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

224 New Customhouse
Denver 2, Colorado

October 9, 1953.

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3121 (Uranium), White Canyon Mining Company, San Juan County, Utah.

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

Because of the drilling already done by AEC, we believe the applicant's claims have been adequately explored and that the chances of finding a uranium deposit large enough to justify the proposed expenditure are small.

We recommend that the application be denied.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
10-21-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

October 12, 1953.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination - DMEA Docket 3121 (Uranium), White Canyon Mining Company, San Juan County, Utah.

Enclosed are eleven copies of the engineering report on the subject docket.

The applicant requested $56,428.52 for 870 feet of drifting and 400 feet of crosscutting.

The field examiners conclude that ABC drilling has adequately explored the property and DMEA assistance is not warranted.

We recommend that the application be denied.

W. H. King

W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE

10-21-53
(date)

Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Building 20, Room 137
Denver Federal Center,
Denver 14, Colorado
October 1, 1953

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 3121, Ears Claim group (Uranium), White Canyon Mining Company, Inc., San Juan County, Utah

Submitted herewith are the original and ten copies of the "Summary, Conclusions, and Recommendations", by M. H. Salsbury, Bureau of Mines, and Albert F. Trites, Jr., Geological Survey, and of Salsbury's engineering report on the subject docket.

Salsbury concludes, and is supported by representatives of the Geological Survey and Atomic Energy Commission, that proposed bulldozer stripping of a north channel is not warranted as the Commission has plans for more diamond drilling of that area; the underground exploration of a south channel by drifting from the rim with included interval crosscutting is mainly development and the cost is not justified for the small ore bodies that are likely to be developed. He recommends denial of the application and I approve.

One brochure only, furnished with your instructions by memorandum of August 18, 1953, to prepare a suitable report, was transmitted to R. F. Fischer.

W. M. Traver

W. M. Traver

enclosures

cc: 10
DMEA 3121
Chron.

WMT/eb

Reviewed by
DMEA OPERATING COMMITTEE

10-21-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
200 New Customhouse
Denver 2, Colorado

October 5, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3121, White Canyon Mining Company, San Juan County, Utah

Enclosed are 11 copies of the geologic report by A. F. Trites, Jr., of the U. S. Geological Survey covering the above docket.

It has been recommended that the loan be denied.

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (11)

Reviewed by
DMEA OPERATING COMMITTEE
10-21-53
(date)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 2 1953

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

October 2, 1953

MEMORANDUM

TO: A. H. Koschmann
DMEA Field Team, Region IV

FROM: R. P. Fischer
Acting Supervisor, Colorado Plateau District

SUBJECT: DMEA 3121, White Canyon Mining Company, San Juan County, Utah

Transmitted herewith are eleven copies of a geologic report on the Ears claim group (April Mine), White Canyon Mining Company, San Juan County, Utah. The company applied for assistance to explore for uranium deposits. The proposed work consists of 870 feet of drifting and 400 feet of crosscutting, plus a small amount of other work. The estimated total cost is $56,428.52.

The attached report was prepared by A. F. Trites, Jr., and is based on a joint field examination on September 2 and 3, 1953, in company with M. H. Salsbury, U. S. Bureau of Mines, and L. J. Miller and Daryl Spencer, U. S. Atomic Energy Commission.

The proposed work was planned to test one of two ore-bearing channels on the applicant's claims. Since the application was submitted, however, AEC completed additional diamond drilling in the ground that would be tested by the proposed drifting. On the basis of this additional work, it is concluded by the examining team and by AEC representatives that this channel is adequately tested and that there is little or no chance of finding a deposit with the proposed work. For that reason, it is recommended that the application be denied.

As AEC is continuing drill exploration of the second channel on these claims, the examining team did not recognize a feasible modified program of exploration for a DMEA project, and none is recommended.

I concur with the conclusions and recommendations of the attached report.

Sincerely yours,

R P Fischer

R. P. Fischer
Acting District Supervisor
Colorado Plateau District

Reviewed by
DMEA OPERATING COMMITTEE
10-21-53
(date)

RPF/je
Enclosures 11

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

11/20/53

DMEA 3121, Ewra Claim Group

White Canyon Mining Company, Inc.

San Juan County, Utah

Uranium

M. H. Salsbury, Mining Engineer
Bureau of Mines

Albert F. Trites, Jr.
Geologist, Geological Survey

September 21, 1953

Reviewed by
EWRA OPERATING COMMITTEE
10-21-53
(Date)

DMRA 3121

EARS CLAIM GROUP

WHITE CANYON MINING COMPANY, INC.

SAN JUAN COUNTY, UTAH

Summary, Conclusions, and Recommendations

By M. H. Salisbury
Mining Engineer
Bureau of Mines

and

Albert F. Trites, Jr.
Geologist
Geological Survey

Reviewed by
DMRA OPERATING COMMITTEE

10-21-59

DMEA 3121

EARS CLAIM GROUP
WHITE CANYON MINING COMPANY, INC.
SAN JUAN COUNTY, UTAH

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By M. H. Salsbury and A. F. Trites, Jr.

The Ears Claim group, property of the White Canyon Mining Company, Inc., Grand Junction, Colo., located in the White Canyon Mining District, San Juan County, Utah, was investigated on September 2 and 3, 1953, by a Region IV Defense Minerals Exploration Administration examining team, accompanied by field personnel of the Atomic Energy Commission and Raymond Starr, representing the applicant.

Application has been made for Government assistance to explore buried stream channels in the Shinarump formation by adit tunnel, crosscuts, and surface stripping, at an estimated cost of $56,428.52--Government participation 90 percent, or $51,785.76. Denial of the application is recommended.

Seven contiguous claim locations cover two branching channels in the ore-bearing Shinarump conglomerate, portions of which have been disclosed to be ore-bearing by an exploratory drilling program of the Atomic Energy Commission. The major ore occurrence, at the junction of the two channels, appears to be largely on a conflicting prior claim location not owned by the applicant.

The claims are on branching channels cut into beds of the Moenkopi formation. The south branch of the channel is approximately 30 feet wide and 14 feet deep; the north branch is slightly smaller. The channels have been filled with beds of sandstone, siltstone, and conglomerate of the Shinarump conglomerate.

Two uranium deposits have been found in the lower 3 feet of the Shinarump conglomerate, one near the junction of the branches and the other in the south branch. The part of the deposit on those claims near the junction of the branches contains approximately 8,000 tons of ore, having an average grade of 0.25 percent U_3O_8. The deposit in the south branch contains a maximum of 1,500 tons of ore, having an average grade of 0.25 percent U_3O_8.

The north channel branch is almost totally unexplored and some 800 feet of the south channel is untouched except for a few preliminary drill holes, most of which were at some distance from the position of the channel as later established. The width of the channel at the rim outcrop and evidence from drill holes indicate that the channel in the unexplored area is narrow.

The Atomic Energy Commission plans further drilling along the north channel, but has completed its exploration of the south channel.

It is concluded by the examining team, and the Atomic Energy Commission representatives concur, that the proposed stripping of the north channel talus-covered outcrop is not necessary in view of the plans for more drilling by the Atomic Energy Commission and that

underground exploration of the south channel is essentially development and the cost is not justified by the probable small extent of any ore bodies which might be encountered along the line of the proposed tunnel. Denial of the application is recommended.

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS MCKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM

REGION IV

DMEA 3121 (Uranium)

WHITE CANYON MINING COMPANY, EARS CLAIM GROUP (APRIL MINE), SAN JUAN COUNTY, UTAH

Geologic report

Albert F. Trites, Jr.

U. S. Geological Survey

October 2, 1953

Reviewed by
DMEA OPERATING COMMITTEE

10-21-53
(date)

DMEA 3121 (Uranium)

WHITE CANYON MINING COMPANY, EARS CLAIM GROUP (APRIL MINE), SAN JUAN COUNTY, UTAH

INTRODUCTION AND SUMMARY

The White Canyon Mining Company, P. O. Box 801, Grand Junction, Colo., has applied (DMEA 3121) to the Defense Minerals Exploration Administration for financial assistance to explore for uranium in the White Canyon district, San Juan County, Utah (fig. 1). The company owns the Ears, Ears No. 1, New Year No. 1, Hillside, Hillside No. 1, Hillside No. 2, and April claims in secs. 10 and 11, T. 37 S., R. 16 E., unsurveyed, Salt Lake meridian. These seven unpatented claims are in a contiguous group on the rim along the south side of Frey Canyon, a tributary to White Canyon, approximately 67 miles by road west of Blanding, Utah. The properties are reached from Blanding by Utah Highway 95, a secondary road in Frey Canyon, and an extremely steep mine road to the claims. The claims are about 85 miles from Monticello, Utah, the nearest station for receiving uranium ores. The Hite mill of the Vanadium Corporation of America is about 30 miles by road west of the claims, but is receiving ore only from the Happy Jack Mine. However, it is believed that plans are being made for the expansion of this mill for the treatment of much of the ore from the White Canyon area.

The applicants proposed to drive 870 feet of exploratory drift and 400 feet of crosscuts in the channel. The proposed drift would extend from a point on the ore rim to an intersection with U. S. Atomic Energy Commission diamond-drill hole 11 (fig. 2). This drill hole and hole 64 are believed to have penetrated a small uranium deposit near the center of the channel. The crosscuts were planned to explore the channel for

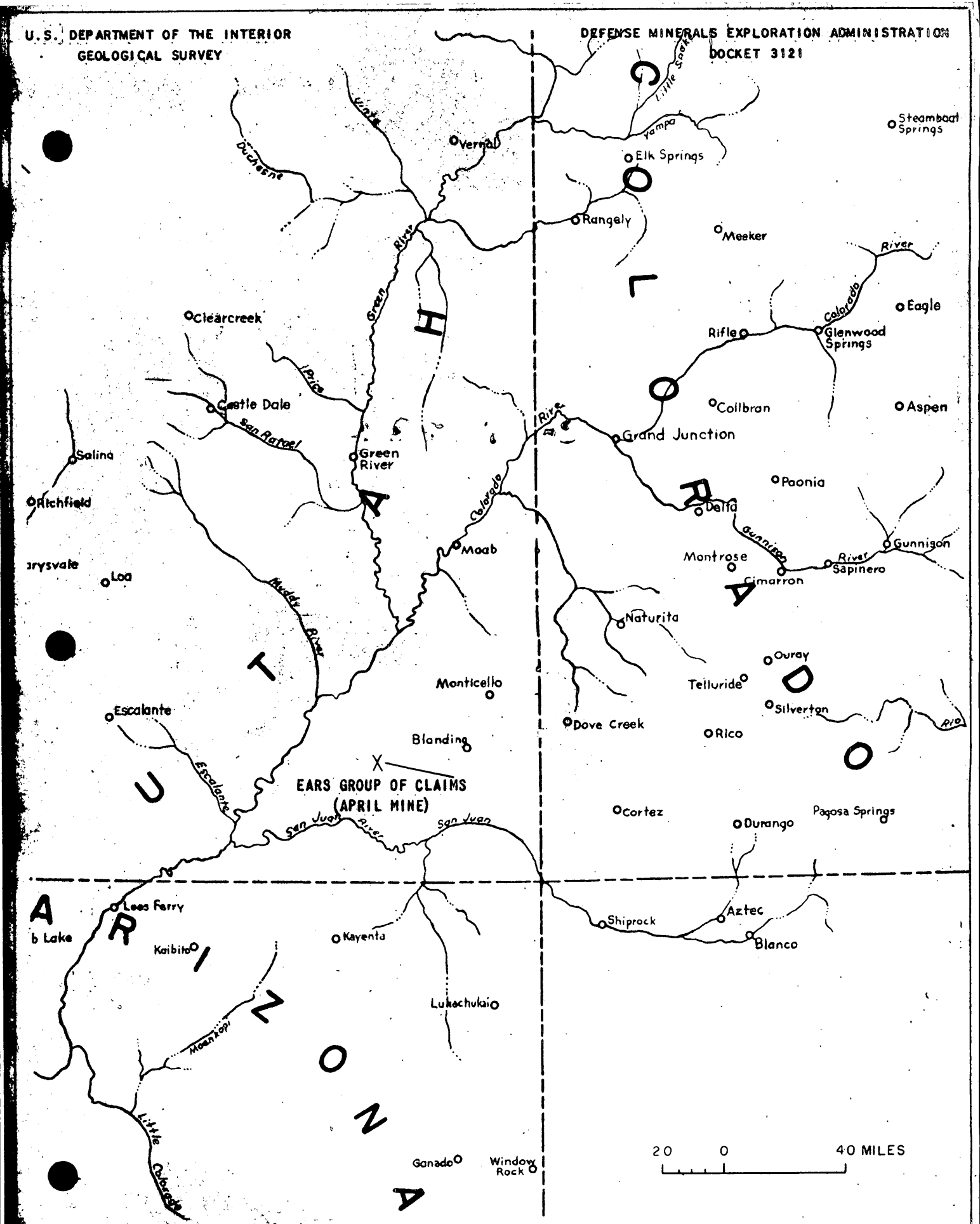


Figure 1. INDEX MAP SHOWING LOCATION OF THE EARS GROUP OF CLAIMS (APRIL MINE), SAN JUAN COUNTY, UTAH

50 feet on either side of the center line of the drift at intervals of 100 feet; a total of eight crosscuts were proposed. It was further proposed to expose the north branch of the channel by bulldozer trenching where it is covered by talus on their property, to build a road to the portal of the drift, to build structures for equipment and living, and to provide underground ventilation by churn-drill holes having a diameter of 12 inches and spaced at intervals of about 300 feet. The estimated total cost of this work is $56,428.52 of which Government participation would be $50,785.67.

The claims were examined on September 2 and 3, 1953, by M. H. Salsbury of the U. S. Bureau of Mines, L. J. Miller and Daryl Spencer of the U. S. Atomic Energy Commission, and Albert F. Trites, Jr., of the U. S. Geological Survey. The field examiners, and the AEC representatives as well, are agreed that the channel on the New Year and New Year No. 1 claims between the outcrop and drill hole 11 has been adequately tested by drilling and that there is little chance of finding a significant deposit with the proposed drifting and crosscutting, and, furthermore, that under these conditions, a drift to drill hole 11 would be more appropriately considered development work rather than exploration. For these reasons, it is recommended that the application be denied.

GEOLOGY

The area of the Ears group of claims is on the west flank of the Monument upwarp that extends from northeastern Arizona to Elk Ridge in southeastern Utah. Rocks exposed in the area consist of sedimentary beds of Permian, Triassic, and Jurassic ages. These rocks dip approximately 2° W.

The Moenkopi formation (lower Triassic), the Shinarump conglomerate (upper (?) Triassic), and the lower unit of the Chinle formation (upper Triassic) are exposed at the claims. Talus and slide rock have covered some of the Shinarump and Chinle beds on the claims.

The Moenkopi formation is approximately 300 feet thick and consists of interlayered beds of brown siltstone, fine-grained sandstone, and shale. The Moenkopi beds immediately underlying the Shinarump conglomerate have been bleached greenish-gray from a few inches to 2 feet.

The Shinarump conglomerate ranges from 30 to 50 feet thick and is composed of beds of conglomeratic sandstone, siltstone, and conglomerate. The lower beds of the Shinarump conglomerate fill a channel that has been cut into new Moenkopi formation. This channel is bifurcated approximately 1,500 feet behind the rim (fig. 2). This channel, trending roughly N. 45° E., has been followed for more than 2,500 feet by diamond drilling and is believed to be the same channel being drilled on the north side of Red Canyon one mile southwest of the rim. The south branch of the channel is approximately 300 feet wide and 20 feet deep where it has been exposed by bulldozer trenching at the rim. The base of the north branch of the channel is covered at the rim, but diamond drilling has suggested that this channel is slightly smaller than the south branch. These two branches coalesce to form a channel more than 200 feet wide and 28 feet deep.

The lower unit of the Chinle formation is about 250 feet thick and at the outcrop forms a slope above the Shinarump conglomerate. Most of the unit is composed of beds of light-gray clay and siltstone and a few lenticular beds of fine- to medium-grained sandstone. A sandstone bed, commonly called the Mossback sandstone in the White Canyon district, forms the capping ledge; this sandstone ranges from 30 to 50 feet thick.

ORE DEPOSITS

In the White Canyon district, the uranium-bearing deposits are in Shinarump beds that fill channels cut into the Moenkopi formation. Most of the deposits are in the central, deeper parts of the channels where they form tabular masses that lie essentially parallel with the bedding. The deposits range in size from a few tons to many thousand tons of ore; deposits of average size contain a few hundred to a few thousand tons. The ore bodies consist of uranium and copper minerals that impregnate the rock and replace fossil wood. Pitchblende is the dominant uranium mineral and is associated with copper sulfides and pyrite.

The uranium deposits in the Ears group of claims are in the lower 3 feet of the Shinarump conglomerate in conglomeratic sandstone containing carbonized wood and siltstone pebbles. The uranium is believed to be contained in pitchblende that is replacing carbonized wood, and is associated with chalcopyrite and pyrite that have impregnated the sandstone and replaced wood.

A large uranium deposit near the center of the channel at the junction of the channels has been discovered by diamond drilling by the U. S. Atomic Energy Commission. Most of this deposit is believed to be on the Gizzmo No. 5 claim (fig. 2) owned by D. V. Blake, White Canyon, Utah, who is planning to drive an inclined shaft to the ore body. A smaller part of this deposit is believed to be on the claims owned by the White Canyon Mining Company, and to have been penetrated by diamond-drill holes 17, 49, and 67 (fig. 2 and table 1). The segment of this ore body owned by the White Canyon Mining Company is estimated to be 400 feet long, 90 feet wide, and 3 feet thick. On the basis of 14 cubic feet of rock per ton, this deposit would contain approximately 8,000 tons of ore having an average grade of 0.25 percent U_3O_8.

A smaller deposit, approximately 180 feet long, 40 feet wide, and 3 feet thick, was penetrated by diamond-drill holes Nos. 11 and 64. This deposit is believed to contain a maximum of 1,500 tons of ore having an average grade of 0.25 percent U_3O_8.

Table 1. Intervals of AEC drill holes on the Ears group of claims containing a minimum of 0.05 percent U_3O_8 ✓

Diamond drill hole number	Interval (feet)	Thickness (feet)	Percent U_3O_8	Description
11	165.0-165.3	0.3	2.11	Very coarse-grained conglomeratic sandstone, white, massive, containing carbonaceous material and clay pebbles
11	165.3-165.7	0.4	0.14	Do
15				Ore indicated by gamma-ray log.
17	305.0-307.0	2.0	0.33	Very coarse-grained conglomeratic sandstone, white, massive, containing carbonaceous material and clay pebbles.
49	293.5-294.5	1.0	0.03	Not known
	294.5-295.5	1.0	0.06	
	295.5-296.5	1.0	0.18	
56	Not known			
62	Not known			
64	183.5-184.5	1.0	0.55	Coarse-grained sandstone, gray to white, containing carbonaceous material, pitchblende, and chalcopyrite.
66	221.6-223.0	1.4	0.51	Conglomeratic sandstone, white, containing seams of carbonaceous material and pitchblende.
67	Not known			
72	Not known			

✓ Information from diamond-drill core logs of the U. S. Atomic Energy Commission.

Additional ore deposits may be found by exploring the north branch of the channel on the Ears and Ears No. 1 claims, but the south branch on the New Year No. 1 claim seems adequately explored. AEC drilling completed thus far on the north branch of the channel has delineated the trend of the channel, but has not penetrated ore, possibly because the holes are too near the outer edge of the channel. Secondary uranium and copper minerals are found in the Shinarump beds at the outcrop of the north branch, but scintillometer readings made by the AEC do not indicate the presence of ore-grade material. AEC plans additional drilling on the north branch, but has discontinued exploration on the south branch because of the relatively small size of the deposits it believes will be found.

The largest deposit that could be expected by exploring the south branch is believed to be considerably less than 2,000 tons. Such a deposit, if confined to the channel, would be between drill hole 72 and the narrow point of the channel near drill hole 7, between the narrow point in the channel and drill hole 3, or between drill hole 3 and the outcrop. Little hope is maintained for the discovery of a significant deposit between drill hole 72 and the narrow point of the channel near drill hole 7. Drill hole 72 has penetrated a basal Shinarump sandstone bed containing minor amounts of chalcopyrite believed to be in a weakly mineralized zone bordering the ore deposit at drill hole 11. This sandstone is also much thinner in drill hole 72 than in the deposit, and is apparently being cut out by an intra-Shinarump channel that is filled with siltstone.

The channel apparently widens between drill hole 7 and the outcrop, but was barren of sulfide minerals and significant amounts of uranium where it was tested by drill hole 3. Experience has shown that the chances of finding a significant deposit are small without at least low-grade uraniferous rock or sulfide minerals present nearby, and neither of those were indicated by drill hole 3.

PROPOSED EXPLORATION

The applicants have proposed to drive 870 feet of drift from a point on the Shinarump rim to an intersection with AEC drill hole 11 (fig. 2). It is noted that this drift, 870 feet long as proposed by the applicants, would be approximately 40 feet too short to intersect drill hole 11. They have also proposed to drive eight crosscuts for 50 feet on either side of the center line of the drift at intervals of 100 feet. The applicants do not anticipate discovering an ore body by this adit, but consider that the work will be non-paying (applicants' engineering report, page 2). The applicants have further proposed to expose by bulldozer trenching the outcrop of the north branch of the channel on the Ears No. 1 claim, to build structures for equipment and living quarters, and to provide underground ventilation by churn drill holes having a diameter of 12 inches and spaced at intervals of about 300 feet.

CONCLUSIONS AND RECOMMENDATIONS

Because of the drilling already done by AEC, it is concluded that the proposed exploration is in ground that is adequately tested, or nearly so, and that the chances of finding a uranium deposit large enough to justify the proposed expenditure are small. Furthermore, the proposed drift, if driven merely to open the deposit at hole 11, would be development work rather than exploratory work. It is recommended that the plan as proposed by the applicants be denied. In view of the AEC plans to continue drilling in the north branch of the channel, the examining team did not recognize a feasible modified program of exploration for a DMEA project, and none is recommended.

