south of Section 36 is at present (July, 1954) withdrawn by the A. E. C. for exploration.

Many studies of the trends of mineralization of the belt of ore bodies in the Blanding area clearly show that the trend is easterly or northeasterly from the Blanding Mines toward the general vicinity of Section 36.

The current A. E. C. drilling is following this trend and if favorable results are obtained the trend will be worked out so there will be no question of whether or not Section 36 is mineralized.

In the opinion of the writer, the client's holdings do contain uranium ore, the only question being the depth and closeness of drilling which would be needed to find it.

Field measurement of the stratigraphic units which would have to be penetrated in drilling show the following thicknesses: Cretaceous Burro Canyon formation, 90 feet; Jurassic Brushy Basin member of the Morrison formation, 400 feet; Westwater Canyon member of the Morrison formation, 100 feet to 150 feet. The minimum depth to favorable sandstone units in the Salt Wash member of the Morrison formation, based on these field measurements, would be 500 feet if drilled from the points where the Brushy Basin is exposed and approximately 600 feet if drilled through the Burro Canyon formation.

In summary, the area is located in a district that has a long history of uranium production. The area lies to the northeast of producing mines, and this is also the direction of the ore trend from the mines.

(d) Accessibility

The property is easily accessible, being located six miles west of Blanding, Utah, and served by two routes, one of which is Utah Highway 95 from Blanding, Utah, and down Cottonwood Canyon road; and the other is via Bluff road and north up Cottonwood Canyon.

(e) Availability of Manpower, materials, supplies and equipment:

Manpower, materials, supplies, equipment, etc. are available from Blanding, Utah, six miles away.

5. THE EXPLORATION PROJECT

(a) Objective

The sole objective of the exploration program is the discovery of uranium-vanadium ore.

(b) Proposed Work

The program of proposed work submitted for your consideration and examination is, at best, only tentative, since it is fully realized that at this stage neither the full scope of the project, if approved, nor the direction it will take, can be determined with any certainty. With these limitations in mind, it is possible to formulate a general plan of exploration which may serve as a basis for later discussions between the corporation and the DMEA.

So far as may be anticipated at this time, the exploratory work may be divided conveniently into three stages; the work in each new stage dependent upon the results obtained in the stage just completed. No rigid rules can be laid down, as any program to be successful must be reasonably flexible to permit alterations in plans as new data become available.

It is obvious that the major costs for any program in the area will be represented by the cost of drilling. The amount of drilling required to thoroughly prospect the ground will be the basic factor governing the length of the project, and this factor, in turn, will largely control the overall costs. It is important, therefore, that some tentative drilling footages and depths should be determined in order that a basis may be established for submitting this application to your agency.

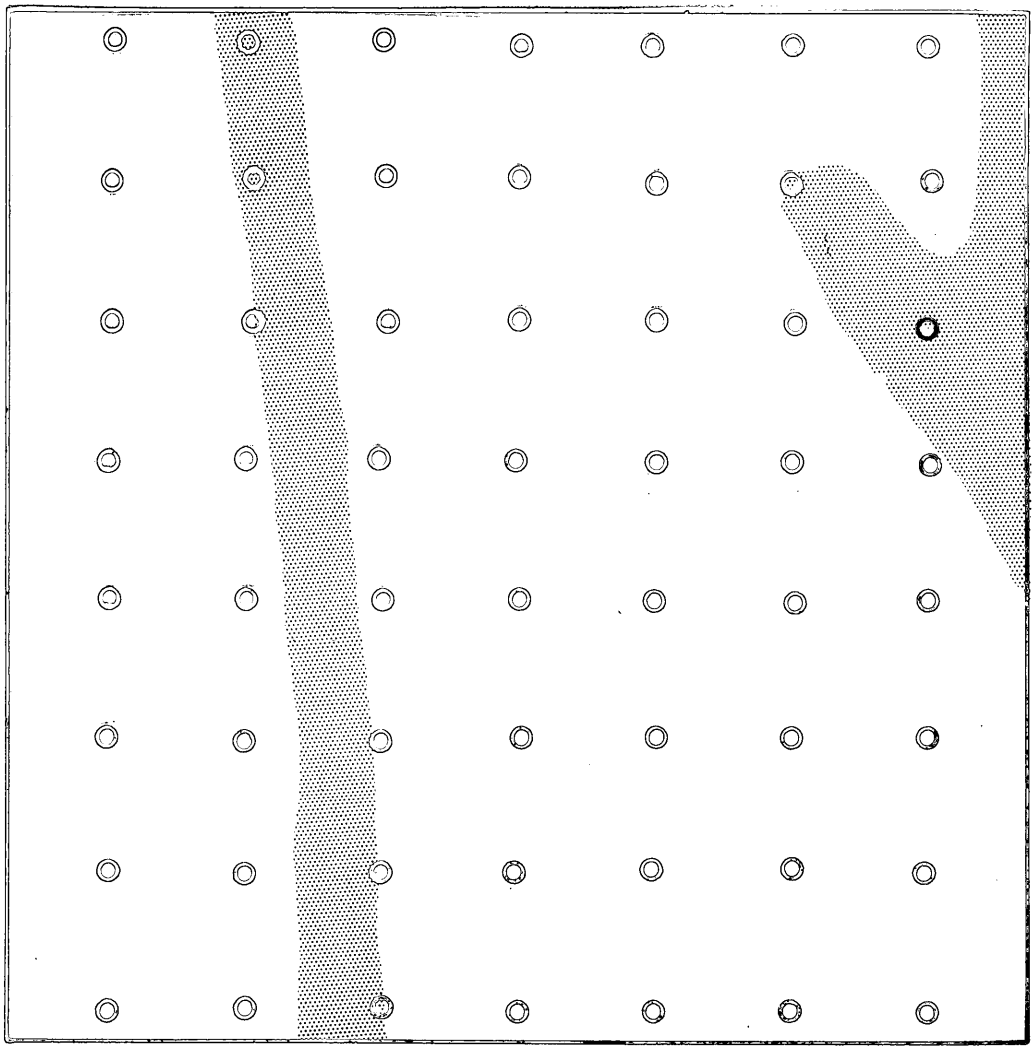
Phase 1 - Reference to Plate 1 (following Page 6) will show the approximate number of holes, spaced on 1,000 foot center, which could be drilled within acreage available for exploration. It will be noted that Section 36 claim group has been divided into three separate phases. Holes drilled on this coordinate spacing would be for the primary purpose of obtaining a better understanding of the sub-surface geologic conditions, especially those related to thicknesses, characteristics and mineralization of the formation. Data obtained in this Phase 1 drilling will help to establish within close limits the depths where coring of the formation should be commenced in subsequent holes.

It must be noted at this time that the drilling depths mentioned in Dr. Stokes' report are somewhat underestimated. More recent information indicates that it will require about 750 feet of drilled hole to penetrate through the Salt Wash sandstone at the point of maximum depth. This figure has been used as a basis for calculation for total footage.

The number of holes and the drilling footages for the area (Plate 1) may be estimated as follows:

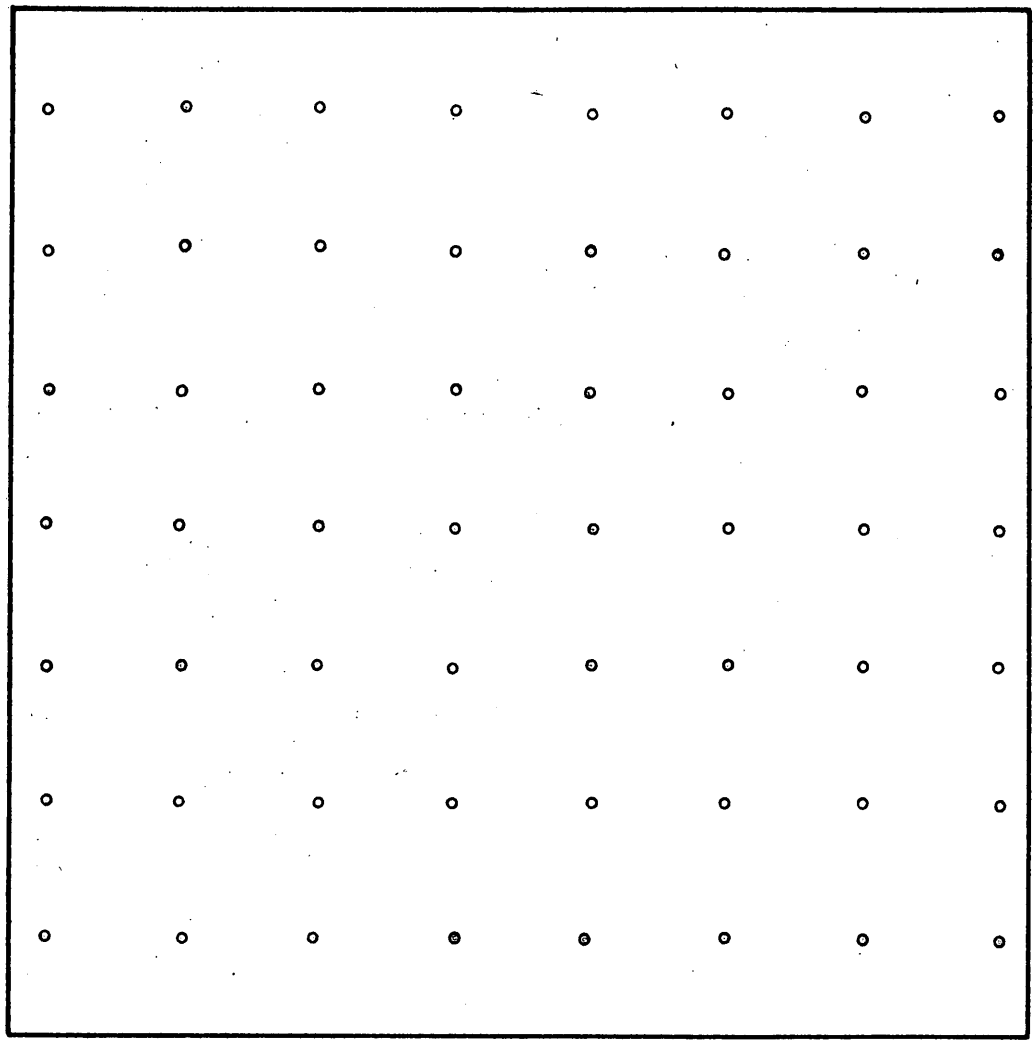
Phase 1:	56 holes	732 feet Average Depth	41,000 Total Footage

It may be noted that the coordinate lines of the grid have been oriented in such a way as to be normal to what is considered the mineralized zone trend.



PHASE 2.- 500' GRID SPACING
56 HOLES

TO ACCOMPANY DMEA LOAN APPLICATION. — PLATE I



SECTION 36, T. 36 S., R. 21 E.
SAN JUAN COUNTY- UTAH

TRANS-WESTERN URANIUM CORP.

PHASE I. - 1000' GRID SPACING
56 HOLES (STAGGERED)

SCALE: 1" = 100'

AREA 1

AREA 2

Although the exact thickness of the Salt Wash sandstone is not known, it has been estimated for calculation purposes that 125 feet of coring will be necessary to penetrate this unit. This figure may possibly be reduced after several holes have been drilled and the mineralized zone definitely established.

Using this average for Phase 1, it is estimated that the fifty-six holes will require about 7,000 feet of coring and about 34,000 feet of plugging with rotary bits.

It is suggested that core diameters should not be less than BX in size. The diameter of the hole from the surface to the top of the cored section will depend upon the equipment employed by the drilling contractor.