DMEA 3121

EARS CLAIM GROUP
WHITE CANYON MINING COMPANY, INC.
SAN JUAN COUNTY, UTAH

Engineering Report

By M. H. Salisbury
Mining Engineer
Bureau of Mines

DMRA 3121

EARS CLAIM GROUP
WHITE CANYON MINING COMPANY, INC.
SAN JUAN COUNTY, UTAH

CONTENTS

Engineering Report	Page
Introduction	1
Acknowledgments	1
Location, topography, and physical features	2
Labor and living conditions	3
History, production, and ownership	4
Description of the deposits	5
Mineable ore reserves	6
Present status	6
Exploration and development	6
Mining and milling equipment and other facilities	7
Project proposals with costs	7
Production plan	9
Proposed financing	9
Conclusions	9
Recommendations	10

ILLUSTRATIONS

Figure	Follows Page
1. Location map, White Canyon Mining Company, Inc., Ears Claim group, San Juan County, Utah	2

DMEA 3121

EARS CLAIM GROUP
WHITE CANYON MINING COMPANY, INC.
SAN JUAN COUNTY, UTAH

ENGINEERING REPORT

By M. H. Salsbury

INTRODUCTION

The White Canyon Mining Company, Inc., P. O. Box 801, Grand Junction, Colo., has applied for a Defense Minerals Exploration Administration loan of $56,428.52--Government participation 90 percent, or $51,785.76--for an exploration project for uranium. The proposal includes 1,670 feet of underground development by drifting and crosscutting in an adit tunnel to be started on the outcrop of a potential ore-bearing stream channel, and 200 hours of bulldozing for an access road to the tunnel portal site, and to uncover another channel outcrop.

The property was visited by a Region IV examining team on September 2 and 3, 1953, accompanied by Leo J. Miller and Daryl Spencer of the Atomic Energy Commission, and Raymond Starr, representing the applicant.

ACKNOWLEDGMENTS

Data have been obtained by examination in the field, by consultation with personnel of the Atomic Energy Commission, and from material furnished by the applicant.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Ears Claim group is located in the White Canyon Mining District on the southwest rim of Frey Canyon, a tributary of White Canyon, in San Juan County, Utah. The property is in unsurveyed secs. 10 and 11, T. 37 S., R. 16 E., Salt Lake principal meridian (fig. 1). It is reached from Blanding, Utah, the nearest point on a paved highway, over Utah State Highway 95, a graded road, and connecting access roads to the Frey Canyon camp of the Atomic Energy Commission and the exploration area on the rim. The distance to Blanding is 67 miles, and to the nearest receiving plant for uranium ores at Monticello, Utah, 89 miles.

The region, at an average elevation of 6,000 feet, is the typical arid mesa land of the Colorado-Utah plateau with Triassic sediments outcropping, cut by numerous steep-walled canyons draining northwest to the Colorado River. The climate is one of extremes, hot in summer and often very cold during the winter. Total yearly precipitation is low, but violent storms, often resulting in local flash floods, occur in summer and there are occasional heavy winter snowfalls. Except for brief periods after storms, and during spring thaws, stream beds are practically dry. The vegetation is rather sparse, but ample supplies of fire wood for domestic purposes are easily gathered.

There are a few springs in the area which will supply domestic needs and limited drilling requirements. The water supply is usually supplemented by runoff stored in small retaining ponds.

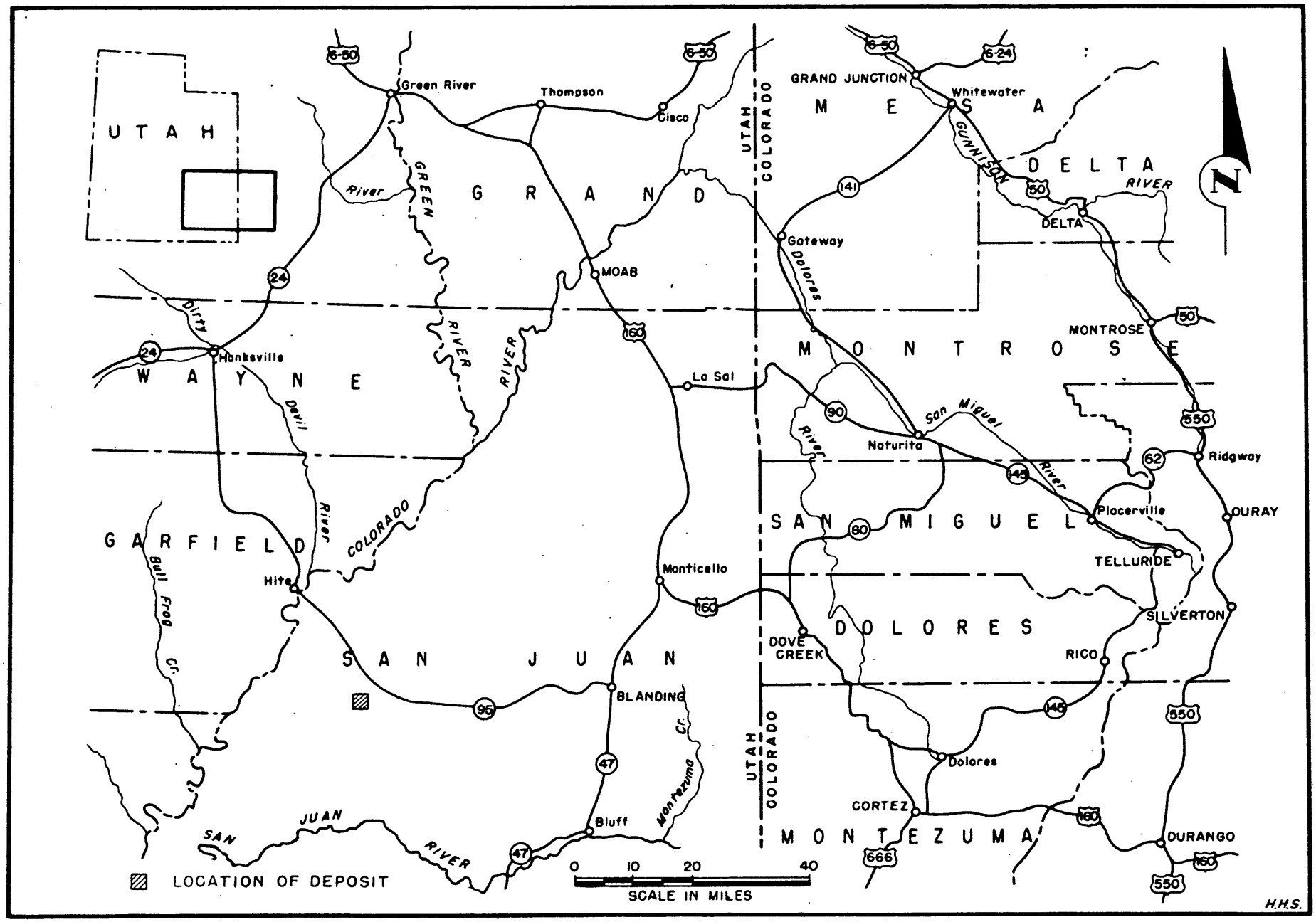


FIGURE 1. - LOCATION MAP, EARS CLAIM GROUP, WHITE CANYON MINING COMPANY, INC., SAN JUAN COUNTY, UTAH (DMEA 3121)

The nearest scheduled transportation service ends at Blanding. Hauling into the area must be done by the operator or by contracting truckers. Transportation costs over the roads, which are nearly impassable at times after heavy storms, are high, although a new road, which bypasses much of the worst section of Highway 95, has recently been completed. There are no published tariffs, but advantageous arrangements for bringing in supplies and equipment can sometimes be made with ore-hauling contractors.

The nearest complete stock of mining supplies is at Grand Junction, Colo., 180 miles by paved highway from Blanding.

Transportation of ore can be contracted with a number of trucking firms operating in the region. The hauling bonus of 6 cents per ton mile paid by the Government must be supplemented by an additional 2 or 3 cents per ton mile paid by the shipper. The total ore hauling cost from Frey Canyon to Monticello is approximately $8.00 per ton.

Power in the area for all requirements must be furnished by the individual operator.

Labor and Living Conditions

All housing and service facilities must be moved in and maintained by the operator. The usual accommodations are trailer houses, simple frame buildings, or crudely constructed cabins. Because of the housing, remote location, and climatic extremes, living conditions are not attractive, particularly during the winter when roads may often be traveled with difficulty.

The labor supply is short. Adverse living conditions make it difficult to obtain or keep good mine workers in the face of competition from other less remote areas.

The wage rate for mine labor is supposedly $1.50 per hour, but this appears to be only a nominal figure as operators will pay up to $2.00 per hour to get and keep good men. Most operations are carried on by lessees or by contract miners.

HISTORY, PRODUCTION, AND OWNERSHIP

The White Canyon Mining District is in a remote area of southeastern Utah, difficult of access and little known before the search for uranium ores was extended after World War II. Most of it is in the public domain; in Frey Canyon, as well as some other sections, land was not withdrawn from entry and is open to mineral location. The Atomic Energy Commission has carried on extensive core drilling in the White Canyon area, much of it on privately-held claims. Several uranium deposits located by the Atomic Energy Commission drilling are in production, but the Frey Canyon section is just emerging from the exploration stage, and there has been no production to date.

White Canyon Mining Company, Inc., owns seven contiguous located claims, the Ears, Ears No. 1, New Year No. 1, Hillside, Hillside No. 2, and April claims, which are of concern to the proposed project. The locations are recorded in the San Juan County Courthouse, Monticello. A conflict with a prior located claim, the Gizmo No. 5, owned by D. V. Blake, removes an area equal to a full 600-foot by 1,500-foot claim from the control of the applicant in the heart of the ore zone (fig. 2, with the geologic report). The area of the proposed exploration

project is covered by the property listed in the application. The Gissmo No. 5 claim does not conflict with this ground.

DESCRIPTION OF THE DEPOSITS

The known uranium deposits on the property are typical deposits of Shinarump conglomerate in stream channels cut in the underlying Moenkopi formation. Two branching channels are known, outcropping on the southwest rim of Frey Canyon several hundred feet above the canyon floor. These two branches join some 1,500 feet from the rim, forming a larger channel which contains the best part of the known ore. The overburden on the applicant's claims ranges from 50 feet at the rim to over 300 feet at the southwest boundary. As roughly outlined by Atomic Energy Commission core drilling, the branching channels are not wide, 50 feet at the most, and possible ore deposits are correspondingly narrow. At the junction of the channels, the ore may be as much as 200 feet wide. The thickness of the ore bed appears to be from 1 to 5 feet, with the mineable deposits on the applicant's property about 3 feet thick.

The uranium apparently occurs as pitchblende, replacing carbonized wood contained in varying amounts in the lower 3 to 5 feet of the Shinarump conglomerate in the channels. It is associated with chalcopyrite and pyrite, which also have replaced carbonized wood fragments in the formation. In some occurrences, the chalcopyrite is in sufficient quantity to consitute a copper ore. No vanadium minerals are found locally. The rim outcrops of the two channels are barren and the presence of ore nearby is not indicated.

MINEABLE ORE RESERVES

There are two ore deposits outlined by Atomic Energy Commission drilling on the property. The larger is a continuation of the ore at the junction of the channels, covered by the Gizzmo No. 5 claim of different ownership. It has roughly indicated dimensions of 400 feet in length, 90 feet wide, and 3 feet thick, containing an estimated maximum, using a tonnage factor of 14, of 8,000 tons of ore with an average grade of 0.25 percent U_3O_8.

The other deposit, in the vicinity of Atomic Energy Commission diamond drill holes numbers 11 and 64, may be 180 feet by 40 feet by 3 feet and contain 1,500 tons of ore averaging 0.25 percent U_3O_8.

The foregoing estimates are rough, being based on exploratory drilling of the Atomic Energy Commission, which is not designed to block out ore.

The results of sampling by the Atomic Energy Commission, including pertinent drill logs, are included in the geologic report.

PRESENT STATUS

Exploration and Development

The property has been the site of part of the exploratory drilling program of the Atomic Energy Commission in this district. Forty holes, 100 to 300 feet deep, have outlined roughly the two ore bodies previously described (fig. 2, with the geologic report). However, a 900-foot section of the south channel, and most of the north channel, have not been completely explored. Seven holes drilled along the comparatively

unexplored section of the south channel have given negative results. They do not rule out the possibility of the occurrence of more ore bodies, but do establish the fact that any ore discoveries are likely to be small. For this reason, the Atomic Energy Commission does not plan any more drilling on the south channel.

The north channel may have ore deposits along its length and more drilling here is planned by the Atomic Energy Commission.

The only other exploration carried on at the property has been stripping to expose the rim outcrop of the south channel, which the applicant completed during the past summer.

A lessee on the Gizzmo No. 5 claim has scheduled an incline shaft to cut the Gizzmo ore body, starting in September 1953.

Mining and Milling Equipment and Other Facilities

There are no buildings or equipment at the site, other than that belonging to the Atomic Energy Commission and its drilling contractor.

No milling facilities are required as any ore produced would be shipped to a treatment plant at Monticello, Utah.

PROJECT PROPOSALS WITH COSTS

The major part of the applicant's proposal calls for the exploration of some 900 feet of the more or less unexplored section of the south channel between Atomic Energy Commission drill hole No. 11 and

the rim, by means of an adit tunnel, driven from a portal on the channel outcrop below the rim. It would be driven an estimated 870 feet with crosscuts at 100-foot intervals to investigate the Shinarump beds for fifty feet on either side of the tunnel. Mine buildings, housing, and a better access road to the tunnel portal site are included. In addition, the applicant proposes to strip the talus masking the north channel outcrop.

The applicant estimates a total cost of $56,428.52 for the project. Deducting the cost of bulldozing, buildings, and other preliminary work, the actual cost of the underground work is about $31.00 per foot, $6.00 per foot more than the highest normal drifting cost in the uranium area, according to criteria of the Atomic Energy Commission. Some of the excess may be justified by the remote location. Rather elaborate haulage equipment, and large drill holes for ventilation, proposed by the applicant, account for the additional cost.

The proposed work would explore the south channel very completely, but the applicant obviously wants the tunnel more for its development features. Completion of the adit tunnel to the ore body in the vicinity of Atomic Energy Commission hole No. 11 would provide an excellent haulageway for mining the ore between that point and the southwest boundary of the property. On page 2 of the engineering report accompanying the application, the statement is made that the first 870 feet of the tunnel are expected to be non-paying, which would indicate that the applicant's engineers do not anticipate finding any new ore as the

result of exploration features of the project. The distance from the rim to Atomic Energy Commission hole No. 11, as scaled on the applicant's map, is 930 feet. This map is based on working maps of the Atomic Energy Commission. The distance to hole No. 11 is thus 60 feet more than the length of the proposed tunnel.

Most features of the project proposals are shown on figure 2, with the geologic report.

Equipment for the project, including that to supply power, was to be rented. The applicant proposes to use normal local sources for transportation, manpower, and water.

PRODUCTION PLAN

The applicant estimates 11 months would be required to complete the project.

PROPOSED FINANCING

Supervision, and other services which the applicant is prepared to furnish, would make up more than the company's 10 percent of the cost. The applicant company and it's president, R. O. Dulaney, Jr., of Fort Worth Texas, have been active in the uranium field for some time.

CONCLUSIONS

The conclusion reached by the examining team, in which the Atomic Energy Commission representatives concur, is that the cost of the underground work along the south channel, considered as an exploration

project, is not justified by the probable small extent of any ore bodies which might be found. The work is also considered as development rather than exploration. The spacing of seven barren drill holes in the exploration area make the largest possible ore body 200 feet by 50 feet by 3 feet thick. The width of the channel at the outcrop—30 feet—and the subsurface contours at the top of the Moenkopi formation, indicate an even narrower maximum width.

The north channel outcrop has been examined by the Atomic Energy Commission, and scintillometer readings on the talus-covered outcrop were negative. The Atomic Energy Commission plans more drilling along this channel and this work would probably be more valuable than stripping the outcrop.

RECOMMENDATIONS

It is recommended that the loan application be denied.

cb

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

Defense Minerals Administration
RECEIVED

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

Not to be filled in by applicant

Docket No. DMEA 3121
Metal or Mineral
Date Received 7/16/53
Estimated Cost
Participation (Government %)

See attached Supplemental Sheet for detailed answers.

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: The White Canyon Mining Company, P. O. Box 801, Grand Junction, Colorado

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract See Paragraph 1 of Engineering Report and Exhibit "B", attached thereto.

(*b*) State any mine name by which the property is known. April Mine

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Applicant is owner of the land by virtue of valid mining claims on the Public Domain.

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

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

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

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

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

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

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

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

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

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

(*c*) The work will start within 30 days and be completed within 11 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated July 8, 1953

THE WHITE CANYON MINING COMPANY
(Applicant)

By R. O. Dulaney, Jr.,
President

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

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

SUPPLEMENTAL SHEET
APPLICATION FOR AID IN EXPLORATION PROJECT
APRIL EXPLORATION

1. Name of Applicant.

a. The White Canyon Mining Company
P. O. Box 801
Grand Junction, Colorado

b. Applicant is a corporation, organized in Colorado and authorized to do business in Utah.

c. Officers of the corporation are as follows:

Pres., R.O. Dulaney, Jr., 6200 Curzon, Fort Worth, Texas
1st V.Pres., Charles H. Dulaney, P. O. Box 1467, Laredo, Texas
2nd V.Pres., R.O. Dulaney, Sr., 1001 Elizabeth Blvd., Fort Worth, Texas
Sec'y-Treas., James K Groves, 1340 Ouray Ave., Grand Junction, Colorado

3. Property Rights.

a. See Paragraph 1 of Engineering Report and Exhibit "B", attached thereto.

b. Property to be known as the April Mine.

c. Applicant is owner of the land by virtue of valid mining claims on the Public Domain.

e. There are no liens or encumbrances on the land.

f. See Paragraph 1 of the Engineering Report.

4. Physical Description.

a. See Engineering Report, Paragraph 3 for a description of the Atomic Energy Commission Drill Project. See Paragraph 2 of this same report for data on accessibility. There are no present workings or production facilities on the property.

b. There has been no production to date and nothing is known as yet concerning possible ore reserves.
c. See Engineering Report, Paragraph 3.
d. Paragraph 2, Engineering Report.
e. Paragraph 4, Engineering Report.

5. The exploration project.

a. The mineral which applicant is seeking is Uranium.
b. See Paragraph 4 and Exhibits "A" and "B", Engineering Report.
c. The work will start within 30 days and be completed within 11 months from the date of an exploration project contract.
d. Applicant and associates are actively engaged in developing and mining Uranium

SUPPLEMENTAL SHEET NO. 2
APPLICATION FOR AID IN EXPLORATION PROJECT
APRIL EXPLORATION
(WHITE CANYON MINING COMPANY)

5. The exploration project. (Cont'd)

bearing ores on the Colorado Plateau and also on the Navaho Indian Reservation in North-eastern Arizona. Associates in this venture have had years of business experience in the oil industry; supervising personnel connected with the exploration and mining operations are technical men with years of experience in the mining profession.

During the past years production from the mines has materially increased ore receipts at the government plant at Monticello, Utah, at the Durango plant of Vanadium Corporation of America, and at the Uravan plant of the U.S.Vanadium Corporation.

6. Estimate of Costs.

See Paragraphs 5 and 6 of the Engineering Report for cost breakdown and summary.

7. a. Applicant is prepared to furnish his share of the cost of the proposed project.
b. Applicant will deposit 10% of the total cost of the project, or an amount of $5,642.85, to the credit of the project in the First National Bank of Grand Junction, Colorado, upon approval of the project contracts.

WESTERN ENGINEERS

Davis C. Holder

P.O. Box 571

Richard J. Mandeville

Grand Junction, Colorado

July 13, 1953

The Defense Minerals Exploration Administration
United States Department of the Interior
Washington, 25, D.C.

Gentlemen:

Subsequent developments to the preparation of the enclosed report have brought to light a conflict on the ground involved in the application for aid for the White Canyon Mining Company. The conflict is not a serious one now will it interfere in any way with the proposed exploration program or later development work. The red lines on the claim map, Exhibit "A", delineate the ground which is actually held by another party. With the exception of this one change, the report stands correct as originally prepared.

Thanking you, I am

Yours very truly,

Davis C. Holder

Davis C. Holder
for
WESTERN ENGINEERS

ENGINEERING REPORT

EXPLORATION TUNNEL, APRIL MINE

WHITE CANYON MINING CO.

JGL 11/20/53

1. Location:

The property concerned in this report consists of seven unpatented mining claims located in unsurveyed Sections 10 and 11 of Township 37 South, Range 16 East of the Salt Lake Meridian, in the White Canyon Mining District (unorganized), San Juan County, Utah. The property is approximately 60 miles from Blanding, Utah. The seven claims as listed herewith represent a contiguous group, each claim being adjacent to the next. The claims have been surveyed and the recording book and Page Numbers given are those of the Amended Location, where such has been made. From my studies of the records and of the ground, no conflicts or counter-claims are apparent.

Name of Claim	Book No.	Page No.
Ears	27	5
Ears No. 1	27	6
New Year No. 1	27	7
Hillside	27	1
Hillside No. 1	27	2
Hillside No. 2	27	3
April	27	4

For further detail, see Claim Map, Exhibit "A" and Legal Descriptions, Exhibit "B".

2. Accessibility:

Utah State Highway No. 95, from Blanding, Utah passes within four miles of the proposed project. A graded road, constructed by the Atomic Energy Commission, will allow passenger car travel another two miles toward the mine, and Jeep or truck travel is possible from this point to the adit site. Haul for any Uranium discovered will be approximately 85 miles, to the American Smelting and Refining Company processing plant at Monticello, Utah. It is possible that the Vanadium Corporation of America pilot plant at Mite, Utah

may be enlarged, to allow ore buying at that point; this would shorten the haul to about twenty miles. For further detail, see Vicinity Map, Exhibit "C".