It is proposed to carry out standard radio-metric drill-hole logging during this and subsequent phases of the work.

Phase 2 - The overlay on Plate 1 (following page 6) indicated the approximate number of holes required to explore the property on a 500-foot spacing.

Assuming for estimation purposes that such a program were carried out the footage and holes to be drilled may be calculated as follows:

56 holes	740 Feet Average Depth	41,400 Total Footage

It must be noted that the average depth of the holes varies somewhat in Phases 1 and 2 because of the varying number of holes in area 1 and 2 as indicated on Plate 1.

On the basis of 125 feet of coring per hole, the total cored footage would amount to 7,000 feet, leaving a balance of 34,400 feet of plug-hole drilling.

Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

Summary of Phases 1 and 2

A recapitulation of the drilling footages in Phases 1 and 2 as follows:

Phase	Number of Holes	Feet of Coring	Feet of Plugged Drilling	Total Feet
1	56	7,000	34,000	41,000
2	56	7,000	34,400	41,400
	112	14,000	68,400	82,400

Area (See Plate 1)	Number of Holes	Average Depth	Total Feet
1	16	650	10,400
2	96	750	72,000
	112		82,400

The 82,400 feet shown above for Phases 1 and 2 would represent the optimum possible footage.

If no favorable indications of ore, or actual ore, are discovered in this amount of drilling, Phase 3 would be automatically discontinued. However, if reasons existed for closer spacing or, say a 250 grid located around holes showing mineralization or ore, Phase 3 of the program would become effective.

Phase 3 - The maximum amount of drilling which may be required in this phase is less easily calculated than for the previous two phases. The objective of this phase is to outline any favorable ground with more closely spaced holes, in some cases this interval may be as small as 50 feet.

If we assume for calculation purposes that 25 per cent more drilling is required to establish a deposit found in Phase 1 and 2 drilling, an additional 20,600 feet would be required.

Summary of Phases 1, 2 and 3

According to our estimates, a total of approximately 103,000 feet of drilling will be required for this project.

(c) Time of Work

The work will start within three weeks after the loan is granted, and will be completed within 12 months.

(d) Operating Experience and Background of Applicant

The project will be under the supervision of the following persons:

1. Paul S. Dixon - President, General Manager and Director

Education:

B. S. Degree, B. Y. U., Provo, Utah.
M.B.A. Degree, New York University Graduate School of Business Administration

Employment History:

Radio Service Corporation of Utah, Salt Lake City, Utah, 1945 to current date, Corporate Management; Equity Conservation Corporation, 270 Madison Avenue, New York City, 1941 to 1945, Vice-President and Office Manager; Bank of Manhattan Company, 40 Wall Street, New York City, Chemical Bank and Trust Company, New York City, Irving Trust Company, New York City, 1929 to 1941, Banking Operation Supervisor Real Estate Management.

Professional Affiliations:

American Institute of Real Estate Appraisors; Society of Residential Appraisors; Salt Lake Real Estate Board; National Association Real Estate Boards.

2. Virgil V. Peterson - First Vice-President and Director

Education:

A. B. Degree, Department of Geology, B.Y.U. Provo, Utah

Employment History:

Land and Lease Operator, Salt Lake City, Utah, 4 years; Secretary-Treasurer and Director, Topside Oil Company, Denver, Colorado, 2 years; Secretary-Treasurer and Director, Oro Grande Placers Corporation, S. A., Panama City, 7 years; Director Potash Chemical Company, Salt Lake City, Utah.

3. Willis L. Peterson - Second Vice-President and Director

Education:

Geological Studies, B.Y.U., Provo, Utah.

Employment History:

Sales and Advertising Manager, Northern Natural Gas Company, Omaha, Nebraska, 10 years; Associated with Topside Oil Company, Denver, Colorado, 4 years; Oil and Gas Lease Operator, 2 years; Procurer and Inspector of Uranium Properties, 1 year; President and General Manager, W. L. Peterson Company, Salt Lake City, Utah, 12 years.

4. Webster W. Decker - Secretary-Treasurer and Director

Education:

C.P.A. State of Utah.

Experience:

Private Accounting Practice, 4 years; General Accountant for Bigelow-Sanford Carpet Company, New York City, 2 years; Controller for Standard Brands Subsidiary, New York City, 2 years; Assistant

Treasurer for North American Phillips Company, New York City, 4 years; Cost Accountant for E. R. Squibb & Sons, New York City, 4 years.

5. Sherman D. Gardner - Field Supervisor and Director

Education:

B. S. Degree, Department of Geology, University of Utah, 1950.

Employment History:

2 years as Mining Engineer in exploration and production, Iron County, Utah, and Ruth, Nevada; Exploration Geologist for The Ohio Oil Company, Salt Lake City, Utah, 2 years; Field Supervisor for Trans-Western Uranium Corporation, 6 months.

6. Arnold L. Brown - Chief Engineer

Education:

B. S. Degree, Mining Engineering, University of California, 1950.

Employment History:

3-1/2 years in Engineering and Mine Production, Ruth, Nevada; 16 months as Job Superintendent in Heavy Construction, San Francisco, California.

6. ESTIMATE OF COSTS

Costs for the project have been projected on a twelve-month period for purposes of estimation, and we have used the total drilling footage of 103,000 as a basis for calculations. These following costs, therefore, are based on a maximum figure, and for this reason the cost of the entire project will be considered as a whole.

Trans-Western Uranium Corporation
412 Ness Building
Salt Lake City, Utah

Phases 1, 2 and 3

(a) Independent Contracts

(1) 103,000 feet drilling @ $4.00 per foot (includes stand-by time, casings left in hole, etc.)	$412,000.00
(2) Clearing drill sites, bulldozing, etc.	10,000.00
(3) Assaying 650 samples @ $5.00 each	5,200.00
Sub-Total	$415,200.00

(b) Labor, Supervision and Consultants

(1) Common Labor	
3 Men @ $400 per month ($1,200 x 12)	14,400.00
(2) Geologist ($600 per month x 12)	7,200.00
(3) Recording Clerk ($300 per month x 12)	3,600.00
(4) Superintendent ($800 per month x 12)	9,600.00
(5) Consultants, Mining, Engineering and Geology	4,000.00
Sub-Total	$38,800.00

(c) Operating Materials and Supplies	4,000.00
(d) Operating Equipment	
(1) Truck	4,000.00
(2) Jeep Station Wagon	3,000.00
Sub-Total	7,000.00
(f) Buildings	
(1) Butler Building with core storage facilities, equipment, etc.	3,500.00
(g) Miscellaneous	7,500.00

Summary of Estimated Costs

(a)	Independent Contracts	$415,200.00
(b)	Labor, Supervision and Consultants	38,800.00
(c)	Operating Materials and Supplies	4,000.00
(d)	Operating Equipment	7,000.00
(f)	Buildings	3,500.00
(g)	Miscellaneous	7,500.00
		$476,000.00
(h)	Add 10% for Contingencies	47,600.00
	Total Estimated Costs	$523,600.00

7. PARTICIPATION OF THE CORPORATION

The Corporation is prepared to furnish its share of the cost of the proposed project in accordance with the regulation of government participation.

FORM 84 5M 2-51

ASSIGNMENT

Mineral Lease No. 6051
Grazing Lease No.
Certificate No. Application No. 4205

For and in consideration of the sum of Ten and no/100- - - - - - - - - - - - - - - - - - Dollars

I (we) hereby sell, assign and transfer unto George D. Fehr

of 343 So. State St., Salt Lake City, Utah all my (our) right, title and interest in and to

ML# 6051; GL#; Cert. #; embracing the following described land:

ALL

of Section 36 Township 36S Range 21E

Salt Lake Meridian, in the County of San Juan State of Utah.

Witness my (our) hand(s) this 28th day of July, 1954

Two Witnesses:

Quirk E. O'Connor — John A. Howell
Margaret L. Bailey — x Margaret H. Howell

STATE OF ~~UTAH~~, Colorado
County of Denver } ss.

On the 28th day of July, A. D. 1954, personally appeared before me John A. Howell and Margaret H. Howell, his wife the signer(s) of the above instrument, who duly acknowledged to me that they executed the same.

Notary Public.
Residing at: Denver, Colo.

My commission expires Sept. [illegible]

Affidavit of Citizenship of Assignee

I, (we) George D. Fehr on oath, do solemnly swear that I am (we are) at the present time (a)* native born Citizen(s) of the United States of America and over the age of twenty-one years.

George D. Fehr

Subscribed and sworn to before me this 30th day of July, 1954

Notary Public.

My commission expires Feb. 4, 1958

NOTE—*Insert here whether native born or naturalized. If naturalized, it will be necssary to file with this office Proof of Citizenship or Declaration of Intention to become a citizen, in the form of a letter or certificate of verification from Court of Issuance, and registration fee of $1.00.

NOTE—The original Certificate, Grazing Lease, or Mineral Lease must be produced. ASSIGNMENT FEE, $2.00.

UTAH STATE LAND OFFICE

FORM 84 5M 2-51

ASSIGNMENT

Mineral Lease No. 6051
Grazing Lease No.
Certificate No. Application No. 4205

For and in consideration of the sum of Ten and no/100- - - - - - - - - - - - - - - - Dollars

I (we) hereby sell, assign and transfer unto George D. Fehr

of 343 So. State St., Salt Lake City, Utah all my (our) right, title and interest in and to

ML# 6051; GL#; Cert. #; embracing the following described land:

ALL

of Section 36 Township 36S Range 21E

Salt Lake Meridian, in the County of San Juan State of Utah.

Witness my (our) hand(s) this 28th day of July, 1954

Two Witnesses:

R. V. Redd
Earl B. Mangum

X Earl H. Perkins
X Tamar Y. Perkins

STATE OF UTAH,
County of San Juan } ss.

On the 28th day of July July, A. D. 1954, personally appeared before me Earl H. Perkins & Tamar Y. Perkins, his wife the signer(s) of the above instrument, who duly acknowledged to me that they executed the same.

B. Frank Redd
Notary Public.
Blanding Utah

My commission expires Oct 21, 1954

Affidavit of Citizenship of Assignee

I, (we) George D. Fehr on oath, do solemnly swear that I am (we are) at the present time (a)* native born Citizen(s) of the United States of America and over the age of twenty-one years.

George D. Fehr

Subscribed and sworn to before me this 30th day of July, 1954.

Margaret D. Shipley
Notary Public.
Residing at Salt Lake City, Utah

My commission expires Feb. 4, 1958.

NOTE—*Insert here whether native born or naturalized. If naturalized, it will be necssary to file with this office Proof of Citizenship or Declaration of Intention to become a citizen, in the form of a letter or certificate of verification from Court of Issuance, and registration fee of $1.00.

NOTE—The original Certificate, Grazing Lease, or Mineral Lease must be produced. ASSIGNMENT FEE, $2.00.

UTAH STATE LAND OFFICE

FORM 84--5M-10-47 DL..

ASSIGNMENT

Mineral Lease No. 6051

Grazing Lease No.

Certificate No. Application No. 4205

For and in consideration of the sum of Ten and no/100- - - - - - - - - - - - - - - - Dollars

I (we) hereby sell, assign and transfer unto Trans-Western Uranium Corporation, a Utah Corporation,

of 412 Ness Building, Salt Lake City, Utah all my (our) right, title and interest in and to

ML # 6051; GL #; Cert. #; embracing the following described land:

ALL

of Section 36 Township 36S Range 21 E

Salt Lake Meridian, in the County of San Juan State of Utah.