3. Geological Data:

There are two "Channels" apparent within the claim group; these channels traverse the Shinarump formation and show definite prospects of being ore-bearing. Drill holes put down by the Atomic Energy Commission have roughly delineated the channels; the main tunnel, as proposed, will traverse the larger of the two. Core Sampling of D.H. 11 showed 0.4 ft. of 0.14% Uranium and 0.3 ft. of 2.11% Uranium. D.H. 15 gave a Gamma Ray Log of 3300 counts per second, indicative of good ore, although the core was not recovered. D.H. 17 yielded a chemical assay of 1.0 ft. of 0.06% Uranium and 2.0 ft. of 0.33% Uranium. Many other holes in the area showed mineralization, bearing out the belief that an ore body is present. However, the location and extent of the mineable ore has not been disclosed by the drill program. The channel is visible in cross-section, at the rim where the adit will be placed, and it is felt that an exploratory shaft with cross-cuts, as shown on the accompanying detail plan, Exhibit "E", will definitely locate a quantity of mineable ore. Actual Ore outcrop at the rim exists but is of an extremely low grade, assaying from 0.10 to 0.12% Uranium with some copper present. It is anticipated that the full length of the tunnel as outlined in Paragraph 4 of this report will be non-paying, but that the continuation of such tunnel beyond Station 8+70 will yield Uranium Ore in sufficient quantities to justify the operation. The proposed cross-cuts will assist in the location of the channel, serving also as probes for secondary ore bodies. Elevations of the various drill holes at the ground surface, and in cases where ore was present, at the contact between the ore-bearing Shinarump and the Moenkopi formations are given on the Claim Map, Exhibit "A".

For General Information on regional geology, see Geologic Map, Exhibit "D".

4. Operational Plan:

The main heading will be advanced at the rate of 3.5 ft. per day, using two miners and one mucker. 249 working days will be required for the full 870 ft. of tunnel; based on a 48 hour week, completion will be 10.4 months after work is commenced. A second crew, identical to that in the main tunnel will begin operations on the No. 1 cross-cut approximately 8 weeks after the commencement of work in the main drift; due to the smaller size of these headings, advance will be 4.0 ft. per day, thereby completing all 8 cross-cuts in 188 working days, or 7.9 calendar months.

Both crews will be under the direction of a Mine Superintendent who will be managing White Canyon Mining Company properties in the area and who will be required to spend 65% of his time on supervision of this particular project. Engineering and Surveys will be provided as needed by Western Engineers, Consultants, of Grand Junction, Colorado.

It is proposed to use electrically powered carts for removing muck; two such carts, along with the 3 K.V.A. Generator required for power, will be rented and put into operation as soon as space permits. A 1500 gallon water tank will be rented and installed on the rim directly above the adit. Water will be hauled from Fry Spring, approximately 3 miles from the site. Ample and continuous flow is available at the spring for both mining and domestic use.

Ventilation will be provided by 12" diameter Drill Holes at intervals of about 300 ft.; circulation will be forced by means of blowers. These Air Vents will be drilled by contract as needed, and will be steel cased. As the operation progresses, water and air lines may be brought into the mine through these vents rather than from the more distant adit.

It will be necessary to improve some of the existing roads and construct some new ones before heavy materials can be trucked into the site. It will also be necessary to strip some of the slide debris and overburden from the rim adjacent to the mine. The applicant wishes to expose the rim in the vicinity of the

secondary channel previously mentioned. This channel outcrops on the Ears Claim. For these miscellaneous operations, 200 hours of Tractor Operation have been provided in the estimate.

5. Estimate of Cost:

Labor:	Main Tunnel, 2 miners @ $1.75 per hr. 1 mucker @ 1.60 " " Av. rate, based on one overtime day per week, $44.20 per day, 249 days,	$11,005.80
	Cross-cuts, same type crew, $44.20 per day, 188 days,	8,309.60
	Superintendent @ $600 per month, 65% pay for 10.4 months,	4,056.00
	Sub-total	$23,371.40
Equipment Rental:		
	2 Power Carts @ $130 per mo. each, $260.00 x 10.4,	$ 2,704.00
	1-3 KVA Generator @ $60 per mo., 60.00 x 10.4,	624.00
	1 Compressor 4 Jack Hammers 2 Blowers 1- 1500 gal. Water Tank 300.00 x 10.4	3,120.00
	1 IMCO Air Mucking Machine, 125.00 x 10.4	1,300.00
	Sub-total	7,748.00
Materials:		
	20 Tons of 20# Rail @ $186.20 per ton,	$ 3,724.00
	1000 ft. of 2" Black Pipe @ $0.44 per ft.	440.00
	Drill Steel and Bits,	450.00
	Small Tools and Supplies,	100.00
	Powder, Caps and Fuse,	2,500.00
	Carbide,	120.00
	Gas and Oil	2,100.00
	Ties, Bolts and Fish Plates,	750.00
	313 ft. of 12" Steel Casing @ $2.35 per ft.	735.55
	Sub-total	$10,919.55
Contract Work:		
	307 ft. of 12" Air Shaft @ $8.00 per ft.,	$ 2,456.00
	200 Hrs. Dozer Operation, (D-7 or equiv.), @ $12.00 per hr.	2,400.00
	Sub-total	$ 4,856.00

Structures:

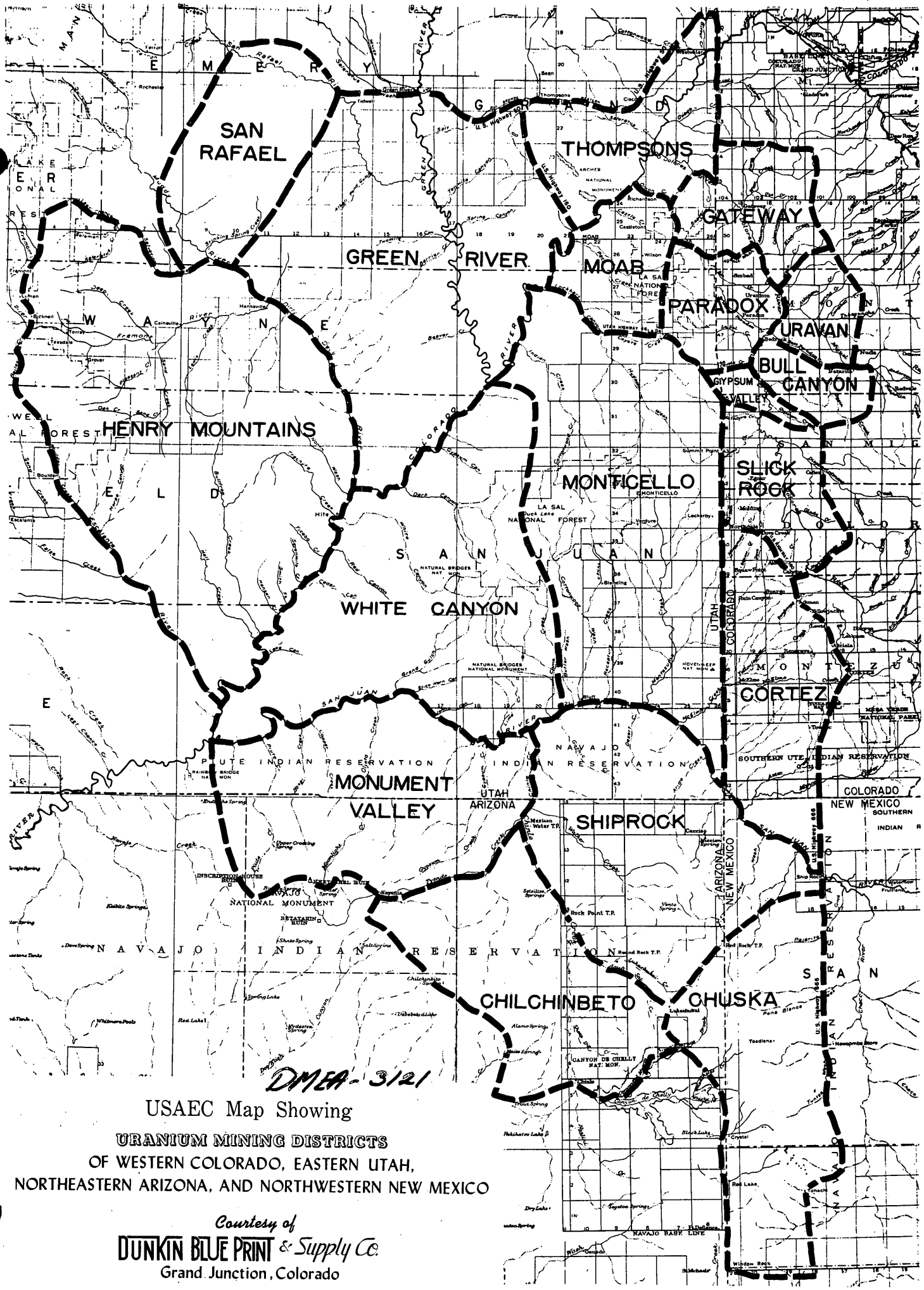
Tool Shack, Living Quarters and Misc. Structures, - - - - -$ 1,500.00

6. Summary of Cost:

Labor, - - - - - - - - - - - - - - - - - -	$23,371.40
Equipment Rental, - - - - - - - - - -	7,748.00
Materials, - - - - - - - - - - - - - - - -	10,919.55
Contract Work, - - - - - - - - - - - - -	4,856.00
Structures,- - - - - - - - - - - - - - - -	1,500.00
Sub-total	$48,394.95
10% Contingencies and Gen. Expense -	4,839.50
6% Engineering and inspection, - -	3,194.07
Total Cost of Project,- - - -	$56,428.52

7. This report is based on field studies and surveys conducted by personnel of Western Engineers, P. O. Box 571, Grand Junction, Colorado. The estimate of costs and other engineering data are substantiated by the appended maps and drawings. If further information is required, address inquiry to White Canyon Mining Company, P. O. Box 801, Grand Junction, Colorado, or to Western Engineers at the address given above.

Signed - - Dennis C. Holder
for
WESTERN ENGINEERS



USAEC Map Showing

URANIUM MINING DISTRICTS

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

Courtesy of

DUNKIN BLUE PRINT & Supply Co.
Grand Junction, Colorado

EXHIBIT C

ENGINEERING REPORT

EXPLORATION TUNNEL, APRIL MINE

WHITE CANYON MINING CO.

1. Location:

The property concerned in this report consists of seven unpatented mining claims located in unsurveyed Sections 10 and 11 of Township 37 South, Range 16 East of the Salt Lake Meridian, in the White Canyon Mining District (unorganized), San Juan County, Utah. The property is approximately 60 miles from Blanding, Utah. The seven claims as listed herewith represent a contiguous group, each claim being adjacent to the next. The claims have been surveyed and the recording book and Page Numbers given are those of the Amended Location, where such has been made. From my studies of the records and of the ground, no conflicts or counter-claims are apparent.

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April	27	4

For further detail, see Claim Map, Exhibit "A" and Legal Descriptions, Exhibit "B".

2. Accessibility:

Utah State Highway No. 95, from Blanding, Utah passes within four miles of the proposed project. A graded road, constructed by the Atomic Energy Commission, will allow passenger car travel another two miles toward the mine, and Jeep or truck travel is possible from this point to the mine site. Haul for any Uranium discovered will be approximately 85 miles, to the American Smelting and Refining Company processing plant at Monticello, Utah. It is possible that the Vanadium Corporation of America pilot plant at Hite, Utah

may be enlarged, to allow ore bagging at that point; this would shorten the haul to about twenty miles. For further detail, see Vicinity Map, Exhibit "C".

3. Geological Data:

There are two "channels" apparent within the claim group; these channels traverse the Shinarump formation and show definite prospects of being ore-bearing. Drill holes put down by the Atomic Energy Commission have roughly delineated the channels; the main tunnel, as proposed, will traverse the larger of the two. Core Sampling of D.H. 11 showed 0.4 ft. of 0.14% Uranium and 0.3 ft. of 2.11% Uranium. D.H. 15 gave a Gamma Ray log of 3300 counts per second, indicative of good ore, although the core was not recovered. D.H. 17 yielded a chemical assay of 1.0 ft. of 0.06% Uranium and 2.0 ft. of 0.33% Uranium. Many other holes in the area showed mineralization, bearing out the belief that an ore body is present. However, the location and extent of the minable ore has not been disclosed by the drill program. The channel is visible in cross-section, at the rim where the adit will be placed, and it is felt that an exploratory shaft with cross-cuts, as shown on the accompanying detail plan, Exhibit "E", will definitely locate a quantity of minable ore. Actual Ore outcrop at the rim exists but is of an extremely low grade, assaying from 0.10 to 0.12% Uranium with some copper present. It is anticipated that the full length of the tunnel as outlined in Paragraph 4 of this report will be non-paying, but that the continuation of such tunnel beyond Station 6+70 will yield Uranium Ore in sufficient quantities to justify the operation. The proposed cross-cuts will assist in the location of the channel, serving also as probes for secondary ore bodies. Elevations of the various drill holes at the ground surface, and in cases where ore was present, at the contact between the ore-bearing Shinarump and the Moenkopi formations are given on the Claim Map, Exhibit "A".

For General Information on regional geology, see Geologic Map, Exhibit "D".

4. Operational Plan:

The main heading will be advanced at the rate of 3.5 ft. per day, using two miners and one mucker. 249 working days will be required for the full 870 ft. of tunnel; based on a 48 hour week, completion will be 10.4 months after work is commenced. A second crew, identical to that in the main tunnel will begin operations on the No. 1 cross-cut approximately 8 weeks after the commencement of work in the main drift; due to the smaller size of these headings, advance will be 4.0 ft. per day, thereby completing all 8 cross-cuts in 188 working days, or 7.9 calendar months.

Both crews will be under the direction of a Mine Superintendent who will be managing White Canyon Mining Company properties in the area and who will be required to spend 65% of his time on supervision of this particular project. Engineering and Surveys will be provided as needed by Western Engineers, Consultants, of Grand Junction, Colorado.

It is proposed to use electrically powered carts for removing muck; two such carts, along with the 3 K.V.A. Generator required for power, will be rented and put into operation as soon as space permits. A 1500 gallon water tank will be rented and installed on the rim directly above the adit. Water will be hauled from Fry Spring, approximately 3 miles from the site. Ample and continuous flow is available at the spring for both mining and domestic use.

Ventilation will be provided by 12" diameter Drill Holes at intervals of about 300 ft.; circulation will be forced by means of blowers. These Air Vents will be drilled by contract as needed, and will be steel cased. As the operation progresses, water and air lines may be brought into the mine through these vents rather than from the more distant adit.

It will be necessary to improve some of the existing roads and construct some new ones before heavy materials can be trucked into the site. It will also be necessary to strip some of the slide debris and overburden from the rim adjacent to the mine. The applicant wishes to expose the rim in the vicinity of the

secondary channel previously mentioned. This channel outcrops on the Dare Claim. For these miscellaneous operations, 200 hours of Tractor Operation have been provided in the estimate.

5. Estimate of Cost:

Labor:	Main Tunnel, 2 miners @ $1.75 per hr. 1 mucker @ 1.60 " " Av. rate, based on no over-time day per week, $14.20 per day, 249 days, - -	$11,005.80
	Cross-cuts, same type crew, $14.20 per day, 148 days, - - - -	8,309.60
Superintendent @ $600 per month, 65% pay for 10.4 months, - - - - - -		4,056.00
	Sub-total	$23,371.40
Equipment Rental:		
	2 Power Darts @ $130 per mo. each, $260.00 x 10.4, - - - - -	$ 2,704.00
	1-3 KVA Generator @ $60 per mo., 60.00 x 10.4, - - - - -	624.00
	1 Compressor 4 Jack Hammers 2 Blowers 1- 1500 gal. Water Tank } 300.00 x 10.4 - - - - - - - - - -	3,120.00
	1 EMCO Air Loading Machine, 125.00 x 10.4 - - - - - - - - - -	1,300.00
	Sub-total	7,748.00
Materials:		
	20 Tons of 20# Rail @ $186.20 per ton, - - - - - - - - - - - -	$ 3,724.00
	1000 ft. of 2" Black Pipe @ $0.44 per ft. - - - - - - - - - -	440.00
	Drill Steel and Bits, -	450.00
	Small Tools and Supplies, - - - - - - - - - - - - - - - - - -	100.00
	Powder, Caps and Fuse, - - - - - - - - - - - - - - - - - - -	2,500.00
	Carbide, -	120.00
	Gas and Oil -	2,100.00
	Ties, Bolts and Fish Plates, - - - - - - - - - - - - - - - -	750.00
	213 ft. of 12" Steel Casing @ $2.35 per ft. - - - - - - - -	735.55
	Sub-total	$10,919.55
Contract Work:		
	307 ft. of 12" Air Shaft @ $8.00 per ft., - - - - - - - - - -	$ 2,456.00
	200 hrs. Dozer Operation, (D-7 or equiv.), @ $12.00 per hr -	2,400.00
	Sub-total	$ 4,856.00

Structures:

Tool Shed, Living Quarters and Misc. Structures, - - - - - - $ 1,500.00

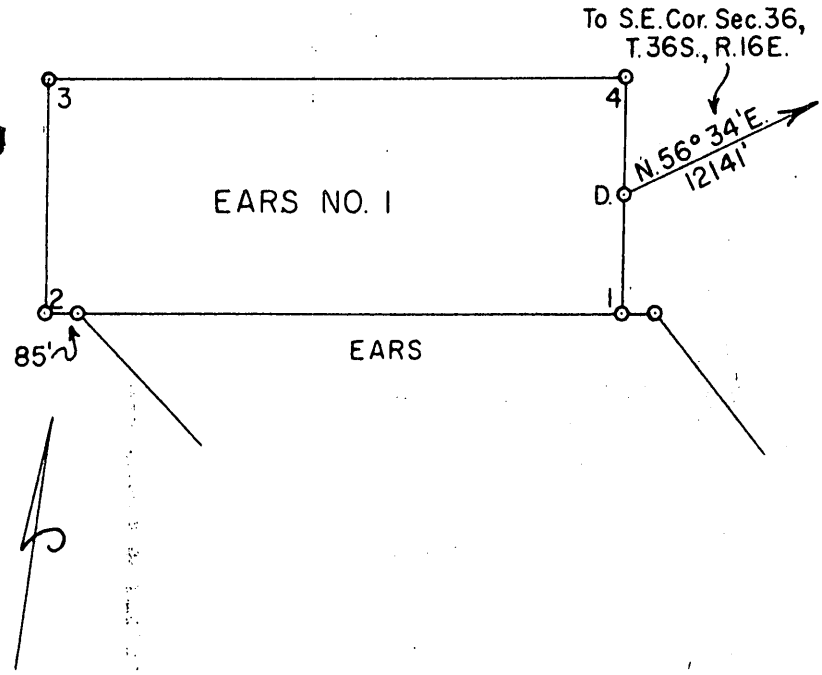
6. Summary of Cost:

Labor, - - - - - - - - - - - - - - - - - -	$23,371.40
Equipment Rental, - - - - - - - - - - - -	7,748.00
Materials, - - - - - - - - - - - - - - - -	10,919.55
Contract Work, - - - - - - - - - - - - - -	4,656.00
Structures,- - - - - - - - - - - - - - - -	1,500.00
Sub-Total	$48,194.95
10% Contingencies and Gen. Expense -	4,819.50
6% Engineering and Inspection, - -	3,194.57
Total Cost of Project,- - - - -	$56,126.52

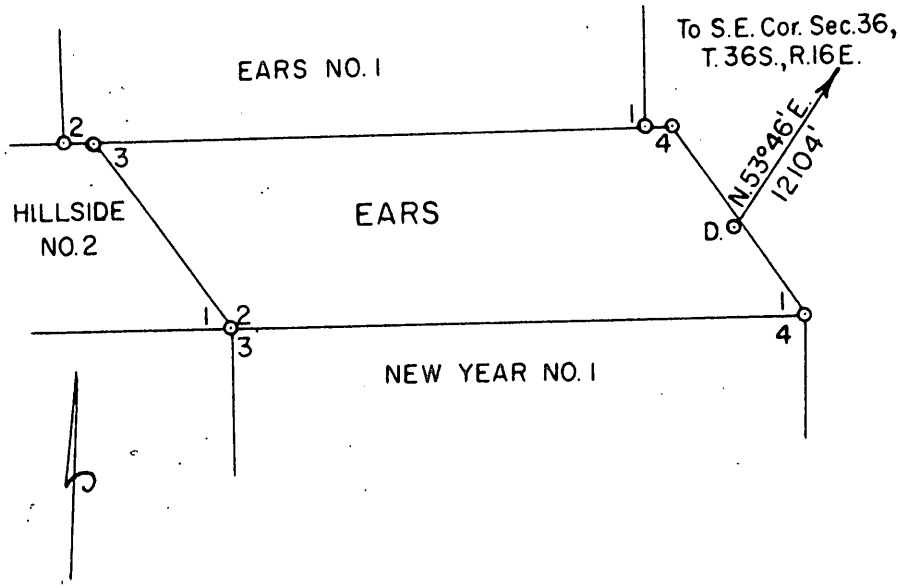
7. This report is based on field studies and surveys conducted by personnel of Western Engineers, P. O. Box 571, Grand Junction, Colorado. The estimate of costs and other engineering data are substantiated by the appended maps and drawings. If further information is required, address inquiry to White Canyon Mining Company, P. O. Box 848, Grand Junction, Colorado, or to Western Engineers at the address given above.