Witness my (our) hand(s) this 13th day of October, 194 54

Two Witnesses:

Jack A. de Ojeda S.L.C. Utah

Arthur Lyon SLC Utah

George D. Fehr

STATE OF UTAH,

County of Salt Lake } ss.

On the 13th day of October A. D. 194 54

personally appeared before me George D. Fehr, a single man the signer(s) of the above instrument, who duly acknowledged to me that he executed the same.

Marjorie D. Shipley
Notary Public.
Residing in Salt Lake City, Utah

My commission expires Feb. 4, 1958

Affidavit of Citizenship of Assignee

I, (we) on oath, do solemnly swear that I am (we are) at the present time (a)* Citizen(s) of the United States of America and over the age of twenty-one years.

Subscribed and sworn to before me this day of, 194

Notary Public.

My commission expires

NOTE— *Insert here whether native born or naturalized. If naturalized, it will be necessary to file with this office Proof of Citizenship or Declaration of Intention to become a citizen, in the form of a letter or certificate of verification from Court of Issuance, and registration fee of $1.00.

NOTE -The original Certificate, Grazing Lease, or Mineral Lease must be produced. ASSIGNMENT FEE 50c

UTAH STATE LAND OFFICE

8/10/55 gla

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

RECEIVED AUG 10 1955

224 New Customhouse
Denver 2, Colorado

August 4, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Report of Examination, DMEA Docket 3693 (Uranium), Trans-Western Uranium Corporation, Sec. 36, T. 36 S., R. 21 E., San Juan County, Utah

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

Because of the negative results of the AEC drilling, the lack of outcrops of a potential ore horizon, and the depth to that horizon, we recommend that the application be denied.

DMEA Field Team, Region III

W. M. Traver

W. M. Traver

E. N. Harshman

E. N. Harshman

Enclosures

DMEA
Date Rec'd
AUG 4 1955

RECEIVED
AUG 10 1955
BUREAU OF MINES
Denver, Colorado

TRANSMITTED
AUG - 4 1955

Building 20
Denver Federal Center
Denver 2, Colorado
August 3, 1955

Region III

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw

Subject: Docket No. DMEA 3693, Trans-Western Uranium Corporation, Section 36, T. 36 S., R. 21 E, Blanding Mining District, San Juan County, Utah

Enclosed are the original and ten copies of the Summary Conclusions and Recommendations by W. D. McMillan, Mining Engineer and Donald Haynes, Geologist and the original and ten copies of an Engineering Report by W. D. McMillan covering Docket No. DMEA 3693.

The Trans-Western Uranium Corporation applied for exploration assistance in the amount of $523,600.00 to explore Section 36, T. 36 S., R. 21 E. by 103,000 feet of plug bit and core drilling.

The field examination was made on June 2, 1955. The Atomic Energy Commission had drilled 7 holes about 4,000 feet southwest of the southwest corner of Section 36. These holes penetrated the Salt Wash member of the Morrison formation with unfavorable results.

Because of the negative results of the A. E. C. drilling, the lack of outcrops of a potential ore horizon, and the depth to that horizon, it is recommended that the application be denied.

John F. Shaw
John F. Shaw
Supervising Mining Engineer

JFS:jw

cc: o/w 10 ✓
DMEA 3693
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3693

School Section 36

Trans-Western Uranium Corporation

Blanding Mining District

San Juan County, Utah

Uranium

W. D. McMillan, Mining Engineer
Bureau of Mines

Donald Haynes, Geologist
Geological Survey

DMEA 3693

SCHOOL SECTION 36
TRANS-WESTERN URANIUM CORPORATION
BLANDING MINING DISTRICT
SAN JUAN COUNTY, UTAH

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

W. D. McMillan, Mining Engineer
Bureau of Mines

Donald Haynes, Geologist
Geological Survey

TRANSMITTED
AUG - 4 1955

DMEA 3693
SCHOOL SECTION 36
TRANS-WESTERN URANIUM CORPORATION
BLANDING MINING DISTRICT
SAN JUAN COUNTY, UTAH

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

An application has been made to the Defense Minerals Exploration Administration for Government assistance in exploration of uranium on Section 36, Blanding Mining District, San Juan County, Utah. The applicant leases the property from the Utah State Land Board. The applicant proposed plug and core drilling at an estimated total cost of $523,600.00 for 103,000 feet of drilling in 140 holes. Government participation at 75 percent would be $392,700.00.

A field examination was made on June 2, 1955 and information was obtained from the Atomic Energy Commission on the results of their drilling in the area.

Section 36 is on a plateau near the western edge of the Great Sage Plains of Southeastern Utah at an elevation of about 7,000 feet, which is capped by the Cretaceous Burro Mountain formation except where two canyons have cut into the Brushy Basin member of the Jurassic Morrison formation. The potential ore bearing sandstone beds of the Salt Wash member of the Morrison formation are at a depth of 760 feet.

The U. S. Atomic Energy Commission drilled 7 holes located about 4,000 feet southwest of the southwest corner of Section 36. These holes penetrated the Salt Wash member of the Morrison formation with unfavorable results.

Because of the negative results of the A.E.C. drilling, the lack of outcrops of a potential ore horizon, and the depth to that horizon, it is recommended that DMEA application 3693 be denied without prejudice.

DMRA 3693

SCHOOL SECTION 36
TRANS-WESTERN URANIUM CORPORATION
BLANDING MINING DISTRICT
SAN JUAN COUNTY, UTAH

Engineering Report

By W. D. McMillan
Mining Engineer
Bureau of Mines

DMRA 3693

SCHOOL SECTION 36
TRANS-WESTERN URANIUM CORPORATION
BLANDING MINING DISTRICT
SAN JUAN COUNTY, UTAH

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DMEA 3693
SCHOOL SECTION 36
TRANS-WESTERN URANIUM CORPORATION
BLANDING MINING DISTRICT
SAN JUAN COUNTY, UTAH

INTRODUCTION

Trans-Western Uranium Corporation applied for Defence Minerals Exploration Administration assistance for exploration by diamond plug and core drilling of their lease on Section 36, Blanding District, San Juan County, Utah. Their proposal was for a first stage of 36 holes on a 700-foot grid spacing, followed by a second stage of 56 holes also on a 700-foot pattern, these holes to be in the centers of the Stage I drilling. If ore was formed in the first two stages, a third stage of 28 offset holes was proposed.

The estimated total amount of drilling was 103,000 feet in 140 holes at an estimated cost of $523,600.

An examination was made on June 2, 1955 by a Region III field team consisting of W. D. McMillan of the Bureau of Mines and Donald Haynes of the Geological Survey, accompanied by Sherman D. Gardner, Geologist for Trans-Western Uranium Corporation, and George H. Bradford, laborer for the corporation.

This examination and further consultation by Donald Haynes with members of the Atomic Energy Commission resulted in the examining team recommending denial of the application.

ACKNOWLEDGEMENTS

Data on the property was obtained from the experience of the Geological

Survey member of the examining team, and from Sherman B. Gardner, Geologist for the Corporation, who had several years experience in the district. The exploration branch of Atomic Energy Commission furnished information on the results of their exploration near the property.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The leased property is School Section 36, T. 36 S., R. 21 E., S.L.P.M., Blanding Mining District, San Juan County, Utah (Fig. 1). This section is on a plateau about 2 miles northeast of Cottonwood, Washington. It is reached by traveling southwest on State Highway 95 for 10 miles, and thence 4 miles northeast on an access road built by the A. E. C. to within 1/4 mile of the southern line of Section 36.

Blanding, 14 miles east, and Monticello, 36 miles northeast, are the nearest sources of supplies. The topography of the area is a flat plateau at an elevation of approximately 7,000 feet. This plateau is cut by two northsouth canyons on the eastern and western parts of Section 36 with widths at the top of approximately 900 feet and 500 feet respectively, and depths of 140 feet in the eastern canyon and 100 feet in the western canyon.

There is a moderate cover of pines, cedar, and sage brush. Access will be fairly easy by the new proposed roads up the canyons from State Highway 95, and drilling sites can be prepared at a reasonable cost.

The climate of the area is arid, with warm to cool summers and moderate winters, with infrequent periods of extreme cold. There may be heavy storms of short duration throughout the year, with accumulations of snow in the timbered areas for short periods, in the winter months.

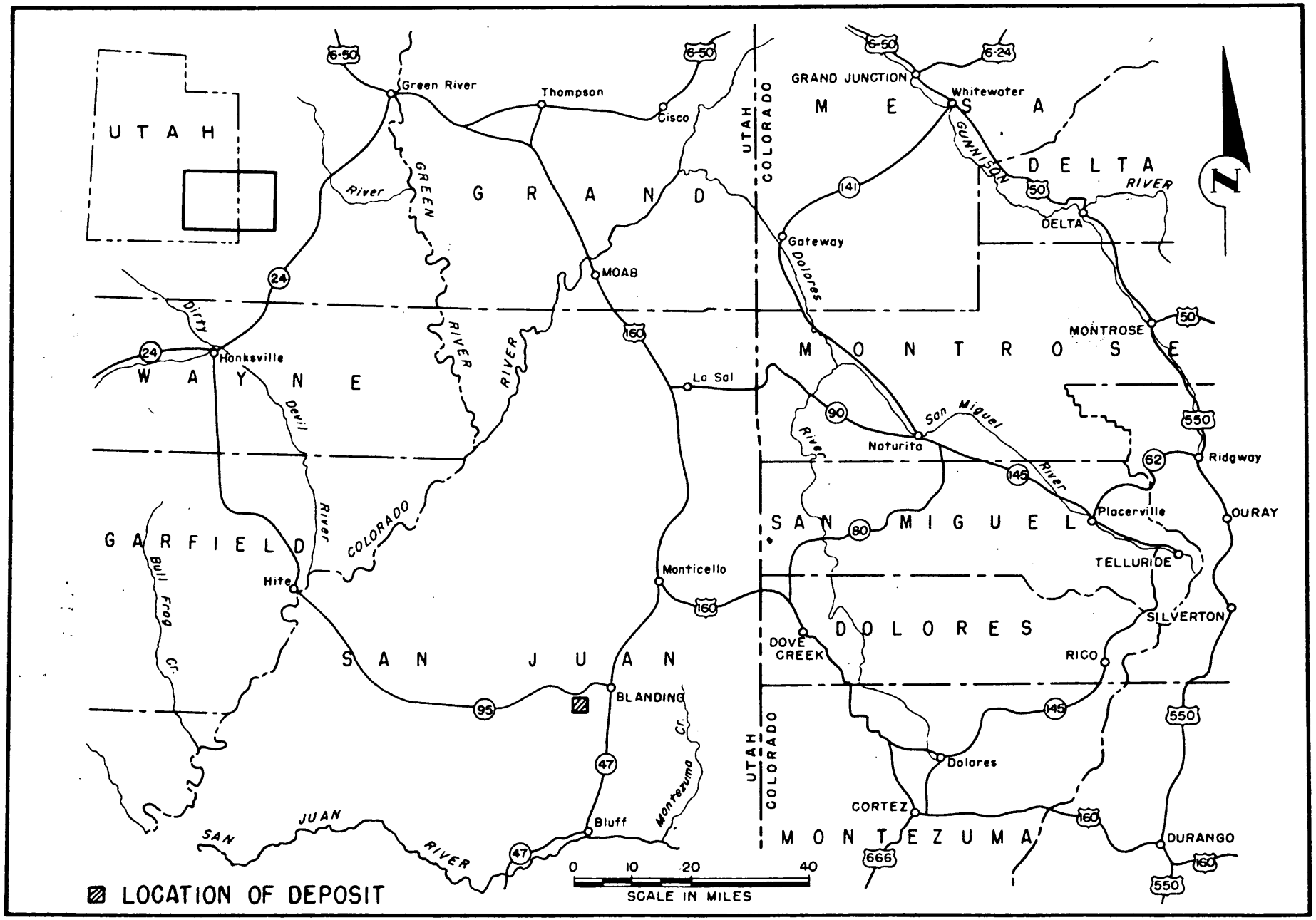


FIGURE 1 - LOCATION MAP, TRANS-WESTERN URANIUM CORPORATION PROPERTY, BLANDING MINING DISTRICT, SAN JUAN COUNTY, UTAH. DMEA 3693

Surface drilling and underground mining are feasible throughout the year.