Signed - - Daniel C. Holder
for
WESTERN ENGINEERS

EARS NO. 1 CLAIM



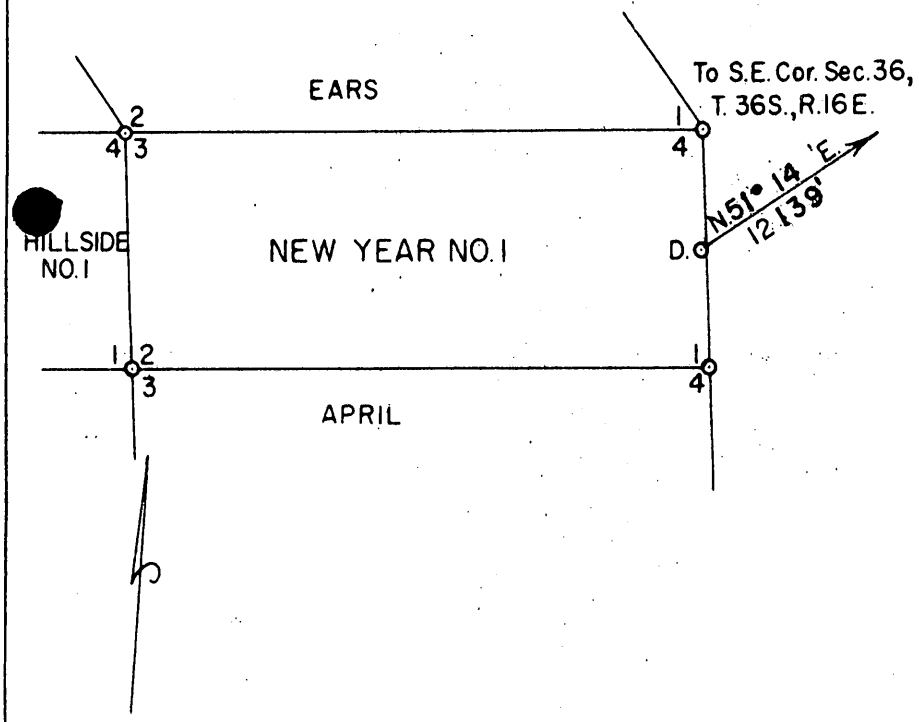
Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E.Cor. of Sec.36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.56°34'E. a distance of 12,141 ft.; thence S.08°04'E. a dist. of 300 ft. to Cor.1; thence S.81°56'W. a dist. of 1500 ft. to Cor.2; thence N.08°04'W. a dist. of 600 ft. to Cor.3; thence N.81°56'E. a dist. of 1500 ft. to Cor.4; thence S.08°04'E. a dist. of 300 ft. to the place of beginning. Ears No. 1 Claim is adjacent to and contiguous with the Ears Claim on the southerly side. Located approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 37 South, Range 16 East of the county of San Juan, State of Utah.



Ears Claim

Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E. Cor. of Sec.36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.53°46'E. a distance of 12,104 ft.; thence N.27°10'E. a dist. of 20.5 ft. to the East end-center; thence S.57°10'E. a dist. of 300 ft. to Cor.1, which point is common with Cor.4 of the New Year No.1 Claim; thence S.81°56'W. a dist. of 1500 ft. to Cor.2, which point is common with Cor.3 of said New Year No.1; thence N.57°10'W. a dist. of 600 ft. to Cor.3; thence N.81°56'E. a dist. of 1500 ft. to Cor.4; thence S.57°10'E. a dist. of 300 ft. to the East end-center. The Ears Claim is adjacent to and contiguous with the Ears No. 1 Claim on the northerly, the New Year No.1 on the southerly and the Hillside No.2 on the westerly side. Located approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 37 South, Range 16 East, San Juan County, Utah.

EXHIBIT B



NEW YEAR NO.1 CLAIM

Beginning at the point of discovery, said point being marked with a mound of rocks frommwhence the S.E. Cor. of Sec. 36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.51° 14'E. a distance of 12,139 ft.; thence N.58°28'E. a dist. of 12.4 ft. to the East end-center; thence S.09°14'E. a dist. of 300 ft. to Cor.1, which point is common with Cor. 4 of the April Claim; thence S.81°56'W. a dist. of 1500 ft. to Cor. 2, which point is common with Cor3 of said April Claim; thence N.09°14'W. a dist. of 600 ft. to Cor. 3, which point is common with Cor.2 of the Ears Claim; thence N.81°56'E. a dist. of 1500 ft. to Cor.4, which point is common with Cor.1 of siad Ears Claim; thence S.09°14'E. a dist. of 300 ft. to the east end-center. The New Year No. 1 Claim is adjacent to and contiguous with the Ears Claim on the northerly, the Hillside No.1 on the westerly, and the April Claim on the southerly side. Located approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 3~~8~~7 South, Range 16 East, San juan County, Utah

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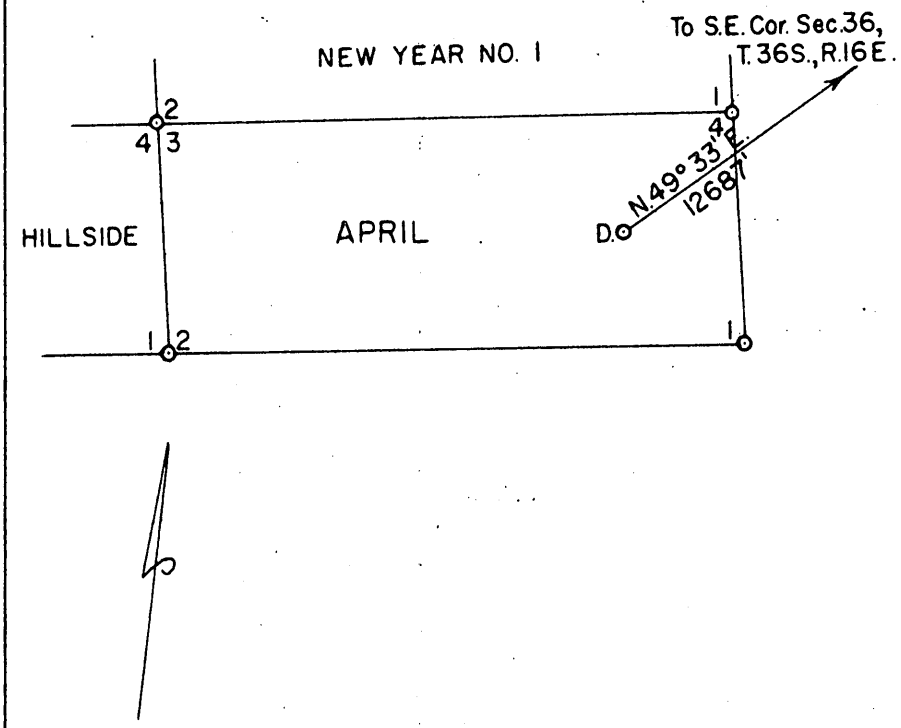
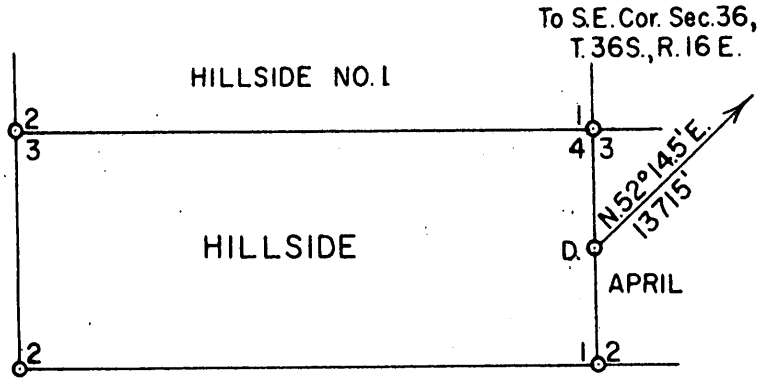


APRIL CLAIM

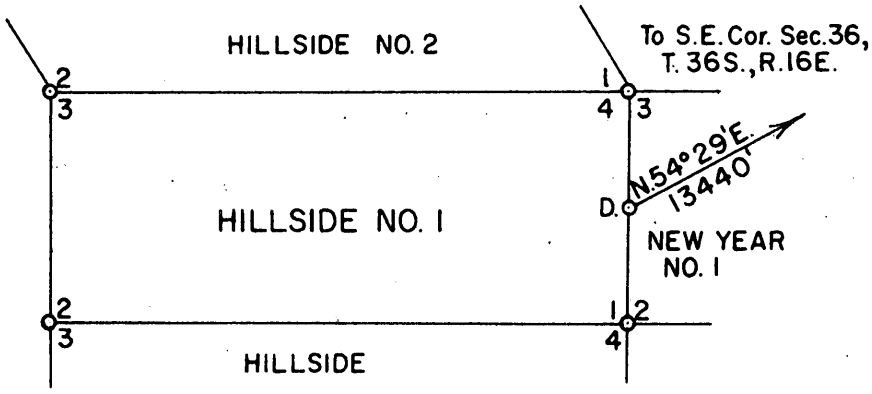
Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E. Cor. of Sec.36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.49°33'E. a distance of 12687 ft.; thence N.81°56'E. a dist. of 300 ft. to the East end-center; thence S.09°14'E. a dist. of 300 ft. to Cor.1; thence S.81° 56'W. a dist. of 1500 ft. to Cor.2; thence N.09°14'W. a dist. of 600 ft. to Cor.3, which point is common with Cor.2 of the New Year No.1 Claim; thence N.81°56'E. a dist. of 1500 ft. to Cor.4, which point is common with Cor.1 of said New Year No.1 Claim; thence S.09°14'E. a dist. of 300 ft to the East end-center. The April Claim is adjacent to and contiguous with the New Year No. 1 on the northerly, the Hillside on the westerly side. Located approximately 3 miles S.W. of Fry Camp, 60 mi. S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 3~~8~~7 South, Range 16 East, San Juan County, Utah.

EXHIBIT B



HILLSIDE CLAIM

Beginning at the point of discovery, said point being marked with a mound of rocks, from whence the S.E. Cor. of Sec.36, T.36 S., R.16 E of the Salt Lake Meridian bears N.52°14½'E. a distance of 13,715 ft.; thence S.09°14'E. a dist. of 300 ft. to Cor.1, which point is common with Cor.2 of April Claim; thence S.81° 56'W. a dist. of 1500 ft. to Cor.2; thence N.09°14'W. a dist. of 600 ft. to Cor.3, which point is common with Cor.2 of Hillside No.1; thence N.81°56'E. 1500 ft. to Cor.4, which point is common with Cor. 1 of said Hillside No.1; thence S.09°14'E. a dist. of 300 ft. to the place of beginning. The Hillside Claim is adjacent to and contiguous with the April Claim on the easterly and the Hillside No.1 on the northerly side. Located approximately 3 mi S.W. of Fry Camp, 60 Mi. S.W. of Blanding, in unsurveyed Section 10, Township 37 South, Range 16 East, San Juan County, Utah.

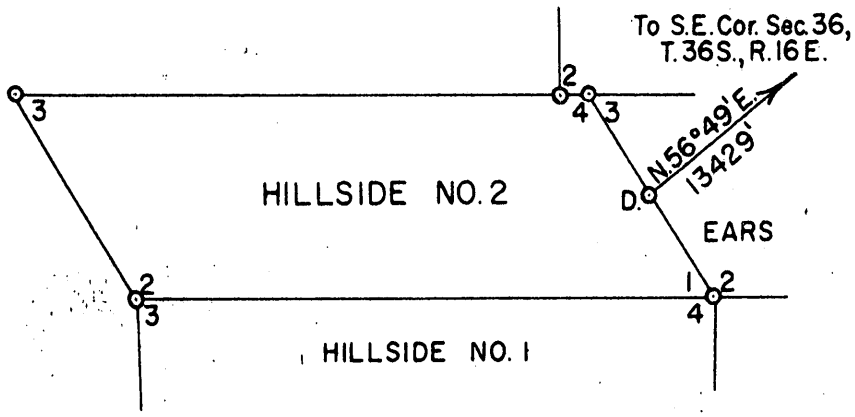


HILLSIDE NO. 1 CLAIM

Beginning at the point of discovery, said point being marked with a mound of rocks, from whence the S.E. Cor. of Sec. 36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.54°29'E. a dist. of 13,440'; thence S.09°14'E. 300 ft. to Cor.1, which point is common with Cor.4 of Hillsde; thence S.81°56'W. a dist. of 1500 ft. to Cor.2, which point is common with Cor.3 of said Hillside; thence N.09°14'W. 600 ft to Cor.3, which point is common with Cor. 2 of Hillside No.2; thence N.81°56'E. 1500 ft. to Cor.4, which point is common with Cor.1 of said Hillside No.2; thence S.09°14'E. 300 ft. to the place of beginning. The Hillside No.1 Claim is adjacent to and contiguous with the Hillside No.2 on the northerly, the New Year No.1 on the easterly, and the Hillside Claim on the southerly side. Located approximately 3 mi S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sec.10, Township 37 South, Range 16 East, San Juan County, Utah.

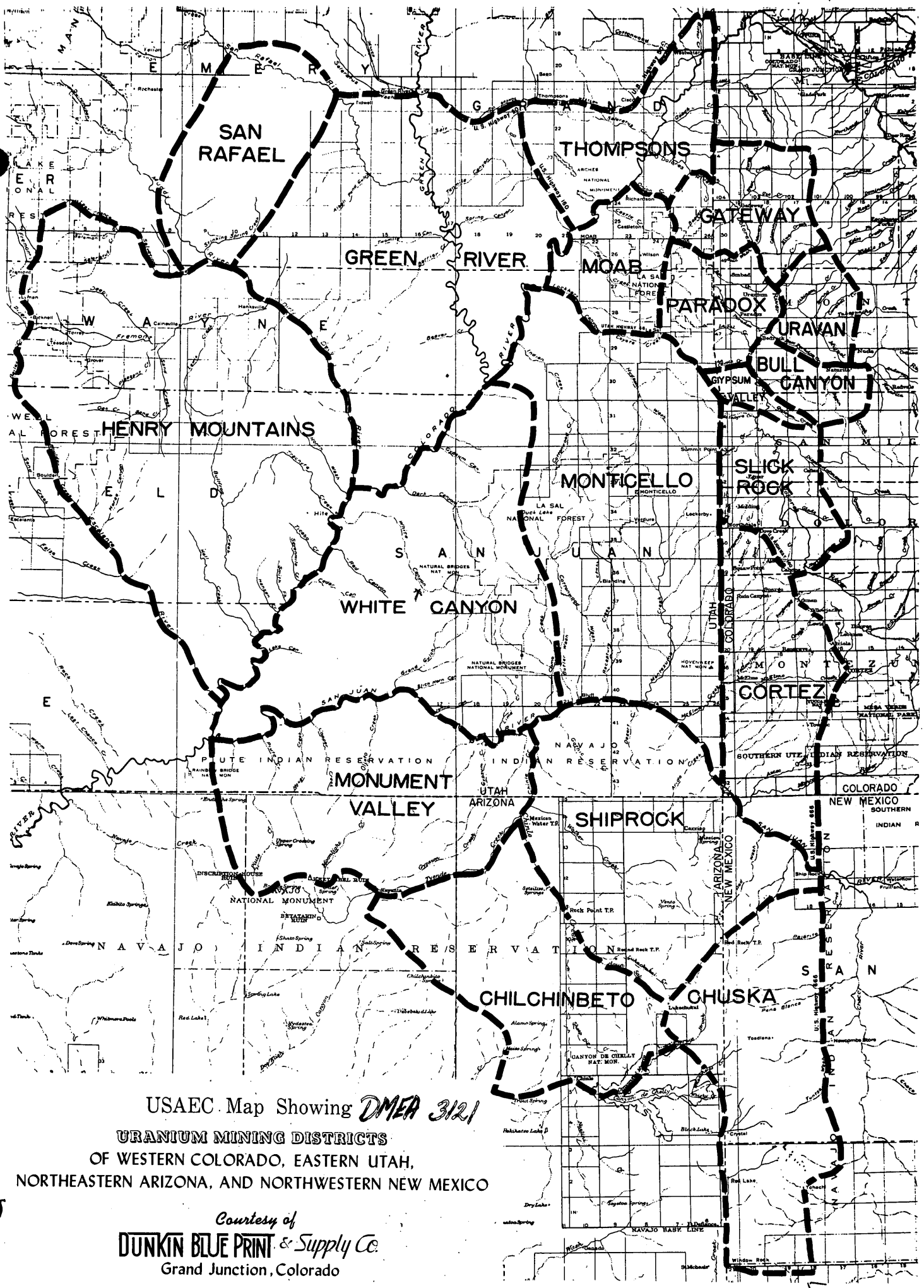
EXHIBIT B

HILLSIDE NO.2 CLAIM



Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E. Cor. of Sec. 36 S., R.16 E. of the Salt Lake Meridian bears N.56°49'E. a dist. of 13,429 ft.; thence S.57°10'E. 300 ft. to Cor.1, which point is common with Cor.4 of Hillside No. 1 Claim; thence S.81°56'W. a dist. of 1500 ft. to Cor.2, which point is common with Cor.3 of said Hillside No.1; thence N.57° 10'W. 600 ft. to Cor.3; thence N.81°56'E. 1500 ft. to Cor.4; thence S.57°10'E. 300 ft. to the place of beginning. The Hillside No. 2 Claim is adjacent to and contiguous with the Ears Claim on the easterly, and the Hillside No. 1 Claim on the southerly side. Located in unsurveyed Sec.10, Township 37 South, Range 16 East, approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in San Juan County, Utah.

EXHIBIT B



USAEC Map Showing DMEA 3121

URANIUM MINING DISTRICTS

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

Courtesy of

DUNKIN BLUE PRINT & Supply Co.
Grand Junction, Colorado

EXHIBIT C

FILE COPY
SURNAME:

Murphy
Ellis
Hedges
Harper
Selfridge
Hoffman

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

NOV 20 1953

[illegible]
[illegible] Canyon [illegible]
[illegible] Box [illegible]
[illegible], Colorado

Re: Docket [illegible] (Uranium)
[illegible] Claim Group (April Mine)
San Juan County, Utah

Dear [illegible]:

Your application for an exploration project and other data which appear to be in question concerning the above-referenced 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 amounts that will significantly improve the mineral supply position for the national defense program.

Careful study of all our information, although noting the occurrence of uranium mineralization in holes previously drilled on your property, leads us to the [illegible] that the availability of claims for further drilling are reserved by [illegible] program is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that our application is denied.

We wish to express our appreciation for the Defense Minerals Exploration Administration's consideration in bringing the referenced property to our attention.

I remain yours,

Jos. O. Mittendorf (fwa)

Administrator

Security/[illegible]
[illegible]
11/[illegible]/53
cc to: [illegible] Operating Committee
Docket
Messrs. [illegible] Jr. [illegible]
[illegible] Jr., [illegible]
[illegible]
[illegible]
[illegible] Div. [illegible] (2)

DENIED

R.C.G.
11-23-53.

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

November 9, 1953

SUMMARY OF PROPOSED PROJECT

Docket No. DMEA-3121
Applicant: The White Canyon Mining Co.,
Post Office Box 801
Grand Junction, Colorado

Subject: Denial of application

Commodity: Uranium
Location of property: Ears Claim group (April Mine)
San Juan County, Utah Region IV
Amount of application: $56,428.00
Date of application: July 8, 1953

Outline of Project: The Applicant proposes to explore uranium-bearing rock in the Shinarump formation by driving an adit approximately 870 feet long and cross-cutting 50 feet on each side of the adit at 100-foot intervals; eight cross-cuts in all are planned.

Field Team Report: Dated September 21, 1953
by M. H. Salsbury, Mining Engineer, USBM, and
Albert F. Trites, Jr., Geologist, USGS.
Transmittal letter dated October 9, 1953
by Field Team, Region IV.

Recommendations: The Field Team recommends denial of the application. The Field Team and representatives of the Atomic Energy Commission concur in the belief that as a result of the latter's drilling program on the subject property the Applicant's claims have been adequately explored, and that the chances are meager of finding a uranium deposit on these claims which would be large enough to justify the proposed expenditure.

Commodity Members' comments:

Bureau of Mines: H. D. Keiser, November 4, 1953.

Concurs with Field Team recommendation of denial.

Geological Survey: Arthur P.Butler, Jr., November 3, 1953.

"As the results of exploration to date have reasonably well delineated probable size and distribution

of ore in the ground where exploration was proposed, and as the AEC will do more drilling in other favorable parts of the applicant's property, I concur with the recommendation of the Field Team that the application be denied."

Rare & Misc. Metals Division Engineer: F. M. Murphy

Comments: The proposed drift on the south channel would benefit the subject property in the exploitation of ore indicated by the A.E.C. diamond drilling program. As the property has already been thoroughly explored and ore discovered, the proposed drift can only be considered as development for exploitation purposes, and therefore can not be approved for DMEA assistance.

The proposed bulldozer trenching of talus to expose the north channel is not considered necessary, as the A.E.C. plans to diamond drill this channel soon.

I recommend that the application be denied.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare & Misc. Metals Division

11/9/53 gla

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

November 4, 1953

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4640

From: H. D. Keiser, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket 3121, White Canyon Mining Co., San Juan County, Utah.

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

I concur with the Field Team in denial of the application involved under the subject docket.

The report has been forwarded to the Chief, Minerals Division, Bureau of Mines, in accord with the routing slip attached thereto.

H. D. Keiser

H. D. Keiser

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

November 4, 1953

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Signed

H. D. Keiser

HDKeiser:et

Copy to: Rare and Precious Metals Branch
Minerals Division
H. D. Keiser
F i l e s

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

DATE: November 3, 1953

FROM : Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

SUBJECT: Final Field Team Report DMEA Docket 3121, (Uranium), White Canyon Mining Company, applicant, Grand Junction, Colorado; Ears No. 1, New Year No. 1, Hillside, Hillside No. 1, Hillside No. 2, and April claims, Secs. 10 and 11, T. 37 S., R. 16 E., unsurveyed, Frey Canyon, San Juan County, Utah

The Field Team report and related memoranda concerning results of examination of the property identified in the subject above, have been reviewed. The examining members of the Field Team were accompanied in examination of the property by L. J. Miller, and Daryl Spencer of the Atomic Energy Commission.

Proposal

The applicant proposed to explore for uranium ore in parts of the Shinarump conglomerate filling one of two buried channels across its property. Exploration was to consist of 870 feet of drifting south-westerly along the more southerly channel, 400 feet of cross-cutting, some rim stripping, and auxiliary work at a total cost of about $56,430.

Comment

Drilling by the Atomic Energy Commission has approximately delineated the ore-bearing channel-fill rock filling a channel and discovered about 8,000 tons of ore partly on the applicant's property, and revealed the probable size and distribution of ore bodies in the south channel. The examiners concluded that the proposed drifting by the applicant is in ground where the results of AEC exploration suggest that there is little chance that the drifting would find an appreciable amount of ore. It would instead be mainly access development to ore already discovered. The AEC plans further drilling on the north channel, and the examiners could recognize no feasible modified program of DMEA work. Therefore, they recommend denial of the application.

Recommendation

As the results of exploration to date have reasonably well delineated probable size and distribution of ore in the ground where exploration was proposed, and as the AEC will do more drilling in other favorable parts of the applicant's property, I concur with the recommendation of the Field Team that the application be denied.

Arthur P. Butler, Jr.

CC: E. Wm. Ellis (2)

E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

November 3, 1953

Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

Final Field Team Report DMEA Docket 3121, (Uranium), White Canyon Mining Company, applicant, Grand Junction, Colorado; Ears No. 1, New Year No. 1, Hillside, Hillside No. 1, Hillside No. 2, and April claims, Secs. 10 and 11, T. 37 S., R. 16 E., unsurveyed, Frey Canyon, San Juan County, Utah

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CC: E. Wm. Ellis (2)

E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

November 3, 1953

Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

Final Field Team Report DMEA Docket 3121, (Uranium), White Canyon Mining Company, applicant, Grand Junction, Colorado; Bars No. 1, New Year No. 1, Hillside, Hillside No. 1, Hillside No. 2, and April claims, Secs. 10 and 11, T. 37 S., R. 16 E., unsurveyed, Frey Canyon, San Juan County, Utah

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Recommendation

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CC: E. Wm. Ellis (2)

10/15/53 gla

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

224 New Customhouse
Denver 2, Colorado

October 9, 1953.

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3121 (Uranium), White Canyon Mining Company, San Juan County, Utah.

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

Because of the drilling already done by AEC, we believe the applicant's claims have been adequately explored and that the chances of finding a uranium deposit large enough to justify the proposed expenditure are small.

We recommend that the application be denied.

W. H. King

A. H. Koschmann

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
10-21-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

October 12, 1953.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination - DMEA Docket 3121 (Uranium), White Canyon Mining Company, San Juan County, Utah.

Enclosed are eleven copies of the engineering report on the subject docket.

The applicant requested $56,428.52 for 870 feet of drifting and 400 feet of crosscutting.

The field examiners conclude that AEC drilling has adequately explored the property and DMEA assistance is not warranted.

We recommend that the application be denied.

W. H. King

W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
10-21-53
(date)

Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Building 20, Room 137
Denver Federal Center,
Denver 14, Colorado
October 1, 1953

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 3121, Ears Claim group (Uranium), White Canyon Mining Company, Inc., San Juan County, Utah

Submitted herewith are the original and ten copies of the "Summary, Conclusions, and Recommendations", by M. H. Salsbury, Bureau of Mines, and Albert F. Trites, Jr., Geological Survey, and of Salsbury's engineering report on the subject docket.

Salsbury concludes, and is supported by representatives of the Geological Survey and Atomic Energy Commission, that proposed bulldozer stripping of a north channel is not warranted as the Commission has plans for more diamond drilling of that area; the underground exploration of a south channel by drifting from the rim with included interval crosscutting is mainly development and the cost is not justified for the small ore bodies that are likely to be developed. He recommends denial of the application and I approve.

One brochure only, furnished with your instructions by memorandum of August 18, 1953, to prepare a suitable report, was transmitted to R. P. Fischer.

W. M. Traver

W. M. Traver

enclosures

cc: 10
DMEA 3121
Chron.

WMT/cb

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
200 New Customhouse
Denver 2, Colorado

October 5, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3121, White Canyon Mining Company, San Juan County, Utah

Enclosed are 11 copies of the geologic report by A. F. Trites, Jr., of the U. S. Geological Survey covering the above docket.

It has been recommended that the loan be denied.

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (11)

DEPARTMENT OF THE INTERIOR
Division of Raw Materials
RECEIVED
OCT 1 1953

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

October 2, 1953

MEMORANDUM

TO: A. H. Koschmann
DMEA Field Team, Region IV

FROM: R. P. Fischer
Acting Supervisor, Colorado Plateau District

SUBJECT: DMEA 3121, White Canyon Mining Company, San Juan County, Utah

Transmitted herewith are eleven copies of a geologic report on the Ears claim group (April Mine), White Canyon Mining Company, San Juan County, Utah. The company applied for assistance to explore for uranium deposits. The proposed work consists of 870 feet of drifting and 400 feet of crosscutting, plus a small amount of other work. The estimated total cost is $56,428.52.

The attached report was prepared by A. F. Trites, Jr., and is based on a joint field examination on September 2 and 3, 1953, in company with M. H. Salsbury, U. S. Bureau of Mines, and L. J. Miller and Daryl Spencer, U. S. Atomic Energy Commission.

The proposed work was planned to test one of two ore-bearing channels on the applicant's claims. Since the application was submitted, however, AEC completed additional diamond drilling in the ground that would be tested by the proposed drifting. On the basis of this additional work, it is concluded by the examining team and by AEC representatives that this channel is adequately tested and that there is little or no chance of finding a deposit with the proposed work. For that reason, it is recommended that the application be denied.

As AEC is continuing drill exploration of the second channel on these claims, the examining team did not recognize a feasible modified program of exploration for a DMEA project, and none is recommended.

I concur with the conclusions and recommendations of the attached report.

Sincerely yours,

R P Fischer

R. P. Fischer
Acting District Supervisor
Colorado Plateau District

RPF/je
Enclosures 11

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA 3121, Ears Claim Group

White Canyon Mining Company, Inc.

San Juan County, Utah

Uranium

M. H. Salsbury, Mining Engineer
Bureau of Mines

Albert F. Trites, Jr.
Geologist, Geological Survey

September 21, 1953

DMEA 3121

EARS CLAIM GROUP

WHITE CANYON MINING COMPANY, INC.

SAN JUAN COUNTY, UTAH

Summary, Conclusions, and Recommendations

By M. H. Salsbury
Mining Engineer
Bureau of Mines

and

Albert F. Trites, Jr.
Geologist
Geological Survey

DMEA 3121

EARS CLAIM GROUP
WHITE CANYON MINING COMPANY, INC.
SAN JUAN COUNTY, UTAH

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By M. H. Salsbury and A. F. Trites, Jr.

The Ears Claim group, property of the White Canyon Mining Company, Inc., Grand Junction, Colo., located in the White Canyon Mining District, San Juan County, Utah, was investigated on September 2 and 3, 1953, by a Region IV Defense Minerals Exploration Administration examining team, accompanied by field personnel of the Atomic Energy Commission and Raymond Starr, representing the applicant.

Application has been made for Government assistance to explore buried stream channels in the Shinarump formation by adit tunnel, crosscuts, and surface stripping, at an estimated cost of $56,428.52--Government participation 90 percent, or $51,785.76. Denial of the application is recommended.

Seven contiguous claim locations cover two branching channels in the ore-bearing Shinarump conglomerate, portions of which have been disclosed to be ore-bearing by an exploratory drilling program of the Atomic Energy Commission. The major ore occurrence, at the junction of the two channels, appears to be largely on a conflicting prior claim location not owned by the applicant.

The claims are on branching channels cut into beds of the Moenkopi formation. The south branch of the channel is approximately 30 feet wide and 14 feet deep; the north branch is slightly smaller. The channels have been filled with beds of sandstone, siltstone, and conglomerate of the Shinarump conglomerate.

Two uranium deposits have been found in the lower 3 feet of the Shinarump conglomerate, one near the junction of the branches and the other in the south branch. The part of the deposit on those claims near the junction of the branches contains approximately 8,000 tons of ore, having an average grade of 0.25 percent U_3O_8. The deposit in the south branch contains a maximum of 1,500 tons of ore, having an average grade of 0.25 percent U_3O_8.

The north channel branch is almost totally unexplored and some 800 feet of the south channel is untouched except for a few preliminary drill holes, most of which were at some distance from the position of the channel as later established. The width of the channel at the rim outcrop and evidence from drill holes indicate that the channel in the unexplored area is narrow.

The Atomic Energy Commission plans further drilling along the north channel, but has completed its exploration of the south channel.

It is concluded by the examining team, and the Atomic Energy Commission representatives concur, that the proposed stripping of the north channel talus-covered outcrop is not necessary in view of the plans for more drilling by the Atomic Energy Commission and that

underground exploration of the south channel is essentially development and the cost is not justified by the probable small extent of any ore bodies which might be encountered along the line of the proposed tunnel. Denial of the application is recommended.

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS MCKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM

REGION IV

DMEA 3121 (Uranium)

WHITE CANYON MINING COMPANY, EARS CLAIM GROUP (APRIL MINE), SAN JUAN COUNTY, UTAH

Geologic report

Albert F. Trites, Jr.

U. S. Geological Survey

October 2, 1953

WHITE CANYON MINING COMPANY, EARS CLAIM GROUP (APRIL MINE), SAN JUAN COUNTY, UTAH

INTRODUCTION AND SUMMARY

The White Canyon Mining Company, P. O. Box 801, Grand Junction, Colo., has applied (DMEA 3121) to the Defense Minerals Exploration Administration for financial assistance to explore for uranium in the White Canyon district, San Juan County, Utah (fig. 1). The company owns the Ears, Ears No. 1, New Year No. 1, Hillside, Hillside No. 1, Hillside No. 2, and April claims in secs. 10 and 11, T. 37 S., R. 16 E., unsurveyed, Salt Lake meridian. These seven unpatented claims are in a contiguous group on the rim along the south side of Frey Canyon, a tributary to White Canyon, approximately 67 miles by road west of Blanding, Utah. The properties are reached from Blanding by Utah Highway 95, a secondary road in Frey Canyon, and an extremely steep mine road to the claims. The claims are about 85 miles from Monticello, Utah, the nearest station for receiving uranium ores. The Hite mill of the Vanadium Corporation of America is about 30 miles by road west of the claims, but is receiving ore only from the Happy Jack Mine. However, it is believed that plans are being made for the expansion of this mill for the treatment of much of the ore from the White Canyon area.

The applicants proposed to drive 870 feet of exploratory drift and 400 feet of crosscuts in the channel. The proposed drift would extend from a point on the ore rim to an intersection with U. S. Atomic Energy Commission diamond-drill hole 11 (fig. 2). This drill hole and hole 64 are believed to have penetrated a small uranium deposit near the center of the channel. The crosscuts were planned to explore the channel for

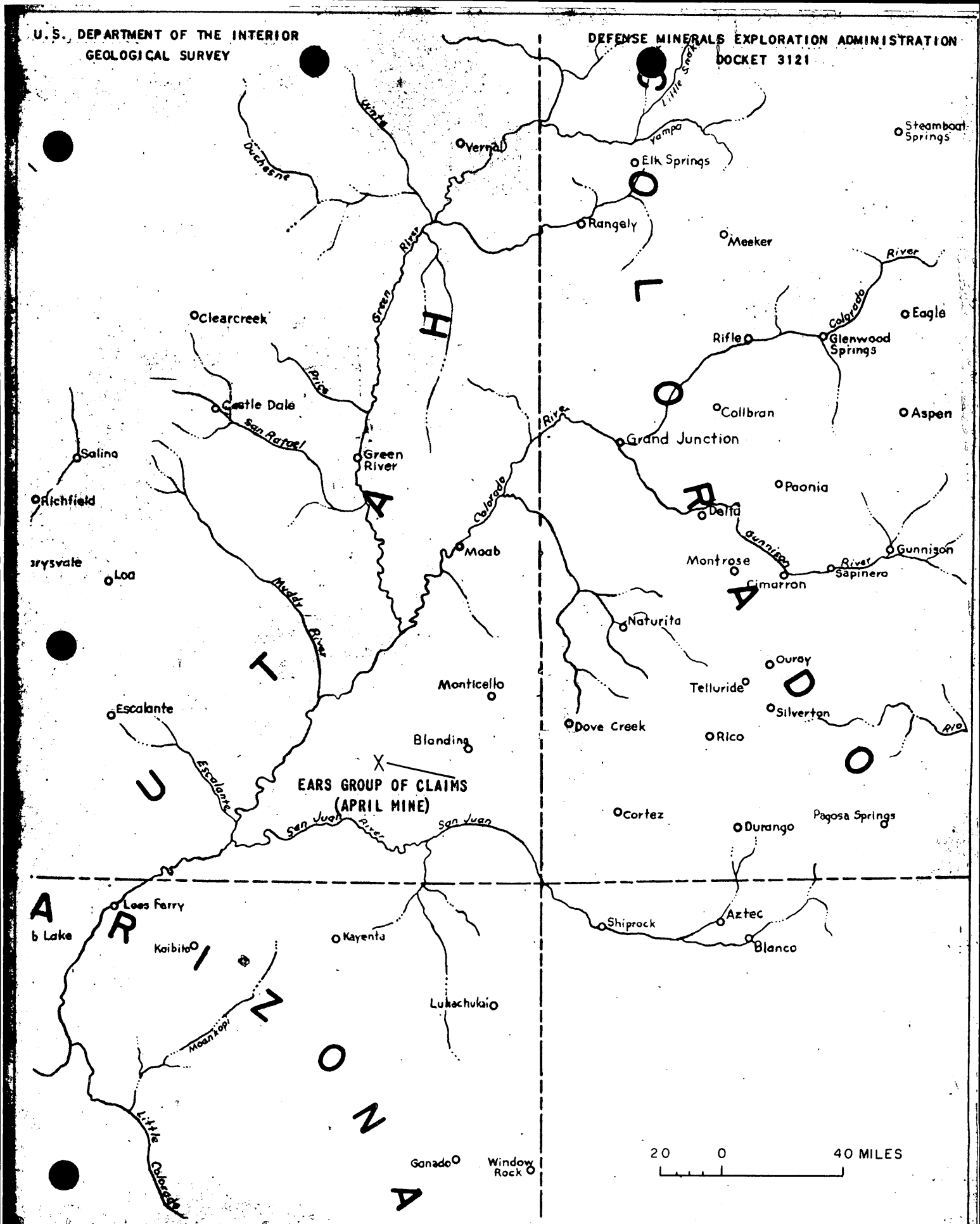

Figure 1. INDEX MAP SHOWING LOCATION OF THE EARS GROUP OF CLAIMS (APRIL MINE), SAN JUAN COUNTY, UTAH

50 feet on either side of the center line of the drift at intervals of 100 feet; a total of eight crosscuts were proposed. It was further proposed to expose the north branch of the channel by bulldozer trenching where it is covered by talus on their property, to build a road to the portal of the drift, to build structures for equipment and living, and to provide underground ventilation by churn-drill holes having a diameter of 12 inches and spaced at intervals of about 300 feet. The estimated total cost of this work is $56,428.52 of which Government participation would be $50,785.67.

The claims were examined on September 2 and 3, 1953, by M. H. Salsbury of the U. S. Bureau of Mines, L. J. Miller and Daryl Spencer of the U. S. Atomic Energy Commission, and Albert F. Trites, Jr., of the U. S. Geological Survey. The field examiners, and the AEC representatives as well, are agreed that the channel on the New Year and New Year No. 1 claims between the outcrop and drill hole 11 has been adequately tested by drilling and that there is little chance of finding a significant deposit with the proposed drifting and crosscutting, and, furthermore, that under these conditions, a drift to drill hole 11 would be more appropriately considered development work rather than exploration. For these reasons, it is recommended that the application be denied.

GEOLOGY

The area of the Ears group of claims is on the west flank of the Monument upwarp that extends from northeastern Arizona to Elk Ridge in southeastern Utah. Rocks exposed in the area consist of sedimentary beds of Permian, Triassic, and Jurassic ages. These rocks dip approximately 2° W.

The Moenkopi formation (lower Triassic), the Shinarump conglomerate (upper (?) Triassic), and the lower unit of the Chinle formation (upper Triassic) are exposed at the claims. Talus and slide rock have covered some of the Shinarump and Chinle beds on the claims.

The Moenkopi formation is approximately 300 feet thick and consists of interlayered beds of brown siltstone, fine-grained sandstone, and shale. The Moenkopi beds immediately underlying the Shinarump conglomerate have been bleached greenish-gray from a few inches to 2 feet.

The Shinarump conglomerate ranges from 30 to 50 feet thick and is composed of beds of conglomeratic sandstone, siltstone, and conglomerate. The lower beds of the Shinarump conglomerate fill a channel that has been cut into new Moenkopi formation. This channel is bifurcated approximately 1,500 feet behind the rim (fig. 2). This channel, trending roughly N. 45° E., has been followed for more than 2,500 feet by diamond drilling and is believed to be the same channel being drilled on the north side of Red Canyon one mile southwest of the rim. The south branch of the channel is approximately 300 feet wide and 20 feet deep where it has been exposed by bulldozer trenching at the rim. The base of the north branch of the channel is covered at the rim, but diamond drilling has suggested that this channel is slightly smaller than the south branch. These two branches coalesce to form a channel more than 200 feet wide and 28 feet deep.

The lower unit of the Chinle formation is about 250 feet thick and at the outcrop forms a slope above the Shinarump conglomerate. Most of the unit is composed of beds of light-gray clay and siltstone and a few lenticular beds of fine- to medium-grained sandstone. A sandstone bed, commonly called the Mossback sandstone in the White Canyon district, forms the capping ledge; this sandstone ranges from 30 to 50 feet thick.

ORE DEPOSITS

In the White Canyon district, the uranium-bearing deposits are in Shinarump beds that fill channels cut into the Moenkopi formation. Most of the deposits are in the central, deeper parts of the channels where they form tabular masses that lie essentially parallel with the bedding. The deposits range in size from a few tons to many thousand tons of ore; deposits of average size contain a few hundred to a few thousand tons. The ore bodies consist of uranium and copper minerals that impregnate the rock and replace fossil wood. Pitchblende is the dominant uranium mineral and is associated with copper sulfides and pyrite.

The uranium deposits in the Ears group of claims are in the lower 3 feet of the Shinarump conglomerate in conglomeratic sandstone containing carbonized wood and siltstone pebbles. The uranium is believed to be contained in pitchblende that is replacing carbonized wood, and is associated with chalcopyrite and pyrite that have impregnated the sandstone and replaced wood.

A large uranium deposit near the center of the channel at the junction of the channels has been discovered by diamond drilling by the U. S. Atomic Energy Commission. Most of this deposit is believed to be on the Gizzmo No. 5 claim (fig. 2) owned by D. V. Blake, White Canyon, Utah, who is planning to drive an inclined shaft to the ore body. A smaller part of this deposit is believed to be on the claims owned by the White Canyon Mining Company, and to have been penetrated by diamond-drill holes 17, 49, and 67 (fig. 2 and table 1). The segment of this ore body owned by the White Canyon Mining Company is estimated to be 400 feet long, 90 feet wide, and 3 feet thick. On the basis of 14 cubic feet of rock per ton, this deposit would contain approximately 8,000 tons of ore having an average grade of 0.25 percent U_3O_8.

A smaller deposit, approximately 180 feet long, 40 feet wide, and 3 feet thick, was penetrated by diamond-drill holes Nos. 11 and 64. This deposit is believed to contain a maximum of 1,500 tons of ore having an average grade of 0.25 percent U_3O_8.

Table 1. Intervals of AEC drill holes on the Ears group of claims containing a minimum of 0.05 percent U_3O_8 ✓

Diamond drill hole number	Interval (feet)	Thickness (feet)	Percent U_3O_8	Description
11	165.0-165.3	0.3	2.11	Very coarse-grained conglomeratic sandstone, white, massive, containing carbonaceous material and clay pebbles
11	165.3-165.7	0.4	0.14	Do
15				Ore indicated by gamma-ray log.
17	305.0-307.0	2.0	0.33	Very coarse-grained conglomeratic sandstone, white, massive, containing carbonaceous material and clay pebbles.
49	293.5-294.5	1.0	0.03	Not known
	294.5-295.5	1.0	0.06	
	295.5-296.5	1.0	0.18	
56	Not known			
62	Not known			
64	183.5-184.5	1.0	0.55	Coarse-grained sandstone, gray to white, containing carbonaceous material, pitchblende, and chalcopyrite.
66	221.6-223.0	1.4	0.51	Conglomeratic sandstone, white, containing seams of carbonaceous material and pitchblende.
67	Not known			
72	Not known			

✓ Information from diamond-drill core logs of the U. S. Atomic Energy Commission.

Additional ore deposits may be found by exploring the north branch of the channel on the Ears and Ears No. 1 claims, but the south branch on the New Year No. 1 claim seems adequately explored. AEC drilling completed thus far on the north branch of the channel has delineated the trend of the channel, but has not penetrated ore, possibly because the holes are too near the outer edge of the channel. Secondary uranium and copper minerals are found in the Shinarump beds at the outcrop of the north branch, but scintillometer readings made by the AEC do not indicate the presence of ore-grade material. AEC plans additional drilling on the north branch, but has discontinued exploration on the south branch because of the relatively small size of the deposits it believes will be found.

The largest deposit that could be expected by exploring the south branch is believed to be considerably less than 2,000 tons. Such a deposit, if confined to the channel, would be between drill hole 72 and the narrow point of the channel near drill hole 7, between the narrow point in the channel and drill hole 3, or between drill hole 3 and the outcrop. Little hope is maintained for the discovery of a significant deposit between drill hole 72 and the narrow point of the channel near drill hole 7. Drill hole 72 has penetrated a basal Shinarump sandstone bed containing minor amounts of chalcopyrite believed to be in a weakly mineralized zone bordering the ore deposit at drill hole 11. This sandstone is also much thinner in drill hole 72 than in the deposit, and is apparently being cut out by an intra-Shinarump channel that is filled with siltstone.

The channel apparently widens between drill hole 7 and the outcrop, but was barren of sulfide minerals and significant amounts of uranium where it was tested by drill hole 3. Experience has shown that the chances of finding a significant deposit are small without at least low-grade uraniferous rock or sulfide minerals present nearby, and neither of those were indicated by drill hole 3.

PROPOSED EXPLORATION

The applicants have proposed to drive 870 feet of drift from a point on the Shinarump rim to an intersection with AEC drill hole 11 (fig. 2). It is noted that this drift, 870 feet long as proposed by the applicants, would be approximately 40 feet too short to intersect drill hole 11. They have also proposed to drive eight crosscuts for 50 feet on either side of the center line of the drift at intervals of 100 feet. The applicants do not anticipate discovering an ore body by this adit, but consider that the work will be non-paying (applicants' engineering report, page 2). The applicants have further proposed to expose by bulldozer trenching the outcrop of the north branch of the channel on the Ears No. 1 claim, to build structures for equipment and living quarters, and to provide underground ventilation by churn drill holes having a diameter of 12 inches and spaced at intervals of about 300 feet.