The market for uranium ores from Section 36 is the receiving and treatment plant at Monticello, 36 miles northeast.

Mining lumber and timber are available at local saw mills, and there is an ample supply of domestic fuel on the claims. All power needs must be furnished by gasoline or diesel driven units. Water for drilling and domestic purposes must be hauled from Cottonwood, Washington, about 4 miles southwest of the section.

HISTORY, PRODUCTION, AND OWNERSHIP

The mining history of the area dates from exploration for vanadium after World War I. In recent years the Blanding Mines, about 2 miles southwest of the southwest corner of Section 36 have produced many thousands of tons of uranium-vanadium ore and are still producing. There has not been any production from Section 36.

The property is held under Utah State Uranium and Vanadium Lease ML-6051, dated February 19, 1954.

DESCRIPTION OF THE DEPOSITS

About 90 percent of the area of Section 36 is covered by the Cretaceous Burro Canyon formation which is approximately 90 feet thick. The remainder is covered by the Brushy Basin member of the Jurassic Morrison formation, which outcrops in the bottom of two canyons.

A section presented by Sherman D. Gardner, Geologist for the Corporation which was prepared from data obtained from the Blanding Mines and

the A. E. C. drilling about one half mile southwest of Section 36, gives estimated thickness of 430 feet Brushy Basin member, 150 feet of the Westwater Canyon, and 210 feet of the Salt Wash member. The uranium ore bearing sandstone bed of the Salt Wash member has an estimated thickness of 20 feet at a depth of 760 feet from the surface of the plateau.

MINABLE RESERVES

There are no minable reserves of ore.

PRESENT STATUS

Exploration and Development

No exploration has been performed on the property.

Mining and Milling Equipment and Other Facilities

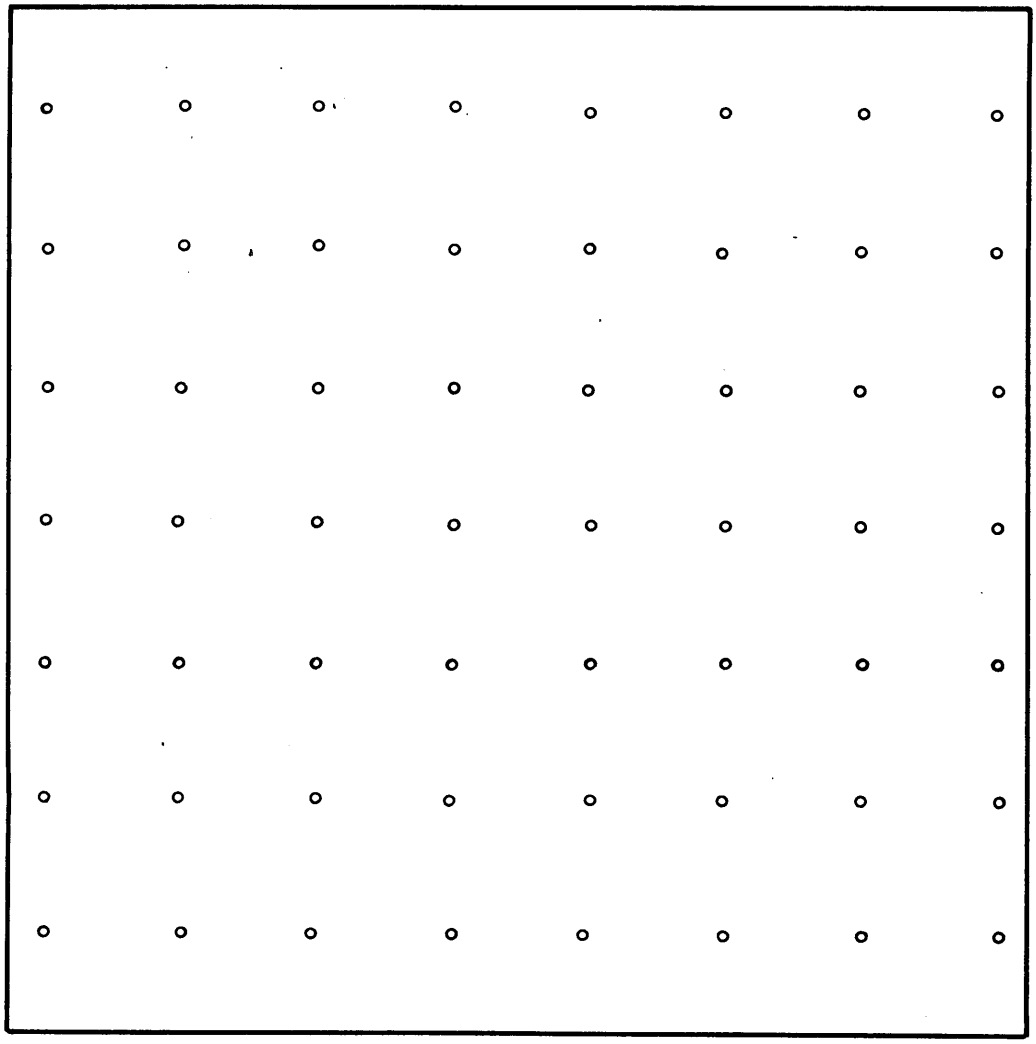
There are no mining and milling equipment or other facilities on the property.

PROJECT PROPOSALS WITH COSTS

The applicants proposed plug and diamond core drilling in three stages, set up to explore Section 36 by widely spaced drilling in the first and second stages, followed by closely spaced holes in a third stage to extend any ore found in the other two stages. The first stage drilling is shown on Fig. 2. This program consisted of 140 drill holes with an estimated total amount of drilling of 103,000 feet at an estimated cost of $523,600.00.

CONCLUSIONS

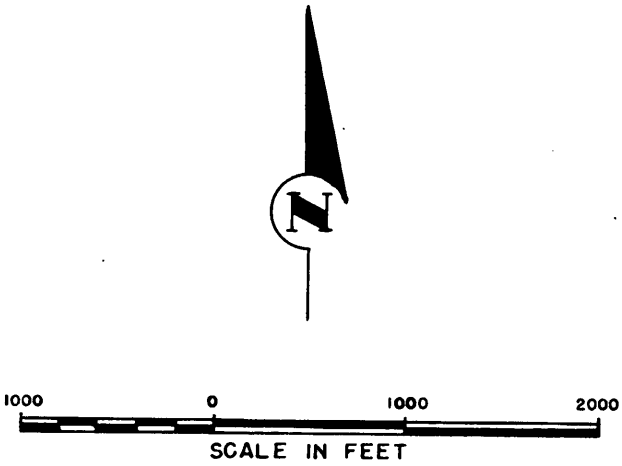
On Section 36, the ore bearing sandstone beds in the Salt Wash



SECTION 36, T. 36 S., R. 21 E.
SAN JUAN COUNTY, UTAH

L E G E N D

o Phase I - 1000' Grid spacing
56 holes (staggered)



N O T E
Taken from Applicant's map

FIGURE 2 -PROPOSED EXPLORATION, TRANS-WESTERN URANIUM CORP., SAN JUAN COUNTY, UTAH. DMEA 3693

member of the Jurassic Morrison formation is at a depth of 760 feet from the surface of the plateau. Atomic Energy Commission drilling 4,000 feet southwest of the southwest corner of Section 36 gave unfavorable results.

The examining team concludes that the chances of finding uranium ore on the property are unfavorable.

RECOMMENDATIONS

It is recommended that DMEA application No. 3693 be denied without prejudice because of the lack of outcrops of a potential ore horizon, the depth to that horizon and the unfavorable results from Atomic Energy Commission drilling near-by.

/jw

IN REPLY REFER TO: DMEA
Date Rec'd JUL 20 1955
BUREAU OF MINES
Denver, Colorado

RECEIVED AUG 10 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

July 20, 1955

TRANSMITTED
AUG - 4 1955

Memorandum

To: DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3693 (Uranium), Trans-Western Uranium Corporation, San Juan County, Utah

Enclosed are 10 copies of a report by D. D. Haynes, U. S. Geological Survey, in which it is recommended that the application for Government assistance in exploring the subject property be denied.

The recommendation for denial is based on the following facts:

1) No favorable sandstone is known to underlie the claims, the nearest favorable belt having been outlined by AEC drilling 3,000 feet southwest of the south boundary of the subject property.

2) AEC drilling southwest of the property indicates that ore bodies are small and if present under the subject property could not be mined profitably at depths of 800 feet.

Since there appears to be little geological probability of discovering significant uranium deposits by the proposed exploration, the recommendation for denial of the request for exploration assistance is, in my opinion, justified.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (10)

ENHarshman:arh

MINERAL DEPOSITS
DMEA
RECEIVED
JUL 18 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO
Date Rec'd.
JUL 20 1955
BUREAU OF MINES
Denver, Colorado

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

July 14, 1955

Memorandum

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

From: J. William Hasler

Subject: DMEA 3693, Trans-Western Uranium Corporation, Monticello Mining District, San Juan County, Utah

The Trans-Western Uranium Corporation, DMEA docket 3693, applied for a DMEA loan to explore for uranium in the Monticello Mining District, San Juan County, Utah.

The property was appraised on June 2 by a Region III examining team, composed of W. D. McMillan, U. S. Bureau of Mines, and D. D. Haynes, U. S. Geological Survey, accompanied by Sherman D. Gardner and George H. Bruelford, representatives of the applicant.

The rocks exposed in the vicinity of the subject area are the Cretaceous Dakota formation and the Jurassic Morrison formation. The Salt Wash sandstone of the Morrison formation is the major uranium-producing horizon in this area. The uranium-vanadium ore deposits in the area occur in thin roughly-tabular masses, in thin- to thick lenticular bodies and in small high-grade pockets which surround mineralized fossil trees or trash pockets of carbonaceous material. The mineralized deposits in this area appear to be localized in the outer convex side of old stream channels where the sandstone and mudstone interfinger.

The Atomic Energy Commission has outlined a favorable belt of ground in secs. 2 and 3, T. 37 S., R. 21 E. The belt has not been delineated east of sec. 2, but if it were extended along its known trend, it would be at least 3,000 feet south of the applicant's property. If diamond drilling by the La Sal Mining Company in sec. 2 should outline a favorable zone that can be shown to extend in the subject property, a reappraisal might be considered. However, the results of the AEC exploration work indicates that any ore body found in the vicinity of sec. 36 would not contain any more than 3,000 tons of ore-grade material. The drilling depths required to test the ground by the applicant averages about 800 feet. It would require an ore body of approximately 15,000 tons or more of 0.23 percent U_3O_8 to mine profitably at this depth.

It is concluded that the possibility of finding an ore body of the size required to mine at a profit from a depth of 800 feet is not likely, and that the only favorable belt established to date lies out of the subject property. It is, therefore, recommended that the application for DMEA assistance be denied.