CONCLUSIONS AND RECOMMENDATIONS

Because of the drilling already done by AEC, it is concluded that the proposed exploration is in ground that is adequately tested, or nearly so, and that the chances of finding a uranium deposit large enough to justify the proposed expenditure are small. Furthermore, the proposed drift, if driven merely to open the deposit at hole 11, would be development work rather than exploratory work. It is recommended that the plan as proposed by the applicants be denied. In view of the AEC plans to continue drilling in the north branch of the channel, the examining team did not recognize a feasible modified program of exploration for a DMEA project, and none is recommended.

DMEA 3121

EARS CLAIM GROUP
WHITE CANYON MINING COMPANY, INC.
SAN JUAN COUNTY, UTAH

Engineering Report

By M. H. Salsbury
Mining Engineer
Bureau of Mines

DMEA 3121

EARS CLAIM GROUP
WHITE CANYON MINING COMPANY, INC.
SAN JUAN COUNTY, UTAH

CONTENTS

Engineering Report	Page
Introduction	1
Acknowledgments	1
Location, topography, and physical features	2
Labor and living conditions	3
History, production, and ownership	4
Description of the deposits	5
Mineable ore reserves	6
Present status	6
Exploration and development	6
Mining and milling equipment and other facilities	7
Project proposals with costs	7
Production plan	9
Proposed financing	9
Conclusions	9
Recommendations	10

ILLUSTRATIONS

Figure	Follows Page
1. Location map, White Canyon Mining Company, Inc., Ears Claim group, San Juan County, Utah	2

DMEA 3121

EARS CLAIM GROUP
WHITE CANYON MINING COMPANY, INC.
SAN JUAN COUNTY, UTAH

ENGINEERING REPORT

By M. H. Salsbury

INTRODUCTION

The White Canyon Mining Company, Inc., P. O. Box 801, Grand Junction, Colo., has applied for a Defense Minerals Exploration Administration loan of $56,428.52--Government participation 90 percent, or $51,785.76--for an exploration project for uranium. The proposal includes 1,670 feet of underground development by drifting and crosscutting in an adit tunnel to be started on the outcrop of a potential ore-bearing stream channel, and 200 hours of bulldozing for an access road to the tunnel portal site, and to uncover another channel outcrop.

The property was visited by a Region IV examining team on September 2 and 3, 1953, accompanied by Leo J. Miller and Daryl Spencer of the Atomic Energy Commission, and Raymond Starr, representing the applicant.

ACKNOWLEDGMENTS

Data have been obtained by examination in the field, by consultation with personnel of the Atomic Energy Commission, and from material furnished by the applicant.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Ears Claim group is located in the White Canyon Mining District on the southwest rim of Frey Canyon, a tributary of White Canyon, in San Juan County, Utah. The property is in unsurveyed secs. 10 and 11, T. 37 S., R. 16 E., Salt Lake principal meridian (fig. 1). It is reached from Blanding, Utah, the nearest point on a paved highway, over Utah State Highway 95, a graded road, and connecting access roads to the Frey Canyon camp of the Atomic Energy Commission and the exploration area on the rim. The distance to Blanding is 67 miles, and to the nearest receiving plant for uranium ores at Monticello, Utah, 89 miles.

The region, at an average elevation of 6,000 feet, is the typical arid mesa land of the Colorado-Utah plateau with Triassic sediments outcropping, cut by numerous steep-walled canyons draining northwest to the Colorado River. The climate is one of extremes, hot in summer and often very cold during the winter. Total yearly precipitation is low, but violent storms, often resulting in local flash floods, occur in summer and there are occasional heavy winter snowfalls. Except for brief periods after storms, and during spring thaws, stream beds are practically dry. The vegetation is rather sparse, but ample supplies of fire wood for domestic purposes are easily gathered.

There are a few springs in the area which will supply domestic needs and limited drilling requirements. The water supply is usually supplemented by runoff stored in small retaining ponds.

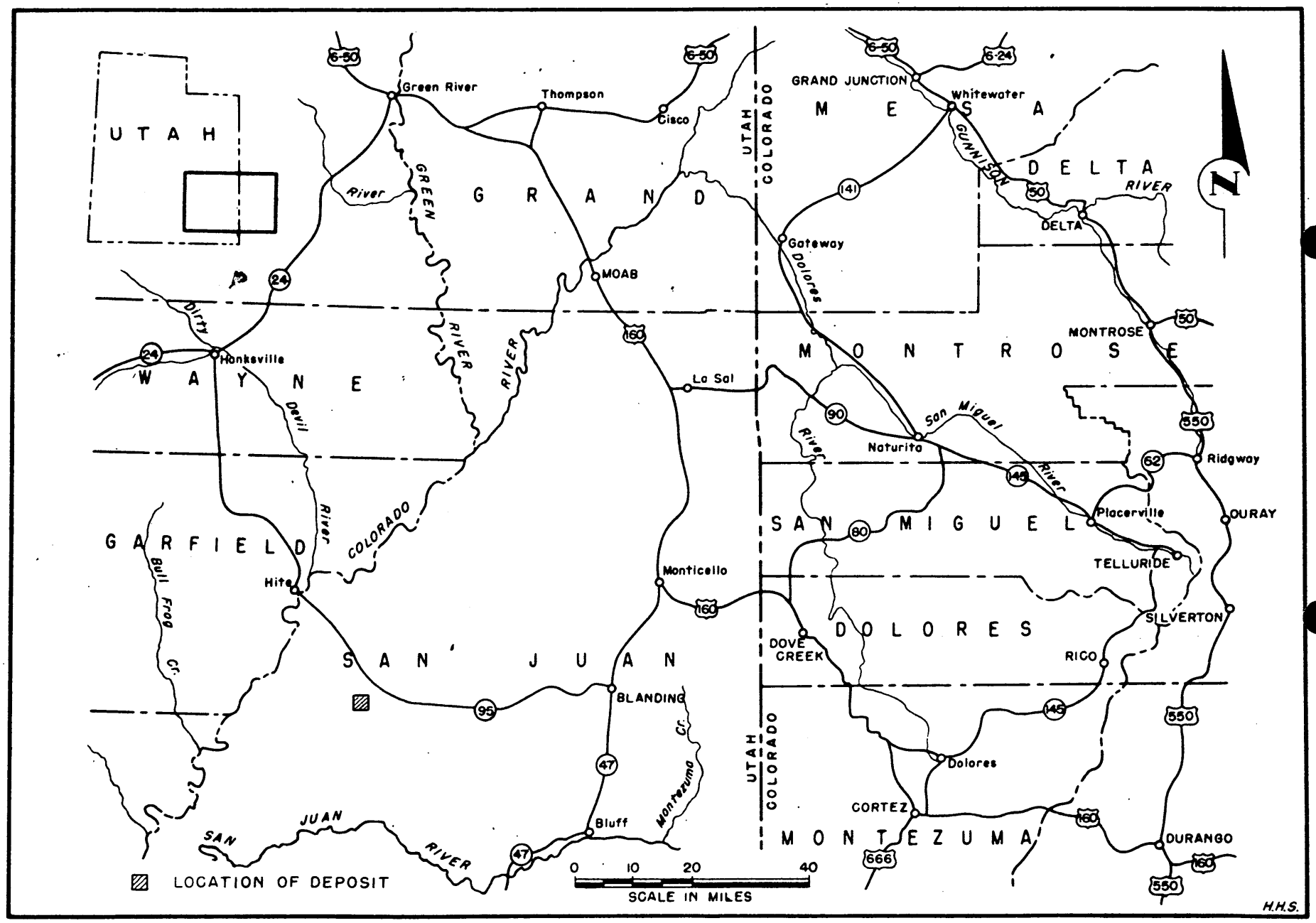

FIGURE 1. - LOCATION MAP, BEARS CLAIM GROUP, WHITE CANYON MINING COMPANY, INC., SAN JUAN COUNTY UTAH (DMEA 3121)

The nearest scheduled transportation service ends at Blanding. Hauling into the area must be done by the operator or by contracting truckers. Transportation costs over the roads, which are nearly impassable at times after heavy storms, are high, although a new road, which bypasses much of the worst section of Highway 95, has recently been completed. There are no published tariffs, but advantageous arrangements for bringing in supplies and equipment can sometimes be made with ore-hauling contractors.

The nearest complete stock of mining supplies is at Grand Junction, Colo., 180 miles by paved highway from Blanding.

Transportation of ore can be contracted with a number of trucking firms operating in the region. The hauling bonus of 6 cents per ton mile paid by the Government must be supplemented by an additional 2 or 3 cents per ton mile paid by the shipper. The total ore hauling cost from Frey Canyon to Monticello is approximately $8.00 per ton.

Power in the area for all requirements must be furnished by the individual operator.

Labor and Living Conditions

All housing and service facilities must be moved in and maintained by the operator. The usual accommodations are trailer houses, simple frame buildings, or crudely constructed cabins. Because of the housing, remote location, and climatic extremes, living conditions are not attractive, particularly during the winter when roads may often be traveled with difficulty.

The labor supply is short. Adverse living conditions make it difficult to obtain or keep good mine workers in the face of competition from other less remote areas.

The wage rate for mine labor is supposedly $1.50 per hour, but this appears tobe only a nominal figure as operators will pay up to $2.00 per hour to get and keep good men. Most operations are carried on by lessees or by contract miners.

HISTORY, PRODUCTION, AND OWNERSHIP

The White Canyon Mining District is in a remote area of southeastern Utah, difficult of access and little known before the search for uranium ores was extended after World War II. Most of it is in the public domain; in Frey Canyon, as well as some other sections, land was not withdrawn from entry and is open to mineral location. The Atomic Energy Commission has carried on extensive core drilling in the White Canyon area, much of it on privately-held claims. Several uranium deposits located by the Atomic Energy Commission drilling are in production, but the Frey Canyon section is just emerging from the exploration stage, and there has been no production to date.

White Canyon Mining Company, Inc., owns seven contiguous located claims, the Ears, Ears No. 1, New Year No. 1, Hillside, Hillside No. 2, and April claims, which are of concern to the proposed project. The locations are recorded in the San Juan County Courthouse, Monticello. A conflict with a prior located claim, the Gizzmo No. 5, owned by D. V. Blake, removes an area equal to a full 600-foot by 1,500-foot claim from the control of the applicant in the heart of the ore zone (fig. 2, with the geologic report). The area of the proposed exploration

project is covered by the property listed in the application. The Gizzmo No. 5 claim does not conflict with this ground.

DESCRIPTION OF THE DEPOSITS

The known uranium deposits on the property are typical deposits of Shinarump conglomerate in stream channels cut in the underlying Moenkopi formation. Two branching channels are known, outcropping on the southwest rim of Frey Canyon several hundred feet above the canyon floor. These two branches join some 1,500 feet from the rim, forming a larger channel which contains the best part of the known ore. The overburden on the applicant's claims ranges from 50 feet at the rim to over 300 feet at the southwest boundary. As roughly outlined by Atomic Energy Commission core drilling, the branching channels are not wide, 50 feet at the most, and possible ore deposits are correspondingly narrow. At the junction of the channels, the ore may be as much as 200 feet wide. The thickness of the ore bed appears to be from 1 to 5 feet, with the mineable deposits on the applicant's property about 3 feet thick.

The uranium apparently occurs as pitchblende, replacing carbonized wood contained in varying amounts in the lower 3 to 5 feet of the Shinarump conglomerate in the channels. It is associated with chalcopyrite and pyrite, which also have replaced carbonized wood fragments in the formation. In some occurrences, the chalcopyrite is in sufficient quantity to consitute a copper ore. No vanadium minerals are found locally. The rim outcrops of the two channels are barren and the presence of ore nearby is not indicated.

MINEABLE ORE RESERVES

There are two ore deposits outlined by Atomic Energy Commission drilling on the property. The larger is a continuation of the ore at the junction of the channels, covered by the Gizzmo No. 5 claim of different ownership. It has roughly indicated dimensions of 400 feet in length, 90 feet wide, and 3 feet thick, containing an estimated maximum, using a tonnage factor of 14, of 8,000 tons of ore with an average grade of 0.25 percent U_3O_8.

The other deposit, in the vicinity of Atomic Energy Commission diamond drill holes numbers 11 and 64, may be 180 feet by 40 feet by 3 feet and contain 1,500 tons of ore averaging 0.25 percent U_3O_8.

The foregoing estimates are rough, being based on exploratory drilling of the Atomic Energy Commission, which is not designed to block out ore.

The results of sampling by the Atomic Energy Commission, including pertinent drill logs, are included in the geologic report.

PRESENT STATUS

Exploration and Development

The property has been the site of part of the exploratory drilling program of the Atomic Energy Commission in this district. Forty holes, 100 to 300 feet deep, have outlined roughly the two ore bodies previously described (fig. 2, with the geologic report). However, a 900-foot section of the south channel, and most of the north channel, have not been completely explored. Seven holes drilled along the comparatively

unexplored section of the south channel have given negative results. They do not rule out the possibility of the occurrence of more ore bodies, but do establish the fact that any ore discoveries are likely to be small. For this reason, the Atomic Energy Commission does not plan any more drilling on the south channel.

The north channel may have ore deposits along its length and more drilling here is planned by the Atomic Energy Commission.

The only other exploration carried on at the property has been stripping to expose the rim outcrop of the south channel, which the applicant completed during the past summer.

A lessee on the Gizzmo No. 5 claim has scheduled an incline shaft to cut the Gizzmo ore body, starting in September 1953.

Mining and Milling Equipment and Other Facilities

There are no buildings or equipment at the site, other than that belonging to the Atomic Energy Commission and its drilling contractor.

No milling facilities are required as any ore produced would be shipped to a treatment plant at Monticello, Utah.

PROJECT PROPOSALS WITH COSTS

The major part of the applicant's proposal calls for the exploration of some 900 feet of the more or less unexplored section of the south channel between Atomic Energy Commission drill hole No. 11 and

the rim, by means of an adit tunnel, driven from a portal on the channel outcrop below the rim. It would be driven an estimated 870 feet with crosscuts at 100-foot intervals to investigate the Shinarump beds for fifty feet on either side of the tunnel. Mine buildings, housing, and a better access road to the tunnel portal site are included. In addition, the applicant proposes to strip the talus masking the north channel outcrop.

The applicant estimates a total cost of $56,428.52 for the project. Deducting the cost of bulldozing, buildings, and other preliminary work, the actual cost of the underground work is about $31.00 per foot, $6.00 per foot more than the highest normal drifting cost in the uranium area, according to criteria of the Atomic Energy Commission. Some of the excess may be justified by the remote location. Rather elaborate haulage equipment, and large drill holes for ventilation, proposed by the applicant, account for the additional cost.

The proposed work would explore the south channel very completely, but the applicant obviously wants the tunnel more for its development features. Completion of the adit tunnel to the ore body in the vicinity of Atomic Energy Commission hole No. 11 would provide an excellent haulageway for mining the ore between that point and the southwest boundary of the property. On page 2 of the engineering report accompanying the application, the statement is made that the first 870 feet of the tunnel are expected to be non-paying, which would indicate that the applicant's engineers do not anticipate finding any new ore as the

result of exploration features of the project. The distance from the rim to Atomic Energy Commission hole No. 11, as scaled on the applicant's map, is 930 feet. This map is based on working maps of the Atomic Energy Commission. The distance to hole No. 11 is thus 60 feet more than the length of the proposed tunnel.

Most features of the project proposals are shown on figure 2, with the geologic report.

Equipment for the project, including that to supply power, was to be rented. The applic ant proposes to use normal local sources for transportation, manpower, and water.

PRODUCTION PLAN

The applicant estimates 11 months would be required to complete the project.

PROPOSED FINANCING

Supervision, and other services which the applicant is prepared to furnish, would make up more than the company's 10 percent of the cost. The applicant company and it's president, R. O. Dulaney, Jr., of Fort Worth Texas, have been active in the uranium field for some time.

CONCLUSIONS

The conclusion reached by the examining team, in which the Atomic Energy Commission representatives concur, is that the cost of the underground work along the south channel, considered as an exploration

project, is not justified by the probable small extent of any ore bodies which might be found. The work is also considered as development rather than exploration. The spacing of seven barren drill holes in the exploration area make the largest possible ore body 200 feet by 50 feet by 3 feet thick. The width of the channel at the outcrop--30 feet--and the subsurface contours at the top of the Moenkopi formation, indicate an even narrower maximum width.

The north channel outcrop has been examined by the Atomic Energy Commission, and scintillometer readings on the talus-covered outcrop were negative. The Atomic Energy Commission plans more drilling along this channel and this work would probably be more valuable than stripping the outcrop.

RECOMMENDATIONS

It is recommended that the loan application be denied.

cb

9/17/53 gle

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

224 New Customhouse
Denver 2, Colorado

September 10, 1953

Mr. H. O. Dulaney, Jr.
President
White Canyon Mining Company
6200 Curzon
Fort Worth, Texas

Dear Mr. Dulaney:

This will acknowledge your letter of September 8th, giving us information in regard to your address and telephone number as discussed in our telephone conversation of September 8.

It will not be necessary for our engineers to meet with you in regard to your application for assistance on Docket DMEA 3121. The Atomic Energy Commission is currently exploring property adjoining yours. Therefore, we will hold your application in abeyance until the results of their exploration program is available to us.

Very truly yours,

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

DMEA Field Team, Region IV

cc: R.O.Dulaney, Jr.
P.O.Box 801
Grand Junction, Colo.

R. P. Fischer
A. H. Koschmann (2)
W. M. Traver
C. O. Mittendorf (2)

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

224 New Customhouse
Denver 2, Colorado

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DMEA Field Team, Region IV

cc: R.O.Dulaney, Jr.
P.O.Box 801
Grand Junction, Colo.

R. P. Fischer
A. H. Koschmann (2)
W. M. Traver
C. O. Mittendorf (2)

FILE COPY
SURNAME:

Docket
Murphy
Martin
Ellis
Hedges
Cudnel

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

AUG 11 1953

Mr. R. O. Dulaney, Jr., President
The White Canyon Mining Company
P. O. Box 801
Grand Junction, Colorado

Re: Docket No. DMEA-3121 (Uranium)
Rare Claim Group
San Juan County, Utah

Dear Mr. Dulaney:

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

Mr. W. H. King
Executive Officer
DMEA Field Team, Region IV
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 (fw)

Administrator

FMMurphy/db
8-7-53
cc to: Adm. Reading File
Docket
Messrs: Ellis
Murphy
DMEA Field Team, Region IV (2)

R.C.G.
8-11-53

FILE COPY
SURNAME:
Docket
Murphy
Martin
Ellis
Selfridge

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

AUG 11 1953

Mr. W. H. King
Executive Officer
DMEA Field Team, Region IV
22[illegible] New Customhouse Building
Denver 2, Colorado

Re: Docket No. [illegible]-3121 (Uranium)
[illegible] to Canyon Mining Company
[illegible] Claim Group
San Juan County, Utah

Dear Mr. King:

The captioned application is referred to your office for a field examination of the proposed project and recommendation based thereon. A copy of this application was forwarded to your office on July 1[illegible], 1953.

Copies of memoranda from [illegible] H. D. Leiser, dated July 21, 1953 and Mr. Arthur P. Butler, Jr., dated July 2[illegible], 1953, containing comments and recommendations pertinent to this exploration proposal, are enclosed.

You will note that there is a conflict on the ground involved in the subject application.

Sincerely yours,

W. S. Martin
ES

ACTING Chairman, Operating Committee

Enclosures

APPROVED:

J. H. Hedges
J. H. Hedges ES
Member, Bureau of Mines

A. R. Kinkel, Jr. ES
Member, Geological Survey

FMMurphy/db
8-7-53
cc to: Adm. Reading File
Operating Committee
Docket
Messrs: H.D.Leiser, Rm. 3641
A.P.Butler, Jr., Rm. 3206, GSA
Ellis
Murphy

R.C.S.
8-11-53

STANDARD FORM NO. 64

8/5/53 gla

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member
Uranium Commodity Committee

DATE: July 24, 1953

FROM : Arthur P. Butler, Jr., USGS member
Uranium Commodity Committee

Bruce for A P Butler Jr

SUBJECT: Application DMEA Docket 3121 (uranium) The White Canyon Mining Company, P. O. Box 801, Grand Junction, Colorado: Ears, Ears No. 1, New Year No. 1, Hillside, Hillside No. 1, Hillside No. 2, and April claims, White Canyon, San Juan County, Utah.

The application for exploration assistance on the property described has been reviewed and discussed with H. D. Keiser, Bureau of Mines member, Uranium Commodity Committee and with J. O. Hosted, Atomic Energy Commission.

Proposal

The applicant proposes to explore uranium-bearing rock in the Shinarump formation by driving an adit approximately 870 feet long and cross-cutting 50 feet on each side of the adit at 100-foot intervals; eight cross-cuts in all are planned.

Comment

The area covered by the application has been drilled by the AEC and, according to the application, two channels were found by this drilling. The proposed adit is designed to reach one of these channels. There may be somw question as to whether the work planned is actually exploration or development work, or a combination of both.

Recommendation

I recommend that this application be referred to the Field Team for review and evaluation. I suggest that the Field Team consult with the geologic and engineering staff of the Atomic Energy Commissiton, Grand Junction, to obtain the benefit of such data on the property and such suggestions as that office may have. They might also consider the possibility that additional drilling the the area would be preferable at this time to the underground work proposed. As the data available at present are somewhat scattered, it may be that additional drilling would produce sufficient information to enable the applicant to reach the deposit from the outcrop with less adit-driving than it now contemplated.

Copy to E. Wm. Ellis (2)

IN REPLY REFER TO:

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

Wm. Ellis, DMEA Member
Uranium Commodity Committee

July 24, 1953

Arthur P. Butler, Jr., USGS member
Uranium Commodity Committee
Application DMEA Docket 3121 (uranium) The White Canyon Mining Company, P. O. Box 801, Grand Junction, Colorado: Ears, Ears No. 1, New Year No. 1, Hillside, Hillside No. 1, Hillside No. 2, and April claims, White Canyon, San Juan County, Utah.

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The area covered by the application has been drilled by the AEC and, according to the application, two channels were found by this drilling. The proposed adit is designed to reach one of these channels. There may be some question as to whether the work planned is actually exploration or development work, or a combination of both.

Recommendation

I recommend that this application be referred to the Field Team for review and evaluation. I suggest that the Field Team consult with the geologis and engineering staff of the Atomic Energy Commissiton, Grand Junction, to obtain the benefit of such data on the property and such suggestions as that office may have. They might also consider the possibility that additional drilling the the area would be preferable at this time to the underground work proposed. As the data available at present are somewhat scattered, it may be that additional drilling would produce sufficient information to enable the applicant to reach the deposit from the outcrop with less adit-driving than it now contemplated.

Copy to E. Wm. Ellis (2)

7/23/53 gla

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 21 1953

July 21, 1953

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4640

From: H. D. Keiser, Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket No. 3121, White Canyon Mining Co.,
P. O. Box 801, Grand Junction, Colorado.

I have reviewed the application included in the subject docket and discussed it with Andrew Brown, Acting Geological Survey Member, and Joseph O. Hosted, representative of the Atomic Energy Commission.

It is recommended that the application be referred to the Field Team for investigation and report, that the Field Team be requested to discuss the application with the exploration staff of the Atomic Energy Commission at Grand Junction, Colorado, and that the Field Team in its investigation be requested to consider (1) whether the proposed exploration by driving a tunnel and crosscutting is development rather than exploration, and (2) whether additional drilling is warranted.

H. D. Keiser

H. D. Keiser

Attachment

Rec'd-7/16 p.m.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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. DMEA-3121
Metal or Mineral
Date Received 7/16/53
Estimated Cost
Participation (Government %)

See attached Supplemental Sheet for detailed answers.

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: The White Canyon Mining Company, P. O. Box 801, Grand Junction, Colorado

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

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

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

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract See Paragraph 1 of Engineering Report and Exhibit "B", attached thereto.

(*b*) State any mine name by which the property is known. April Mine

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Applicant is owner of the land by virtue of valid mining claims on the Public Domain.

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

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

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

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

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

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

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

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

5. *The exploration project.*—(*a*) [illegible]te the mineral or minerals for which you wi[illegible]o explore Uranium.

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

(*c*) The work will start within 30 days and be completed within 11 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated July 8, 1953

THE WHITE CANYON MINING COMPANY
(Applicant)

By R. O. Dulaney, Jr.
R. O. Dulaney, Jr.,
President

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

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

SUPPLEMENTAL SHEET
APPLICATION FOR AID IN EXPLORATION PROJECT
APRIL EXPLORATION

1. Name of Applicant.

a. The White Canyon Mining Company
P. O. Box 801
Grand Junction, Colorado

b. Applicant is a corporation, organized in Colorado and authorized to do business in Utah.

c. Officers of the corporation are as follows:

Pres., R.O. Dulaney, Jr., 6200 Curzon, Fort Worth, Texas
1st V.Pres., Charles H. Dulaney, P. O. Box 1487, Laredo, Texas
2nd V.Pres., R.O. Dulaney, Sr., 1001 Elizabeth Blvd., Fort Worth, Texas
Sec'y-Treas., James K Groves, 1340 Ouray Ave., Grand Junction, Colorado

3. Property Rights.

a. See Paragraph 1 of Engineering Report and Exhibit "B", attached thereto.

b. Property to be known as the April Mine.

c. Applicant is owner of the land by virtue of valid mining claims on the Public Domain.

e. There are no liens or encumbrances on the land.

f. See Paragraph 1 of the Engineering Report.

4. Physical Description.

a. See Engineering Report, Paragraph 3 for a description of the Atomic Energy Commission Drill Project. See Paragraph 2 of this same report for data on accessibility. There are no present workings or production facilities on the property.

b. There has been no production to date and nothing is known as yet concerning possible ore reserves.
c. See Engineering Report, Paragraph 3.
d. Paragraph 2, Engineering Report.
e. Paragraph 4, Engineering Report.

5. The exploration project.

a. The mineral which applicant is seeking is Uranium.
b. See Paragraph 4 and Exhibits "A" and "E", Engineering Report.
c. The work will start within 30 days and be completed within 11 months from the date of an exploration project contract.
d. Applicant and associates are actively engaged in developing and mining Uranium.

SUPPLEMENTAL SHEET NO. 2
APPLICATION FOR AID IN EXPLORATION PROJECT
APRIL EXPLORATION
(WHITE CANYON MINING COMPANY)

5. The exploration project. (Cont'd)

bearing ores on the Colorado Plateau and also on the Navaho Indian Reservation in North-eastern Arizona. Associates in this venture have had years of business experience in the oil industry; supervising personnel connected with the exploration and mining operations are technical men with years of experience in the mining profession.

During the past years production from the mines has materially increased ore receipts at the government plant at Monticello, Utah, at the Durango plant of Vanadium Corporation of America, and at the Uravan plant of the U.S.Vanadium Corporation.

6. Estimate of Costs.

See Paragraphs 5 and 6 of the Engineering Report for cost breakdown and summary.

7. a. Applicant is prepared to furnish his share of the cost of the proposed project.
b. Applicant will deposit 10% of the total cost of the project, or an amount of $5,642.85, to the credit of the project in the First National Bank of Grand Junction, Colorado, upon approval of the project contracts.

WESTERN ENGINEERS

Davis C. Holder

P.O. Box 571

Richard J. Mandeville

Grand Junction, Colorado

July 19, 1953

The Defense Minerals Exploration Administration
United States Department of the Interior
Washington, 25, D.C.

Gentlemen :

Subsequent developments to the preparation of the enclosed report have brought to light a conflict on the ground involved in the application for aid for the White Canyon Mining Company. The conflict is not a serious one now will it interfere in any way with the proposed exploration program or later development work. The red lines on the claim map, Exhibit "A", delineate the ground which is actually held by another party. With the exception of this one change, the report stands correct as originally prepared.

Thanking you, I am

Yours very truly,

Davis C. Holder

Davis C. Holder
for
WESTERN ENGINEERS

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

Mr. R. O. Dulaney, Jr., President
The White Canyon Mining Company
Post Office Box 801
Grand Junction, Colorado

July 16, 1953

Subject: DMEA-3121
Re: Exploration Assistance
April Mine

My Dear Mr. Dulaney;

The receipt of your application dated July 8, 1953, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3121 and referred to the Rare and Miscellaneous Metals Division.

Kindly refer to DMEA-3121 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

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

WHITE CANYON MINING CO.
P. O. Box 801, Grand Junction
~~DOVE CREEK~~, COLORADO

July 8, 1953

The Defense Minerals Exploration Admn.
Department of the Interior
Washington 25, D. C.

Dear Sirs:

Enclosed herewith for your consideration are the original and three copies of Application for Aid in an Exploration Project, pursuant to DMEA Order 1, under the Defense Production Act of 1950, as amended.

Also enclosed are four (4) copies of the Engineer's Report which has been prepared by Western Engineers of Grand Junction, Colorado.

Thanking you, I am,

Very truly yours,

WHITE CANYON MINING COMPANY

By R O Dulaney Jr.
R. O. Dulaney, Jr.,
President

ROD:mr
Encls.

P. O. Box 801, Grand Junction

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 10 1953

July 8, 1953

The Defense Minerals Exploration Admn.
Department of the Interior
Washington 25, D. C.

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Very truly yours,

WHITE CANYON MINING COMPANY

By_____
R. O. Dulaney, Jr.,
President

ROD:mr
Encls.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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. DMEA 3121
Metal or Mineral
Date Received 7/16/53
Estimated Cost
Participation (Government %)

See attached Supplemental Sheet for detailed answers.

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: The White Canyon Mining Company, P. O. Box 801, Grand Junction, Colorado

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

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

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

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

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

(*b*) State any mine name by which the property is known. April Mine

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Applicant is owner of the land by virtue of valid mining claims on the Public Domain.

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

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

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

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

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

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

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

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

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

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

(*c*) The work will start within 30 days and be completed within 11 months from the date of an exploration project contract.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated July 8, 1953

THE WHITE CANYON MINING COMPANY
(Applicant)

By R. O. Dulaney, Jr.
R. O. Dulaney, Jr.,
President

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

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

SUPPLEMENTAL SHEET
APPLICATION FOR AID IN EXPLORATION PROJECT
APRIL EXPLORATION

1. Name of Applicant.

   a. The White Canyon Mining Company
      P. O. Box 801
      Grand Junction, Colorado

   b. Applicant is a corporation, organized in Colorado and authorized to do business in Utah.

   c. Officers of the corporation are as follows:

      Pres., R.O. Dulaney, Jr., 6200 Curzon, Fort Worth, Texas
      1st V.Pres., Charles H. Dulaney, P. O. Box 1487, Laredo, Texas
      2nd V.Pres., R.O. Dulaney, Sr., 1001 Elizabeth Blvd., Fort Worth, Texas
      Sec'y-Treas., James K Groves, 1340 Ouray Ave., Grand Junction, Colorado

3. Property Rights.

   a. See Paragraph 1 of Engineering Report and Exhibit "B", attached thereto.

   b. Property to be known as the April Mine.

   c. Applicant is owner of the land by virtue of valid mining claims on the Public Domain.

   e. There are no liens or encumbrances on the land.

   f. See Paragraph 1 of the Engineering Report.

4. Physical Description.

   a. See Engineering Report, Paragraph 3 for a description of the Atomic Energy Commission Drill Project. See Paragraph 2 of this same report for data on accessibility. There are no present workings or production facilities on the property.

   b. There has been no production to date and nothing is known as yet concerning possible ore reserves.
   c. See Engineering Report, Paragraph 3.
   d. Paragraph 2, Engineering Report.
   e. Paragraph 4, Engineering Report.

5. The exploration project.

   a. The mineral which applicant is seeking is Uranium.
   b. See Paragraph 4 and Exhibits "A" and "E", Engineering Report.
   c. The work will start within 30 days and be completed within 11 months from the date of an exploration project contract.
   d. Applicant and associates are actively engaged in developing and mining Uranium.

SUPPLEMENTAL SHEET NO. 2
APPLICATION FOR AID IN EXPLORATION PROJECT
APRIL EXPLORATION
(WHITE CANYON MINING COMPANY)

5. The exploration project. (Cont'd)

bearing ores on the Colorado Plateau and also on the Navaho Indian Reservation in North-eastern Arizona. Associates in this venture have had years of business experience in the oil industry; supervising personnel connected with the exploration and mining operations are technical men with years of experience in the mining profession.

During the past years production from the mines has materially increased ore receipts at the government plant at Monticello, Utah, at the Durango plant of Vanadium Corporation of America, and at the Uravan plant of the U.S.Vanadium Corporation.

6. Estimate of Costs.

See Paragraphs 5 and 6 of the Engineering Report for cost breakdown and summary.

7. a. Applicant is prepared to furnish his share of the cost of the proposed project.
   b. Applicant will deposit 10% of the total cost of the project, or an amount of $5,642.85, to the credit of the project in the First National Bank of Grand Junction, Colorado, upon approval of the project contracts.

WESTERN ENGINEERS

Davis C. Holder

P.O. Box 571

Grand Junction, Colorado

Richard J. Mandeville

July 13, 1953

JUL 1 3 1953

The Defense Minerals Exploration Administration
United States Department of the Interior
Washington, 25, D.C.

Gentlemen:

Subsequent developments to the preperation of the enclosed report have brought to light a conflict on the ground involved in the application for aid for the White Canyon Mining Company. The conflict is not a serious one nor will it interfere in any way with the proposed exploration program or later development work. The red lines on the claim map, Exhibit "A", delineate the ground which is actually held by another party. With the exception of this one change, the report stands correct as originally prepared.

Thanking you, I am

Yours very truly,

Davis C. Holder

Davis C. Holder
for
WESTERN ENGINEERS

ENGINEERING REPORT

EXPLORATION TUNNEL, APRIL MINE

WHITE CANYON MINING CO.

1. Location:

The property concerned in this report consists of seven unpatented mining claims located in unsurveyed Sections 10 and 11 of Township 37 South, Range 16 East of the Salt Lake Meridian, in the White Canyon Mining District (unorganized), San Juan County, Utah. The property is approximately 60 miles from Blanding, Utah. The seven claims as listed herewith represent a contiguous group, each claim being adjacent to the next. The claims have been surveyed and the recording book and Page Numbers given are those of the Amended Location, where such has been made. From my studies of the records and of the ground, no conflicts or counter-claims are apparent.

Name of Claim	Book No.	Page No.
Ears	27	5
Ears No. 1	27	6
New Year No. 1	27	7
Hillside	27	1
Hillside No. 1	27	2
Hillside No. 2	27	3
April	27	4

For further detail, see Claim Map, Exhibit "A" and Legal Descriptions, Exhibit "B".

2. Accessibility:

Utah State Highway No. 95, from Blanding, Utah passes within four miles of the proposed project. A graded road, constructed by the Atomic Energy Commission, will allow passenger car travel another two miles toward the mine, and Jeep or truck travel is possible from this point to the adit site. Haul for any Uranium discovered will be approximately 85 miles, to the American Smelting and Refining Company processing plant at Monticello, Utah. It is possible that the Vanadium Corporation of America pilot plant at Hite, Utah

may be enlarged, to allow ore buying at that point; this would shorten the haul to about twenty miles. For further detail, see Vicinity Map, Exhibit "C".

3. Geological Data:

There are two "Channels" apparent within the claim group; these channels traverse the Shinarump formation and show definite prospects of being ore-bearing. Drill holes put down by the Atomic Energy Commission have roughly delineated the channels; the main tunnel, as proposed, will traverse the larger of the two. Core Sampling of D.H. 11 showed 0.4 ft. of 0.14% Uranium and 0.3 ft. of 2.11% Uranium. D.H. 15 gave a Gamma Ray Log of 3300 counts per second, indicative of good ore, although the core was not recovered. D.H. 17 yielded a chemical assay of 1.0 ft. of 0.06% Uranium and 2.0 ft. of 0.33% Uranium. Many other holes in the area showed mineralization, bearing out the belief that an ore body is present. However, the location and extent of the mineable ore has not been disclosed by the drill program. The channel is visible in cross-section, at the rim where the adit will be placed, and it is felt that an exploratory shaft with cross-cuts, as shown on the accompanying detail plan, Exhibit "E", will definitely locate a quantity of mineable ore. Actual Ore outcrop at the rim exists but is of an extremely low grade, assaying from 0.10 to 0.12% Uranium with some copper present. It is anticipated that the full length of the tunnel as outlined in Paragraph 4 of this report will be non-paying, but that the continuation of such tunnel beyond Station 8+70 will yield Uranium Ore in sufficient quantities to justify the operation. The proposed cross-cuts will assist in the location of the channel, serving also as probes for secondary ore bodies. Elevations of the various drill holes at the ground surface, and in cases where ore was present, at the contact between the ore-bearing Shinarump and the Moenkopi formations are given on the Claim Map, Exhibit "A".

For General Information on regional geology, see Geologic Map, Exhibit "D".

4. Operational Plan:

The main heading will be advanced at the rate of 3.5 ft. per day, using two miners and one mucker. 249 working days will be required for the full 870 ft. of tunnel; based on a 48 hour week, completion will be 10.4 months after work is commenced. A second crew, identical to that in the main tunnel will begin operations on the No. 1 cross-cut approximately 8 weeks after the commencement of work in the main drift; due to the smaller size of these headings, advance will be 4.0 ft. per day, thereby completing all 8 cross-cuts in 188 working days, or 7.9 calendar months.

Both crews will be under the direction of a Mine Superintendent who will be managing White Canyon Mining Company properties in the area and who will be required to spend 65% of his time on supervision of this particular project. Engineering and Surveys will be provided as needed by Western Engineers, Consultants, of Grand Junction, Colorado.

It is proposed to use electrically powered carts for removing muck; two such carts, along with the 3 K.V.A. Generator required for power, will be rented and put into operation as soon as space permits. A 1500 gallon water tank will be rented and installed on the rim directly above the adit. Water will be hauled from Fry Spring, approximately 3 miles from the site. Ample and continuous flow is available at the spring for both mining and domestic use.

Ventilation will be provided by 12" diameter Drill Holes at intervals of about 300 ft.; circulation will be forced by means of blowers. These Air Vents will be drilled by contract as needed, and will be steel cased. As the operation progresses, water and air lines may be brought into the mine through these vents rather than from the more distant adit.

It will be necessary to improve some of the existing roads and construct some new ones before heavy materials can be trucked into the site. It will also be necessary to strip some of the slide debris and overburden from the rim adjacent to the mine. The applicant wishes to expose the rim in the vicinity of the

secondary channel previously mentioned. This channel outcrops on the Ears Claim. For these miscellaneous operations, 200 hours of Tractor Operation have been provided in the estimate.

5. Estimate of Cost:

Labor:	Main Tunnel, 2 miners @ $1.75 per hr. 1 mucker @ 1.60 " " Av. rate, based on one overtime day per week, $44.20 per day, 249 days,	$11,005.80
	Cross-cuts, same type crew, $44.20 per day, 188 days,	8,309.60
	Superintendent @ $600 per month, 65% pay for 10.4 months,	4,056.00
	Sub-total	$23,371.40
Equipment Rental:		
	2 Power Carts @ $130 per mo. each, $260.00 x 10.4,	$ 2,704.00
	1-3 KVA Generator @ $60 per mo., 60.00 x 10.4,	624.00
	1 Compressor 4 Jack Hammers 2 Blowers 1- 1500 gal. Water Tank) 300.00 x 10.4	3,120.00
	1 IMCO Air Mucking Machine, 125.00 x 10.4	1,300.00
	Sub-total	7,748.00
Materials:		
	20 Tons of 20# Rail @ $186.20 per ton,	$ 3,724.00
	1000 ft. of 2" Black Pipe @ $0.44 per ft.	440.00
	Drill Steel and Bits,	450.00
	Small Tools and Supplies,	100.00
	Powder, Caps and Fuse,	2,500.00
	Carbide,	120.00
	Gas and Oil	2,100.00
	Ties, Bolts and Fish Plates,	750.00
	313 ft. of 12" Steel Casing @ $2.35 per ft.	735.55
	Sub-total	$10,919.55
Contract Work:		
	307 ft. of 12" Air Shaft @ $8.00 per ft.,	$ 2,456.00
	200 Hrs. Dozer Operation, (D-7 or equiv.), @ $12.00 per hr.	2,400.00
	Sub-total	$ 4,856.00

Structures:

Tool Shack, Living Quarters and Misc. Structures, - - - - -$ 1,500.00

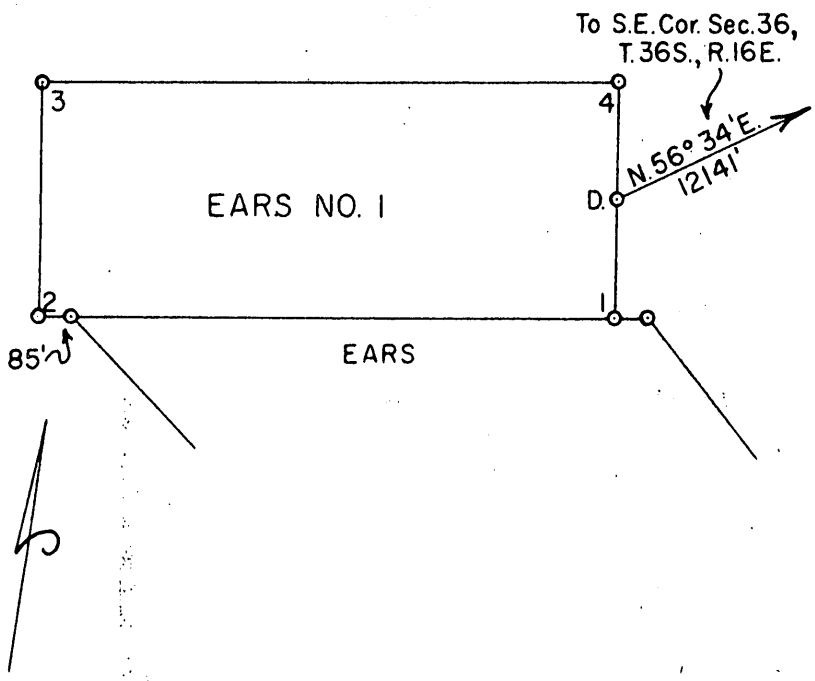
6. Summary of Cost:

Labor, - - - - - - - - - - - - - - - - -	$23,371.40
Equipment Rental, - - - - - - - - - -	7,748.00
Materials, - - - - - - - - - - - - - - -	10,919.55
Contract Work, - - - - - - - - - - - -	4,856.00
Structures,- - - - - - - - - - - - - - -	1,500.00
Sub-total	$48,394.95
10% Contingencies and Gen. Expense -	4,839.50
6% Engineering and inspection, - -	3,194.07
Total Cost of Project,- - - -	$56,428.52

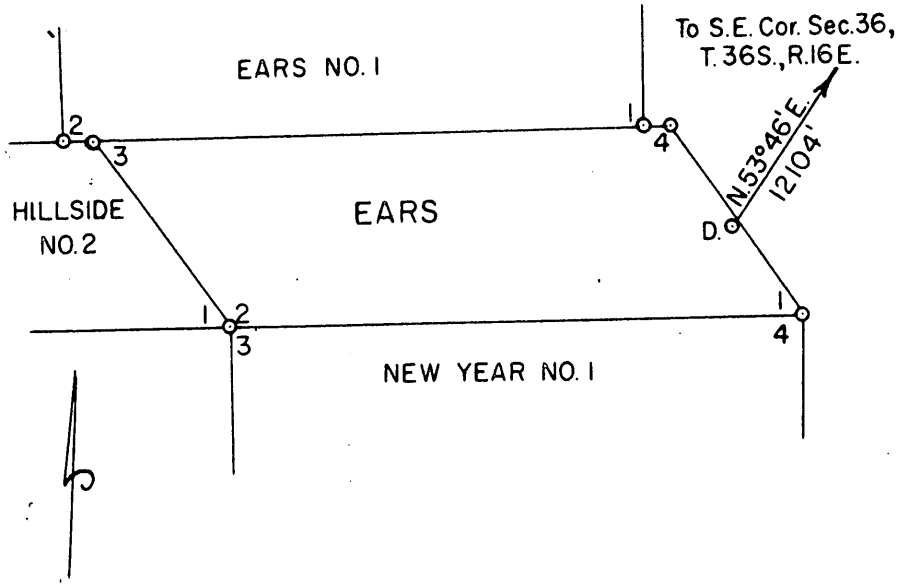
7. This report is based on field studies and surveys conducted by personnel of Western Engineers, P. O. Box 571, Grand Junction, Colorado. The estimate of costs and other engineering data are substantiated by the appended maps and drawings. If further information is required, address inquiry to White Canyon Mining Company, P. O. Box 801, Grand Junction, Colorado, or to Western Engineers at the address given above.