We are enclosing 12 copies of the geologic report by D. D. Haynes with accompanying maps. We are also returning the brochure.

D. D. Haynes for
J. William Hasler,
Geologist

JWH/mlr

Enclosures

UNITED STATES DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
AUG 10 1955

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

DMEA 3693, Trans-Western Uranium Corporation, Monticello Mining District San Juan County, Utah

Uranium

Geologic Report

by

D. D. Haynes
U. S. Geological Survey

July 14, 1955

INTRODUCTION

Application (DMEA docket No. 3693) was made on February 21, 1955, by the Trans-Western Uranium Corporation for Government assistance in exploring for uranium in the Monticello Mining District, San Juan County, Utah. The applicant proposes to explore the leased area with a maximum of 103,000 feet of core and non-core drilling at a total cost of $525,600. The Government's share would be 75 percent, or $392,700.

The property was visited on June 2, 1955, by a Region III examining team composed of W. D. McMillan, U. S. Bureau of Mines, and D. D. Haynes, U. S. Geological Survey. The examining team was accompanied by Sherman D. Gardner and George H. Bruelford, representatives of the applicant.

The writer conferred with Mr. Phil H. Dodd of the U. S. Atomic Commission, Exploration Division, on evaluation of the propery.

GENERAL DESCRIPTION

The Trans-Western Uranium Corporation property is located in sec. 36, T. 36 S., R. 21 E., S.L.M., San Juan County, Utah (fig. 1). The property is accessible from Blanding, Utah, by traveling about 4 miles south on State Highway 47, thence about 7 miles west on State Highway 95, thence north about 4 miles on unimproved dirt roads to the property. The last 4 miles are U. S. Atomic Energy Commission drill roads and would be impassable after rains.

Topographically the area is a flat bench capped by the Cretaceous Dakota formation. There are two north-south trending canyons on the property, but they are no more than 125 feet deep. To the west and south of the property in Cottonwood Wash the Salt Wash member of the Morrison formation is exposed.

GEOLOGY

Stratigraphy

The rocks exposed in the vicinity of the subject area are, in decending order, the Cretaceous Dakota formation, and the Jurassic Morrison formation. The Jurassic Morrison formation is composed of the Brushy Basin member, the Westwater Canyon member and the Salt Wash sandstone member. Underlying the Morrison formation, but not exposed in the area, is the Jurassic Summerville formation.

The sandstone capping the higher areas in sec. 36 is the Cretaceous Dakota formation. It is about 90 feet thick and consists of coarse conglomerate with a matrix of coarse sandstone and sandstone with minor shale lenses. ?

The Brushy Basin member of the Morrison formation is about 400 feet thick and is composed of variegated silts, shales, and minor sandstone lenses. The sandstones vary in color from gray, green, maroon, to gray-white.

The Westwater Canyon member in the area is about 150 feet thick, and consists of a greenish-yellow to greenish-gray, cliff-forming, coarse- to medium-grained, poorly sorted sandstone with a subordinate amount of gray-green shale. The Westwater Canyon sandstone is similar to the Salt Wash sandstone in type of bedding, grain size and sorting but its color is distinctive.

The Salt Wash sandstone is the major uranium-producing horizon in this area and is about 210 feet thick. It is composed of gray-white to buff, gently cross-bedded sandstone lenses separated by red and green mudstones and shales. Conglomeratic lenses and gritty beds are scattered throughout this member but are not persistent for any great length. The Jurassic Summerville formation underlies the Morrison formation in this area. The Summerville formation ranges from 70 to 90 feet thick and is composed of maroon to chocolate-brown, calcareous and gypsiferous mudstones and shales interbedded with limy, gray-white to buff, bedded to cross-bedded, ripple-marked sandstones of variable thickness.

Structure

The subject area lies east of the Comb Ridge monocline in an area of nearly flat-lying strata. The dip is about 1° to the east. There are no known faults or folds in the vicinity of sec. 36.

Minerals

The chief ore minerals are carnotite, tyuyamunite, and roscoelite with minor amounts of pascoite and vanoxite. Common accessory minerals are chert, calcite, limonite, gypsum and minor amounts of jarosite.

ORE DEPOSITS

The ore horizon in the vicinity of sec. 36 is in the upper 80 to 90 feet of the Salt Wash sandstone. The uranium-vanadium ore of the Monticello Mining District, Blanding area, occurs in thin, roughly tabular masses, in thin to thick lenticular bodies, which may thicken appreciably or pinch out completely within short distances and in small high-grade pockets which surround a mineralized fossil tree or trash pockets of carbonaceous material.

The mineralized deposits in this area seem to be localized in the outer convex side of old stream channels where the sandstone and mudstone interfinger. These places also seem to have an abundance of carbonaceous material.

The ore deposits in the Monticello Mining District, Blanding area, appear smaller as they approach the northeast corner of the district. The largest known ore deposit in the vicinity of sec. 36 is about 7,500 feet from the southwest corner of sec. 36. The ore deposit contains about 2,500 tons of 0.23 percent U_3O_8 and lies at a depth of about 300 feet.

Mr. Phil Dodd, of the U. S. Atomic Energy Commission, Exploration Division, believes that any ore deposits found in the vicinity of sec. 36 would contain no more than 3000 tons of ore-grade material (ore grade being 0.1 percent U_3O_8 or 1.0 percent V_2O_5 one foot or more thick) and as the drilling depths average about 800 feet on sec. 36, it would require an ore body of 15,000 tons or more of 0.23 percent U_3O_8 to mine profitably at this depth.

FAVORABLE TRENDS

Drilling by the U. S. Atomic Energy Commission, Exploration Divison, in secs. 2 and 3, T. 37 S., R. 21 E., has outlined an east-west trending favorable belt. The favorable belt has not been delineated east of sec. 2, but if it were extended eastward along its known trend, it would be at least 3000 feet south of sec. 36 (fig. 2).

The La Sal Mining Company intends to explore sec. 2, T. 37 S., R. 21 E. and their drilling may outline another favorable zone north of the one now known to exist. If a favorable zone is outlined by drilling and can be shown to extend on to the subject property, a reappraisal of sec. 36 might be made.

PROPOSED EXPLORATION

The applicant proposes to explore sec. 36 in three stages of drilling with 140 holes totaling 103,000 feet.

Stage I would consist of drilling 56 holes totaling 41,000 feet on 1000-foot centers. These holes would be drilled to obtain a better understanding of the sub-surface geologic conditions and to help establish within close limits the depths where coring of the formation should be commenced in subsequent holes.

Stage II would consist of drilling 56 holes totaling 41,400 feet on a 500-foot spacing. If no favorable indications of ore are discovered in stage II, stage III would be discontinued.

Stage III would consist of 28 holes totaling 20,600 feet. The objective of stage III is to outline any favorable ground with more closely spaced holes. The offset interval may be as small as 50 feet. The work could be completed within 12 months.

CONCLUSIONS AND RECOMMENDATIONS

Drilling by the U. S. Atomic Energy Commission in sec. 2 has proven that a favorable belt with an east-west trend exists to the south of sec. 36 . Drilling to the north of this favorable belt for a distance of 2000 feet has proven that no favorable sandstone lenses or ore bodies exist there. If future drilling should prove another favorable belt north of the one now tested, which could be projected into sec. 36, a reappraisal of sec. 36 for Government assistance may be made.

Mr. Phil Dodd of the U. S. Atomic Energy Commission, believes that even though favorable sandstone lenses might exist on sec. 36, any ore deposit found would probably be too small to be economically mined. This should be kept in mind if a reappraisal of the subject property is made.

At this time no favorable trends can be extended into sec. 36 and as any holes drilled would be of a "wildcat" nature, it is recommended that Government assistance be denied.

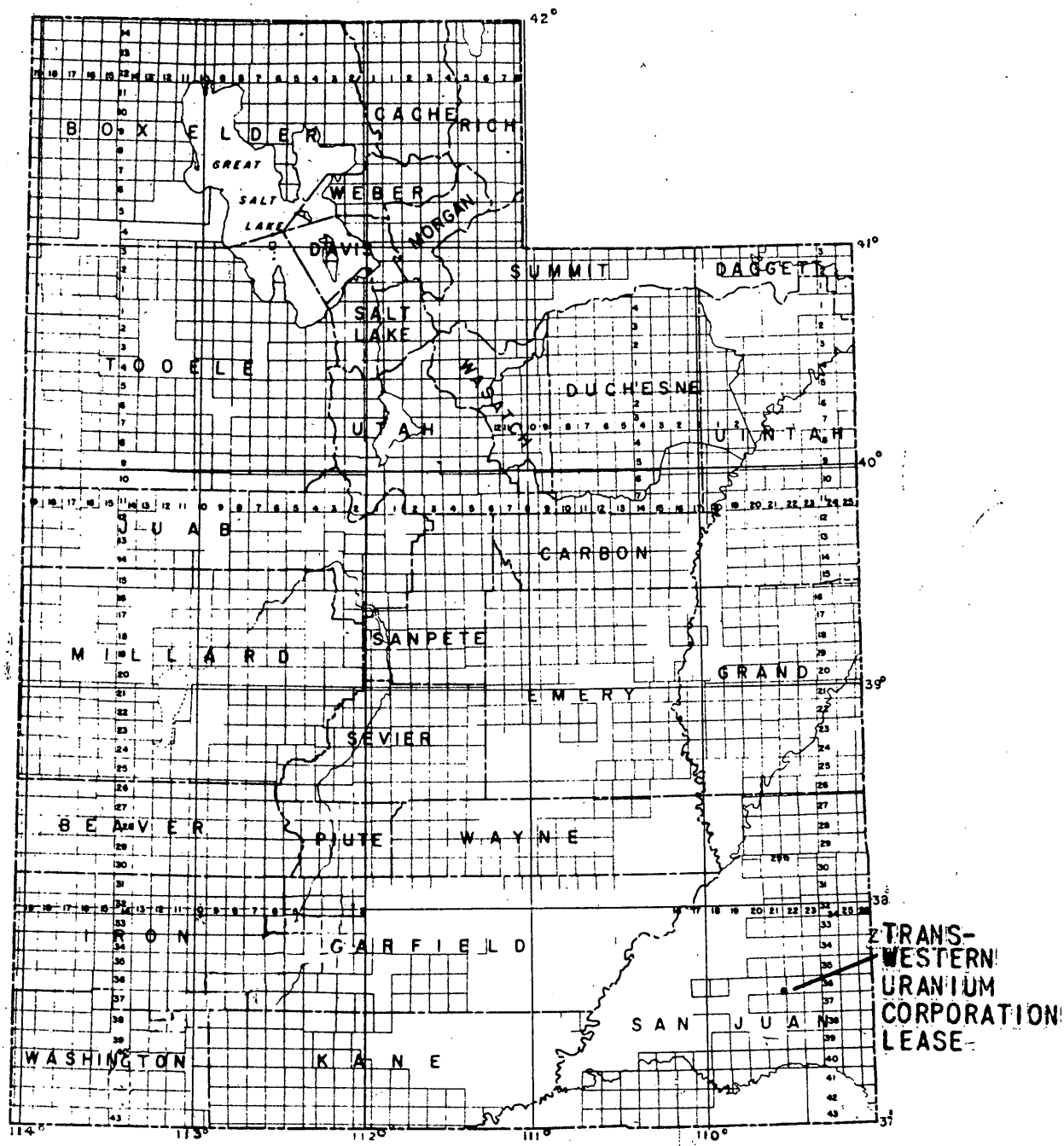
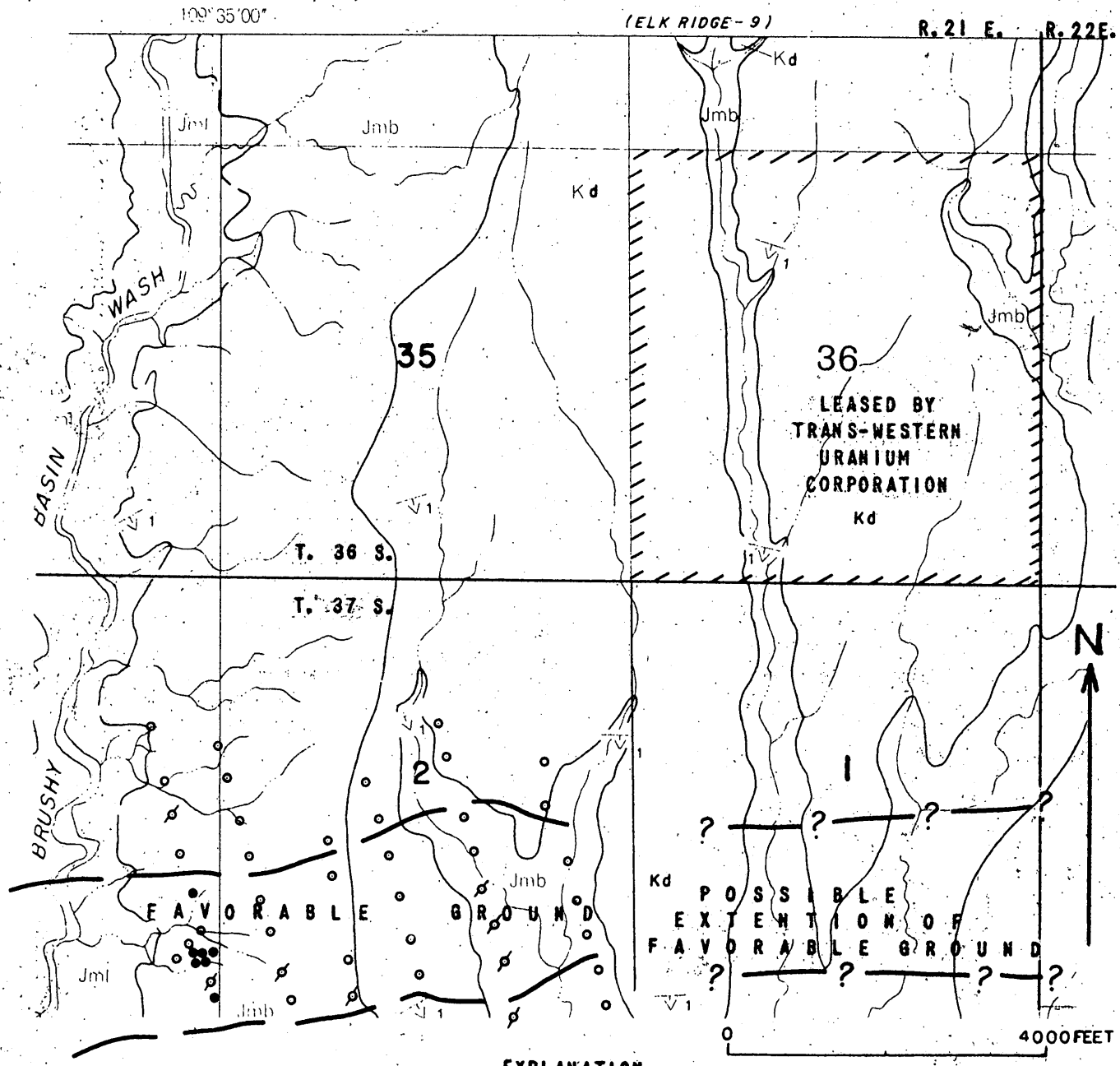


Figure 1. INDEX MAP OF UTAH SHOWING LOCATION OF TRANS-WESTERN URANIUM CORPORATION LEASE SAN JUAN COUNTY, UTAH

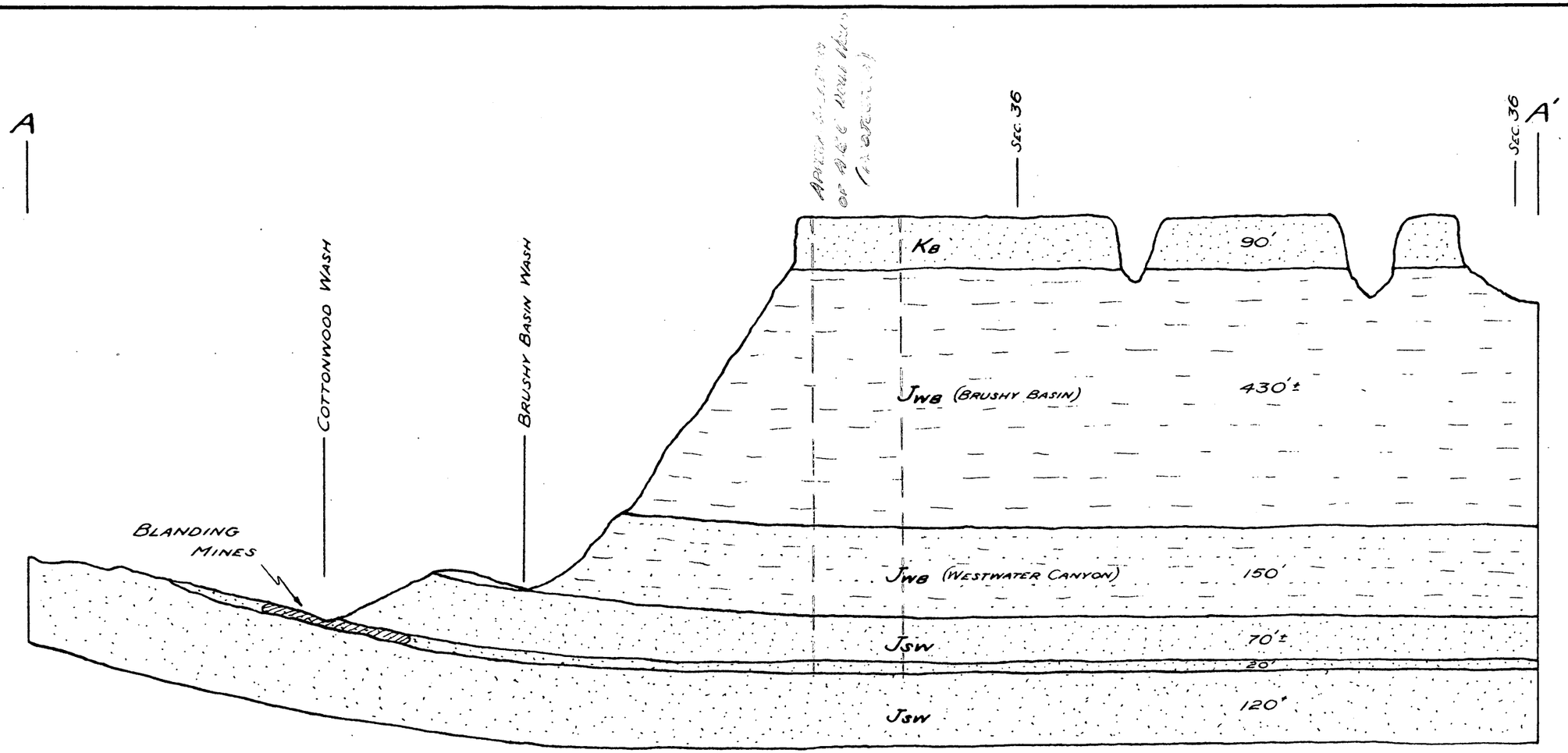


EXPLANATION

Kd	CRETACEOUS DAKOTA SANDSTONE	DIAMOND-DRILL HOLES, A.E.C.
Jmb	JURASSIC BRUSHY BASIN MEMBER OF MORRISON FORMATION	○ BARREN
Jml	JURASSIC LOWER MORRISON FORMATION	⊘ MINERALIZED
	BOUNDARY OF FAVORABLE GROUND	● ORE-BEARING
	BOUNDARY OF AREA PROPOSED FOR EXPLORATION	

Note: BASE MAP FROM U.S. GEOLOGICAL SURVEY PHOTOGEOLOGIC QUADRANGLE MAP ELK RIDGE 16

Figure 2. MAP OF SECTION 36, T. 36 S., R. 21 E., S.L.M. AND VICINITY SHOWING FAVORABLE GROUND OUTLINED BY ATOMIC ENERGY COMMISSION
SAN JUAN COUNTY, UTAH

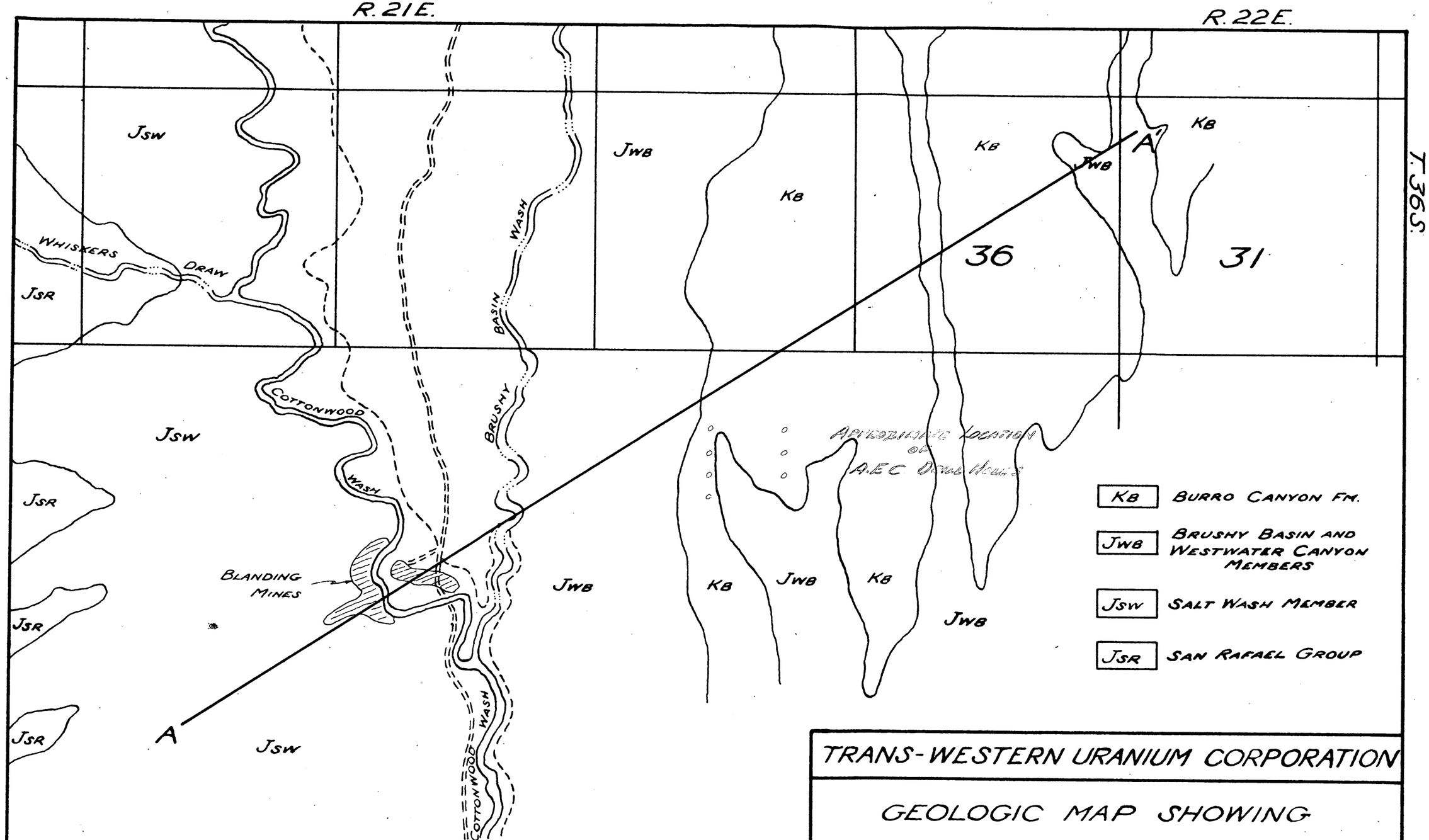


TRANS-WESTERN URANIUM CORPORATION

CROSS-SECTION A-A'

LOOKING NORTHWEST

Drawn By: ALB Date: 4-2-55	Scale: 1" = 2000'	Drawing Number 5



NOTE: FOR SECTION AA' SEE DRAWING No. 5

TRANS-WESTERN URANIUM CORPORATION

GEOLOGIC MAP SHOWING RELATION BETWEEN SEC. 36, T. 36 S., R. 21 E. & THE BLANDING MINES AREA

DRAWN BY: ALB DATE: 4-2-55	SCALE: 1" = 2000'	DRAWING NUMBER 4

Proof Read

Rl7 RMK

MINERAL LEASE NO. 0-51

UTAH STATE LEASE
FOR

APPLICATION NO. 4205 GRANT: School

URANIUM AND VANADIUM

THIS INDENTURE OF LEASE AND AGREEMENT entered into in duplicate this 19th day of February 19 54 by and between the State Land Board, acting in behalf of the State of Utah, hereinafter called the Lessor, and

JOHN A. HOWELL, GEORGE D. FEHR AND EARL H. PERKINS

party of the second part, hereinafter called the Lessee, under and pursuant to Title 65, Utah Code Annotated, 1953.

WITNESSETH: That the Lessor, in consideration of the rents and royalties to be paid and the covenants to be observed by the Lessee, as hereinafter set forth, does hereby grant and lease to the Lessee the exclusive right and privilege to mine, remove, and dispose of all of the said minerals in, upon, or under the following described tract of land situated in San Juan County, State of Utah, to-wit:

All of Section Thirty Six (36), Township Thirty-Six (36) South, Range Twenty-One (21) East, Salt Lake Meridian,

containing a total of 640.00 acres, more or less, together with the right to use and occupy so much of the surface of said land as may be required for all purposes reasonably incident to the mining, removal, and disposal of said minerals, according to the provisions of this lease, for a period of ten years, beginning January 2nd, first succeeding the date of issuance hereof, and as long thereafter as said minerals may be produced in commercial quantities from said lands, upon condition that at the end of each twenty (20) year period succeeding the first day of the year in which this lease is issued, such re-adjustment of terms and conditions may be made as the Lessor may determine to be necessary in the interest of the State.

ARTICLE I

It is expressly understood and agreed that this lease is granted subject in all respects to and under the conditions of the laws of the State of Utah and existing Rules and Regulations or Rules and Regulations as may be hereafter approved and adopted by the State Land Board.

ARTICLE II

It is further expressly understood and agreed that this lease covers only the mining, removal, and disposal of the minerals specified in this lease, but the Lessee shall promptly notify the Lessor of the discovery of any minerals excepting those enumerated herein.

ARTICLE III

The Lessee in consideration of the granting of the rights and privileges aforesaid, hereby covenants and agrees as follows:

FIRST: To pay to the Lessor as rental for the land covered by this lease the sum of Fifty (50) Cents per acre per annum. All such annual payments of rental to be made in advance on the 2nd day of January of each year, except the rental for the year in which this lease is issued, which is payable on the execution of this lease, such rental to be credited against the royalties as they accrue for the year.

SECOND: To pay a royalty of 12½% of the gross amount received for or the gross value of the leased substances, including the State's royalty share of any bonus received by the Lessee from the sale of the leased substances. The basis for computing the amount due to the Lessor shall be as follows:

(a) If the leased substance extracted are sold under a bona fide contract of sale the amount of money or its equivalent actually received by the owner, Lessee, or other person operating the leased premises from the sale of the leased substances less a reasonable cost, if any, of transporting the leased substances from the place where extracted to the place where under the contract of sale, the leased substances are to be delivered.

(b) If the leased substances extracted are treated at a mill, smelter, processing plant, or reduction works which receives the leased substances from independent sources and which is owned or controlled by the same interests owning or controlling the mine, such disposal shall be treated as a sale within the meaning of this section for the purpose of determining gross proceeds or otherwise, and in such determination a rate or charge for sampling, assaying, milling, smelting, or refining the leased substances therefrom shall be deducted which shall not exceed an amount to be determined by applying the same rates as are applied by such mill, smelter, or reduction works or competing works, and ores of substantially like character and in like quantities received from independent sources. In the event of controversy the Lessor shall have the power to determine such rates and charges. Transportation charges may also be deducted as provided in sub-division (a) hereof.

(c) If a mill or other reduction works is operated exclusively in connection with a mine such mill or reduction works shall be treated as a part of the mine and the cost of operating such mill or reduction works shall, for the purpose of fixing the royalty imposed by this lease, be regarded as part of the cost of mining, and the cost of assaying, sampling, smelting, refining, and transportation only shall be deducted as herein provided.

THIRD: Said royalties to be paid quarterly on or before the 15th day of the month next succeeding the quarter in which the material is produced.

FOURTH: To prepare and forward to the State Land Office, on or before the 15th day of the month next succeeding the quarter in which the material is produced, a certified statement as to the production, market, and price received on all of the leased substances disposed of from said lands, and such other additional information as the State Land Board may from time to time require.

FIFTH: That at the option of the Lessor it may require the payment of royalties in kind, F.O.B., at the lease-site; the amount being 12½% of the leased substances extracted.

SIXTH: To commence actual operations upon the land included herein on or before and thereafter to diligently operate the property in accordance with the provisions contained in this lease. Failure to so continue the operation of the land included herein for a period of more than six (6) months without prior written approval of the State Land Board shall be cause for forfeiture, and that upon the violation of this provision or any of the other terms of this lease the Lessor may at its option after thirty (30) days notice by registered mail cancel this lease. After the expiration of the said thirty (30) days and the cancellation of the lease no notice of such cancellation need be given the Lessee.

SEVENTH: To keep at the mine office clear, accurate and detailed maps on tracing cloth, on a scale not more than 50 feet to the inch, of the workings in each section of the leased lands and on the lands adjacent, and to be so arranged with reference to a public land corner that the maps can be readily and correctly superimposed, and to furnish to the Lessor annually, or upon demand, certified copies of such maps and such written statements of operations as may be called for. All surveys shall be made by a licensed engineer and all maps certified to by him.

EIGHTH: To not at any time fence any watering place upon the lands leased where the same is the only accessible and feasible source of water incident to the lands leased. Nor shall the Lessee or assigns at any time permit or contribute to the pollution of any surface or subsurface water available, naturally or otherwise, for domestic or irrigation use.

NINTH: To not sell, assign, mortgage, pledge, hypothicate, or otherwise transfer or incumber this lease or any interest therein, nor sublet any portion of the leased premises, or any of the rights and privileges herein granted, without the written consent of the Lessor being first had and obtained.

ARTICLE IV

The Lessor hereby excepts and reserves from the operation of this lease:

FIRST: The right to permit for joint or several use such easements or rights-of-way upon, through, or in the land hereby leased as may be necessary or appropriate to the working of these or other lands belonging to or administrated by the Lessor containing mineral deposits or for other use.

SECOND: The right to use, lease, sell, or otherwise dispose of the surface of said lands or any part thereof, under existing State Laws or Laws hereafter enacted, insofar as said surface is not necessary for the use of the Lessee in the mining, removal, or disposal of the leased substances therein, and to lease other mineral deposits, excepting those enumerated herein which may be contained in said lands.

ARTICLE V

Upon cancellation of this lease for any cause herein the Lessee shall be entitled to remove from the lease holdings only personal property prior to complete fulfillment of the provisions of this lease, and that improvements attached to the land such as buildings, timbering, or other construction or construction material in place, shall remain undisturbed upon the ground and the property surrendered in good usable condition.

ARTICLE VI

It is mutually understood and agreed that it shall be the responsibility of the Lessee to slope the sides of all operations of a surface nature to an angle of not less than 45° or to erect a barrier around such operation as the State Land Board may require. Such sloping or fencing shall become a normal part of the operation of the lease so as to keep pace with such operation to the extent that such operation shall not constitute a hazard.

ARTICLE VII

It is mutually understood and agreed by the parties hereto that all of the terms, covenants, conditions, and obligations in this lease contained, shall be binding upon the heirs, executors, administrators, and assigns of the Lessee.

ARTICLE VIII

It is mutually understood and agreed that the Lessee may terminate this lease at any time upon giving three (3) months notice in writing to the Lessor and upon payment of all rents and royalties and other sums due and payable to the Lessor, and upon complying with the terms of this lease with respect to the preservation of the workings in such order and condition as to permit of the continued operation of the leased premises.

ARTICLE IX

It is mutually understood and agreed by and between the parties hereto that the Lessor, its officers and agents, shall have the right at all times to go in and upon the leased lands and premises, during the term of said lease to inspect the work done and the progress thereof on said lands and the products obtained therefrom, and to post any notices on the said land that it may deem fit and proper; and also shall permit any authorized representatives of the Lessor to examine all books and records pertaining to operations under this lease, and to make copies of and extracts from the same, if desired.

ARTICLE X

It is mutually understood and agreed that this lease is issued only under such title as the State of Utah may now hold, the Lessor shall not be liable for any damages sustained by the Lessee, nor shall the Lessee be entitled to or claim any refund of rentals or royalties or other monies theretofore paid to the Lessor.

ARTICLE XI

LESSEE agrees to observe faithfully the provisions of Title 65, Chapter 1, Section 18, Utah Code Annotated 1953.

IN WITNESS WHEREOF, the parties have hereunto subscribed their names the day and year first above written.

STATE OF UTAH, STATE LAND BOARD

By A. N. Smith
EXECUTIVE SECRETARY LESSOR

Robert H. Ruggeri

George D. Fehr

Earl H. Perkins
LESSEE

STATE OF UTAH }
COUNTY OF SALT LAKE } ss.

On the 16 day of April 19 54, personally appeared before me A. N. Smith who being by me duly sworn did say that he is the Executive Secretary of the State Land Board of the State of Utah and that said instrument was signed in behalf of said Board by resolution of the Board, and said A. N. Smith acknowledged to me that said Board executed the same in behalf of the State of Utah.

Given under my hand and seal this 16 day of April 19 54.

My commission Expires: October 13, 1956

Ruth Sperry
Notary Public, residing at: Salt Lake City, Utah

STATE OF UTAH }
COUNTY OF Salt Lake } ss.

On the 2nd day of april 1954, personally appeared before me George D. Fehr and Earl H. Perkins, the signers of the above instrument, who duly acknowledged to me that they executed the same.

Given under my hand and seal this 2nd day of april 19 54.

My commission Expires: 4-1-56

Dorma D. Edwards
Notary Public, residing at: Salt Lake City, Utah

STATE OF UTAH }
COUNTY OF } ss.

On the day of 19, personally appeared before me, who being by me duly sworn did say that he is an officer of and that said instrument was signed in behalf of said corporation by resolution of its Board of Directors, and said acknowledged to me that said corporation executed the same.

Given under my hand and seal this day of 19.

My commission Expires:

Notary Public, residing at:

STATE OF COLORADO)
CITY &) ss
COUNTY OF DENVER)

On the 9th day of March, A. D., 1954, personally appeared before me John A. Howell the signer of the above instrument, who duly acknowledged to me that he executed the same.

My commission expires:
My Commission expires January 31, 1955

Joseph H. Gooch
Notary Public
Residing at Denver, Co.

Proof Read

M.J. RMR

MINERAL LEASE NO. 6051

UTAH STATE LEASE
FOR

APPLICATION NO. 4205

GRANT: School

URANIUM AND VANADIUM

THIS INDENTURE OF LEASE AND AGREEMENT entered into in duplicate this 19th day of February 19 54 by and between the State Land Board, acting in behalf of the State of Utah, hereinafter called the Lessor, and

JOHN A. HOWELL, GEORGE D. FEHR AND EARL H. PERKINS

party of the second part, hereinafter called the Lessee, under and pursuant to Title 65, Utah Code Annotated, 1953.

WITNESSETH: That the Lessor, in consideration of the rents and royalties to be paid and the covenants to be observed by the Lessee, as hereinafter set forth, does hereby grant and lease to the Lessee the exclusive right and privilege to mine, remove, and dispose of all of the said minerals in, upon, or under the following described tract of land situated in San Juan County, State of Utah, to-wit:

All of Section Thirty Six (36), Township Thirty-Six (36) South, Range Twenty-One (21) East, Salt Lake Meridian,

containing a total of 640.00 acres, more or less, together with the right to use and occupy so much of the surface of said land as may be required for all purposes reasonably incident to the mining, removal, and disposal of said minerals, according to the provisions of this lease, for a period of ten years, beginning January 2nd, first succeeding the date of issuance hereof, and as long thereafter as said minerals may be produced in commercial quantities from said lands, upon condition that at the end of each twenty (20) year period succeeding the first day of the year in which this lease is issued, such re-adjustment of terms and conditions may be made as the Lessor may determine to be necessary in the interest of the State.

ARTICLE I

It is expressly understood and agreed that this lease is granted subject in all respects to and under the conditions of the laws of the State of Utah and existing Rules and Regulations or Rules and Regulations as may be hereafter approved and adopted by the State Land Board.

ARTICLE II

It is further expressly understood and agreed that this lease covers only the mining, removal, and disposal of the minerals specified in this lease, but the Lessee shall promptly notify the Lessor of the discovery of any minerals excepting those enumerated herein.

ARTICLE III

The Lessee in consideration of the granting of the rights and privileges aforesaid, hereby covenants and agrees as follows:

FIRST: To pay to the Lessor as rental for the land covered by this lease the sum of Fifty (50) Cents per acre per annum. All such annual payments of rental to be made in advance on the 2nd day of January of each year, except the rental for the year in which this lease is issued, which is payable on the execution of this lease, such rental to be credited against the royalties as they accrue for the year.

SECOND: To pay a royalty of 12½% of the gross amount received for or the gross value of the leased substances, including the State's royalty share of any bonus received by the Lessee from the sale of the leased substances. The basis for computing the amount due to the Lessor shall be as follows:

(a) If the leased substance extracted are sold under a bonafide contract of sale the amount of money or its equivalent actually received by the owner, Lessee, or other person operating the leased premises from the sale of the leased substances less a reasonable cost, if any, of transporting the leased substances from the place where extracted to the place where under the contract of sale, the leased substances are to be delivered.

(b) If the leased substances extracted are treated at a mill, smelter, processing plant, or reduction works which receives the leased substances from independent sources and which is owned or controlled by the same interests owning or controlling the mine, such disposal shall be treated as a sale within the meaning of this section for the purpose of determining gross proceeds or otherwise, and in such determination a rate or charge for sampling, assaying, milling, smelting, or refining the leased substances therefrom shall be deducted which shall not exceed an amount to be determined by applying the same rates as are applied by such mill, smelter, or reduction works or competing works, and ores of substantially like character and in like quantities received from independent sources. In the event of controversy the Lessor shall have the power to determine such rates and charges. Transportation charges may also be deducted as provided in sub-division (a) hereof.

(c) If a mill or other reduction works is operated exclusively in connection with a mine such mill or reduction works shall be treated as a part of the mine and the cost of operating such mill or reduction works shall, for the purpose of fixing the royalty imposed by this lease, be regarded as part of the cost of mining, and the cost of assaying, sampling, smelting, refining, and transportation only shall be deducted as herein provided.

THIRD: Said royalties to be paid quarterly on or before the 15th day of the month next succeeding the quarter in which the material is produced.

FOURTH: To prepare and forward to the State Land Office, on or before the 15th day of the month next succeeding the quarter in which the material is produced, a certified statement as to the production, market, and price received on all of the leased substances disposed of from said lands, and such other additional information as the State Land Board may from time to time require.

FIFTH: That at the option of the Lessor it may require the payment of royalties in kind, F.O.B., at the lease-site; the amount being 12½% of the leased substances extracted.

SIXTH: To commence actual operations upon the land included herein on or before and there after to diligently operate the property in accordance with the provisions contained in this lease. Failure to so continue the operation of the land included herein for a period of more than six (6) months without prior written approval of the State Land Board shall be cause for forfeiture, and that upon the violation of this provision or any of the other terms of this lease the Lessor may at its option after thirty (30) days notice by registered mail cancel this lease. After the expiration of the said thirty (30) days and the cancellation of the lease no notice of such cancellation need be given the Lessee.

SEVENTH: To keep at the mine office clear, accurate and detailed maps on tracing cloth, on a scale not more than 50 feet to the inch, of the workings in each section of the leased lands and on the lands adjacent, and to be so arranged with reference to a public land corner that the maps can be readily and correctly superimposed, and to furnish to the Lessor annually, or upon demand, certified copies of such maps and such written statements of operations as may be called for. All surveys shall be made by a licensed engineer and all maps certified to by him.

EIGHTH: To not at any time fence any watering place upon the lands leased where the same is the only accessible and feasible source of water incident to the lands leased. Nor shall the Lessee or assigns at any time permit or contribute to the pollution of any surface or subsurface water available, naturally or otherwise, for domestic or irrigation use.

NINTH: To not sell, assign, mortgage, pledge, hypothicate, or otherwise transfer or incumber this lease or any interest therein, nor sublet any portion of the leased premises, or any of the rights and privileges herein granted, without the written consent of the Lessor being first had and obtained.

ARTICLE IV

The Lessor hereby excepts and reserves from the operation ofthis lease:

FIRST: The right to permit for joint or several use such easements or rights-of-way upon, through, or in the land hereby leased as may be necessary or appropriate to the working of these or other lands belonging to or administrated by the Lessor containing mineral deposits or for other use.

SECOND: The right to use, lease, sell, or otherwise dispose of the surface of said lands or any part thereof, under existing State Laws or Laws hereafter enacted, insofar as said surface is not necessary for the use of the Lessee in the mining, removal, or disposal of the leased substances therein, and to lease other mineral deposits, excepting those enumerated herein which may be contained in said lands.

ARTICLE V

Upon cancellation of this lease for any cause herein the Lessee shall be entitled to remove from the lease holdings only personal property prior to complete fulfillment of the provisions of this lease, and that improvements attached to the land such as buildings, timbering, or other construction or construction material in place, shall remain undisturbed upon the ground and the property surrendered in good usable condition.

ARTICLE VI

It is mutually understood and agreed that it shall be the responsibility of the Lessee to slope the sides of all operations of a surface nature to an angle of not less than 45° or to erect a barrier around such operation as the State Land Board may require. Such sloping or fencing shall become a normal part of the operation of the lease so as to keep pace with such operation to the extent that such operation shall not constitute a hazard.

ARTICLE VII

It is mutually understood and agreed by the parties hereto that all of the terms, covenants, conditions, and obligations in this lease contained, shall be binding upon the heirs, executors, administrators, and assigns of the Lessee.

ARTICLE VIII

It is mutually understood and agreed that the Lessee may terminate this lease at any time upon giving three (3) months notice in writing to the Lessor and upon payment of all rents and royalties and other sums due and payable to the Lessor, and upon complying with the terms of this lease with respect to the preservation of the workings in such order and condition as to permit of the continued operation of the leased premises.

ARTICLE IX

It is mutually understood and agreed by and between the parties hereto that the Lessor, its officers and agents, shall have the right at all times to go in and upon the leased lands and premises, during the term of said lease to inspect the work done and the progress thereof on said lands and the products obtained therefrom, and to post any notices on the said land that it may deem fit and proper; and also shall permit any authorized representatives of the Lessor to examine all books and records pertaining to operations under this lease, and to make copies of and extracts from the same, if desired.

ARTICLE X

It is mutually understood and agreed that this lease is issued only under such title as the State of Utah may now hold, the Lessor shall not be liable for any damages sustained by the Lessee, nor shall the Lessee be entitled to or claim any refund of rentals or royalties or other monies theretofore paid to the Lessor.

ARTICLE XI

LESSEE agrees to observe faithfully the provisions of Title 65, Chapter 1, Section 18, Utah Code Annotated 1953.

IN WITNESS WHEREOF, the parties have hereunto subscribed their names the day and year first above written.

APPROVED AS TO FORM:
E. R. MAURER
ATTORNEY GENERAL
By Robert H. Rizzuti

STATE OF UTAH, STATE LAND BOARD

By A. N. Smith
EXECUTIVE SECRETARY — LESSOR

John A. Howell

George D. Fehr

Earl H. Perkins — LESSEE

STATE OF UTAH
COUNTY OF SALT LAKE } ss.

On the 16 day of April 19 54, personally appeared before me A. N. Smith who being by me duly sworn did say that he is the Executive Secretary of the State Land Board of the State of Utah and that said instrument was signed in behalf of said Board by resolution of the Board, and said A. N. Smith acknowledged to me that said Board executed the same in behalf of the State of Utah.

Given under my hand and seal this 16 day of April 19 54.

My commission Expires: October 13, 1956

Ruth Sperry
Notary Public, residing at: Salt Lake City, Utah

STATE OF UTAH
COUNTY OF Salt Lake } ss.

On the 2nd day of april 1954, personally appeared before me George D. Fehr and Earl H. Perkins the signers of the above instrument, who duly acknowledged to me that they executed the same.

Given under my hand and seal this 2nd day of april 19 54.

My commission Expires: 4-1-56

Norma P. Edwards
Notary Public, residing at: Salt Lake City, Utah

STATE OF UTAH
COUNTY OF } ss.

On the day of 19 , personally appeared before me ,

who being by me duly sworn did say that he is an officer of and that said instrument was signed in behalf of said corporation by resolution of its Board of Directors, and said acknowledged to me that said corporation executed the same.

Given under my hand and seal this day of 19 .

My commission Expires:

Notary Public, residing at:

STATE OF COLORADO)
CITY &) ss
COUNTY OF DENVER)

On the 29th day of March, A. D., 1954, personally appeared before me John A. Howell the signer of the above instrument, who duly acknowledged to me that he executed the same.

My commission expires:
My Commission expires January 31, 1955

Wyeth W. Gooch
Notary Public
Residing at Denver, Colo.

RECEIVED
APR 2 1954
STATE OF UTAH
STATE LAND BOARD