Signed - - Davis C. Holder
for
WESTERN ENGINEERS

EARS NO. 1 CLAIM



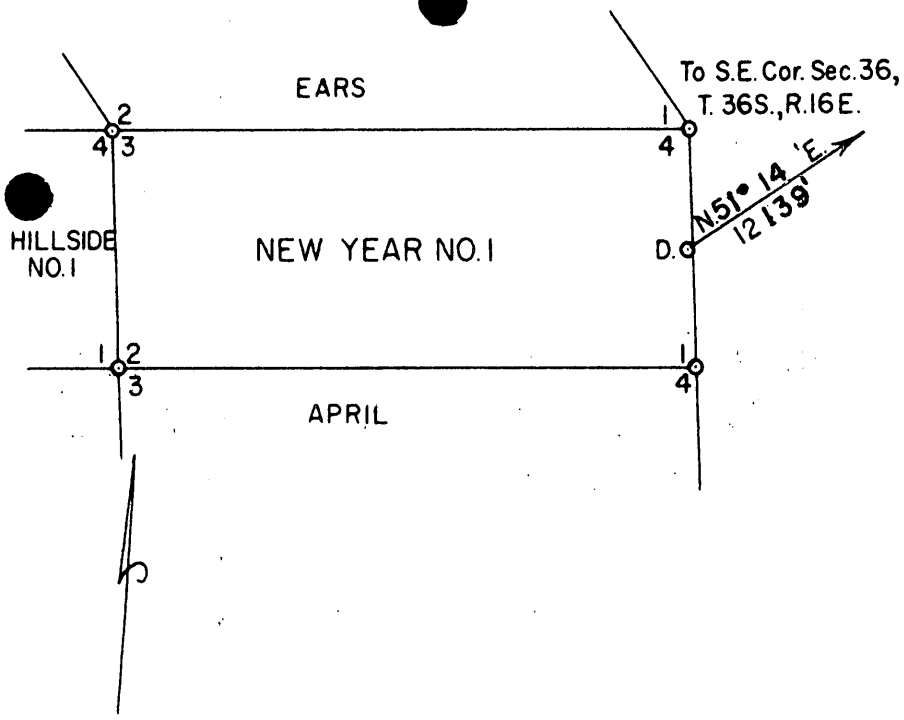
Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E.Cor. of Sec.36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.56°34'E. a distance of 12,141 ft.; thence S.08°04'E. a dist. of 300 ft. to Cor.1; thence S.81°56'W. a dist. of 1500 ft. to Cor.2; thence N.08°04'W. a dist. of 600 ft. to Cor.3; thence N.81°56'E. a dist. of 1500 ft. to Cor.4; thence S.08°04'E. a dist. of 300 ft. to the place of beginning. Ears No. 1 Claim is adjacent to and contiguous with the Ears Claim on the southerly side. Located approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 37 South, Range 16 East of the county of San Juan, State of Utah.



Ears Claim

Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E. Cor. of Sec.36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.53°46'E. a distance of 12,104 ft.; thence N.27°10'E. a dist. of 20.5 ft. to the East end-center; thence S.57°10'E. a dist. of 300 ft. to Cor.1, which point is common with Cor.4 of the New Year No.1 Claim; thence S.81°56'W. a dist. of 1500 ft. to Cor.2, which point is common with Cor.3 of said New Year No.1; thence N.57°10'W. a dist. of 600 ft. to Cor.3; thence N.81°56'E. a dist. of 1500 ft. to Cor.4; thence S.57°10'E. a dist. of 300 ft. to the East end-center. The Ears Claim is adjacent to and contiguous with the Ears No. 1 Claim on the northerly, the New Year No.1 on the southerly and the Hillside No.2 on the westerly side. Located approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 37 South, Range 16 East, San Juan County, Utah.

EXHIBIT B



NEW YEAR NO.1 CLAIM

Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E. Cor. of Sec. 36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.51° 14'E. a distance of 12,139 ft.; thence N.58°28'E. a dist. of 12.4 ft. to the East end-center; thence S.09°14'E. a dist. of 300 ft. to Cor.1, which point is common with Cor. 4 of the April Claim; thence S.81°56'W. a dist. of 1500 ft. to Cor. 2, which point is common with Cor3 of said April Claim; thence N.09°14'W. a dist. of 600 ft. to Cor. 3, which point is common with Cor.2 of the Ears Claim; thence N.81°56'E. a dist. of 1500 ft. to Cor.4, which point is common with Cor.1 of siad Ears Claim; thence S.09°14'E. a dist. of 300 ft. to the east end-center. The New Year No. 1 Claim is adjacent to and contiguous with the Ears Claim on the northerly, the Hillside No.1 on the westerly, and the April Claim on the southerly side. Located approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 38 South, Range 16 East, San juan County, Utah

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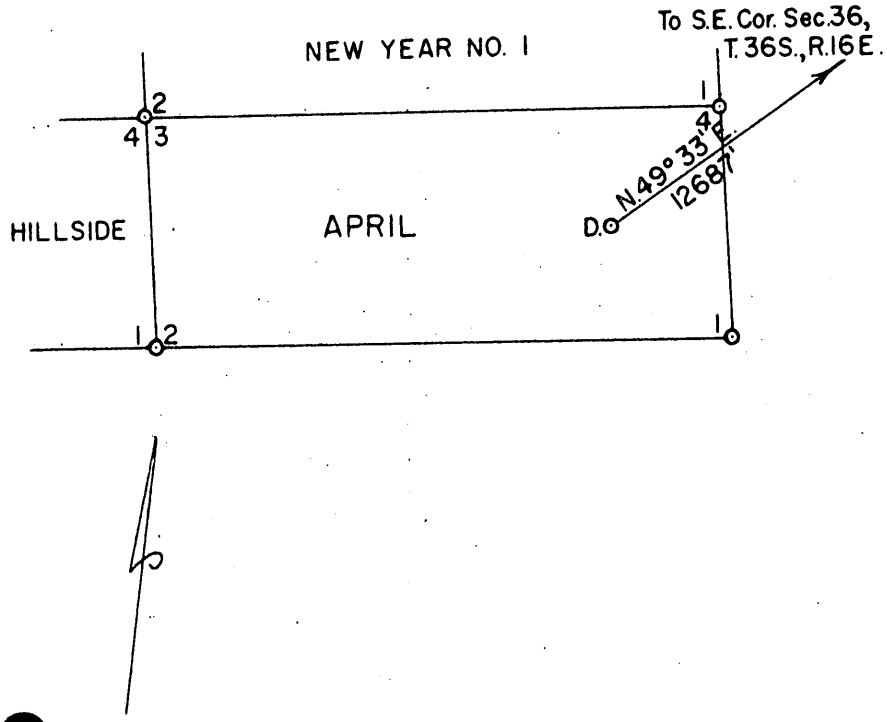
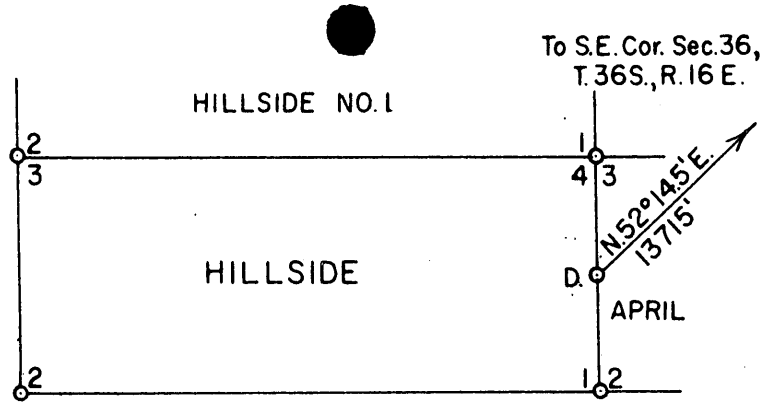


APRIL CLAIM

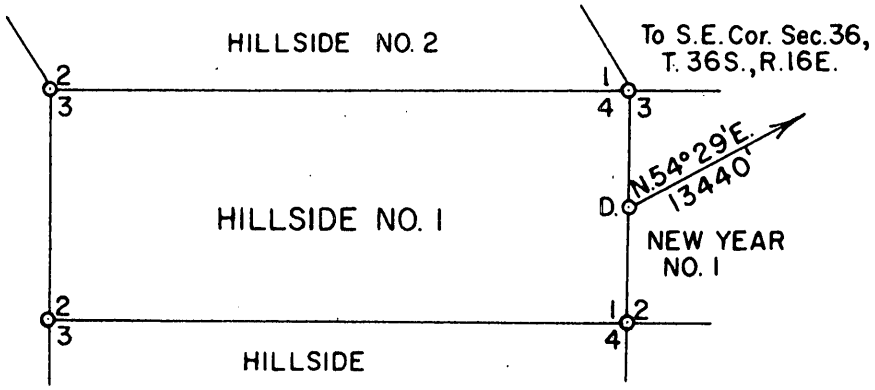
Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E. Cor. of Sec.36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.49°33'E. a distance of 12687 ft.; thence N.81°56'E. a dist. of 300 ft. to the East end-center; thence S.09°14'E. a dist. of 300 ft. to Cor.1; thence S.81° 56'W. a dist. of 1500 ft. to Cor.2; thence N.09°14'W. a dist. of 600 ft. to Cor.3, which point is common with Cor.2 of the New Year No.1 Claim; thence N.81°56'E. a dist. of 1500 ft. to Cor.4, which point is common with Cor.1 of said New Year No.1 Claim; thence S.09°14'E. a dist. of 300 ft to the East end-center. The April Claim is adjacent to and contiguous with the New Year No. 1 on the northerly, the Hillside on the westerly side. Located approximately 3 miles S.W. of Fry Camp, 60 mi. S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 37 South, Range 16 East, San Juan County, Utah.

EXHIBIT B



HILLSIDE CLAIM

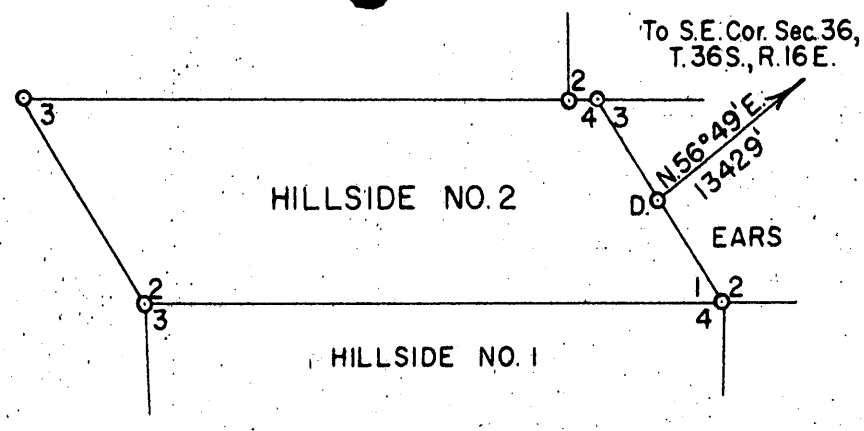
Beginning at the point of discovery, said point being marked with a mound of rocks, from whence the S.E. Cor. of Sec.36, T.36 S., R.16 E of the Salt Lake Meridian bears N.52°14½'E. a distance of 13,715 ft.; thence S.09°14'E. a dist. of 300 ft. to Cor.1, which point is common with Cor.2 of April Claim; thence S.81° 56'W. a dist. of 1500 ft. to Cor.2; thence N.09°14'W. a dist. of 600 ft. to Cor.3, which point is common with Cor.2 of Hillside No.1; thence N.81°56'E. 1500 ft. to Cor.4, which point is common with Cor. 1 of said Hillside No.1; thence S.09°14'E. a dist. of 300 ft. to the place of beginning. The Hillside Claim is adjacent to and contiguous with the April Claim on the easterly and the Hillside No.1 on the northerly side. Located approximately 3 mi S.W. of Fry Camp, 60 Mi. S.W. of Blanding, in unsurveyed Section 10, Township 37 South, Range 16 East, San Juan County, Utah.



HILLSIDE NO. 1 CLAIM

Beginning at the point of discovery, said point being marked with a mound of rocks, from whence the S.E. Cor. of Sec. 36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.54°29'E. a dist. of 13,440'; thence S.09°14'E. 300 ft. to Cor.1, which point is common with Cor.4 of Hillsde; thence S.81°56'W. a dist. of 1500 ft. to Cor.2, which point is common with Cor.3 of said Hillside; thence N.09°14'W. 600 ft to Cor.3, which point is common with Cor. 2 of Hillside No.2; thence N.81°56'E. 1500 ft. to Cor.4, which point is common with Cor.1 of said Hillside No.2; thence S.09°14'E. 300 ft. to the place of beginning. The Hillside No.1 Claim is adjacent to and contiguous with the Hillside No.2 on the northerly, the New Year No.1 on the easterly, and the Hillside Claim on the southerly side. Located approximately 3 mi S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sec.10, Township 37 South, Range 16 East, San Juan County, Utah.

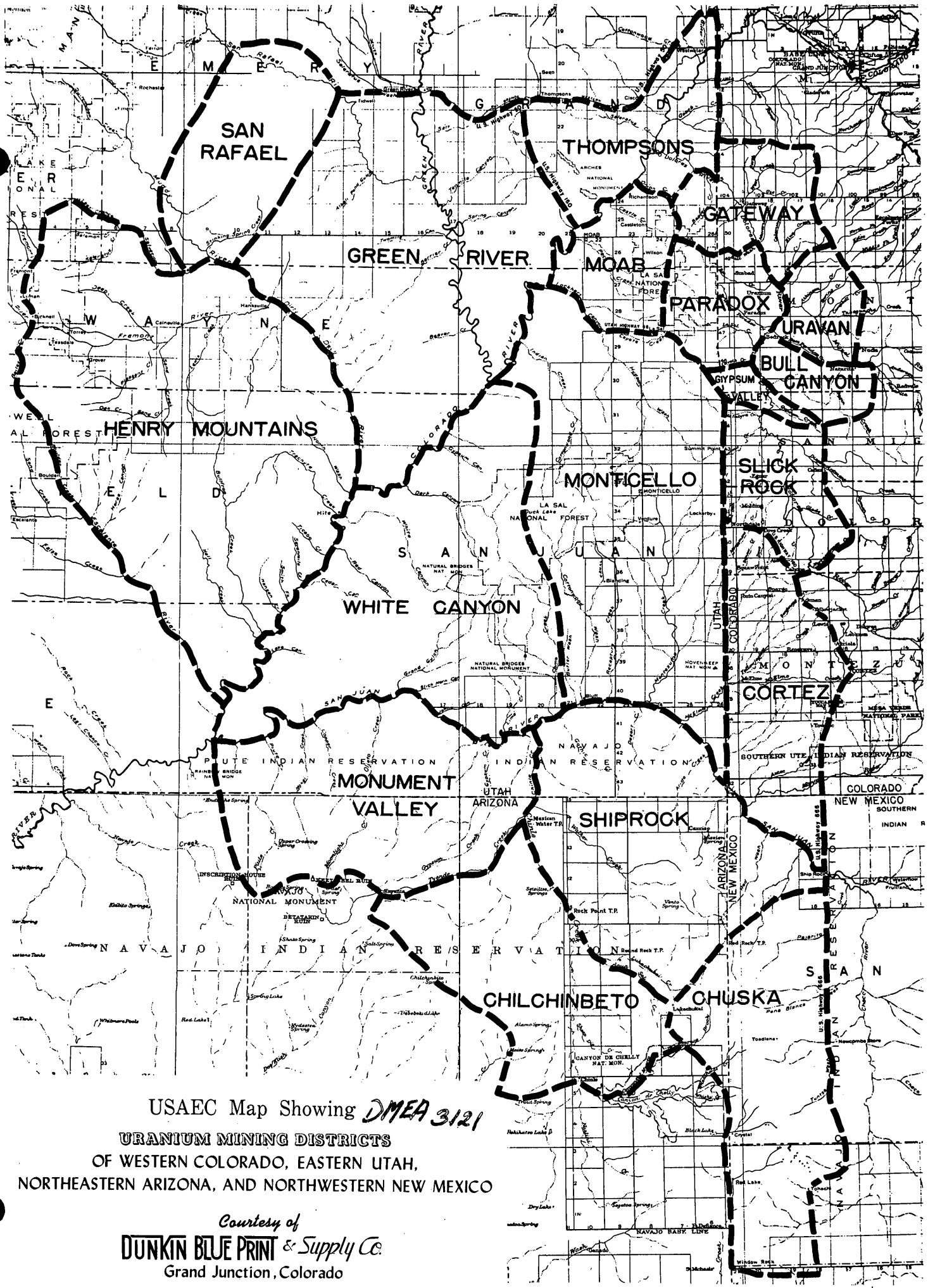
Exhibit B



HILLSIDE NO. 2 CLAIM

Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E. Cor. of Sec. 36 S., R. 16 E. of the Salt Lake Meridian bears N.56°49'E. a dist. of 13,429 ft.; thence S.57°10'E. 300 ft. to Cor. 1, which point is common with Cor. 4 of Hillside No. 1 Claim; thence S.81°56'W. a dist. of 1500 ft. to Cor. 2, which point is common with Cor. 3 of said Hillside No. 1; thence N.57° 10'W. 600 ft. to Cor. 3; thence N.81°56'E. 1500 ft. to Cor. 4; thence S.57°10'E. 300 ft. to the place of beginning. The Hillside No. 2 Claim is adjacent to and contiguous with the Ears Claim on the easterly, and the Hillside No. 1 Claim on the southerly side. Located in unsurveyed Sec. 10, Township 37 South, Range 16 East, approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in San Juan County, Utah.

EXHIBIT B



USAEC Map Showing DMEA 3121

URANIUM MINING DISTRICTS

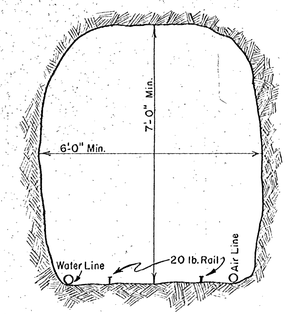
OF WESTERN COLORADO, EASTERN UTAH,
NORTHEASTERN ARIZONA, AND NORTHWESTERN NEW MEXICO

Courtesy of

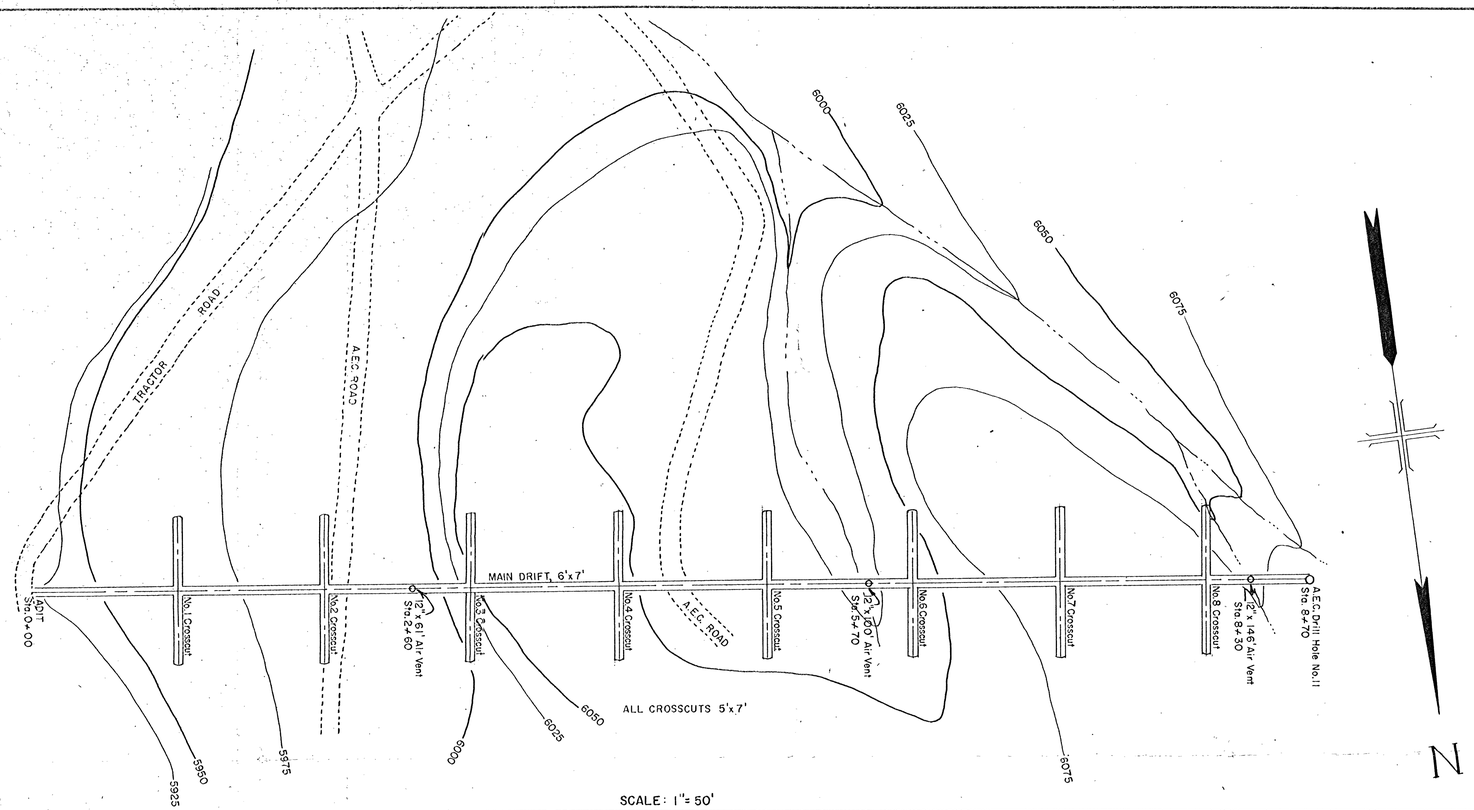
DUNKIN BLUE PRINT & *Supply Co.*

Grand Junction, Colorado

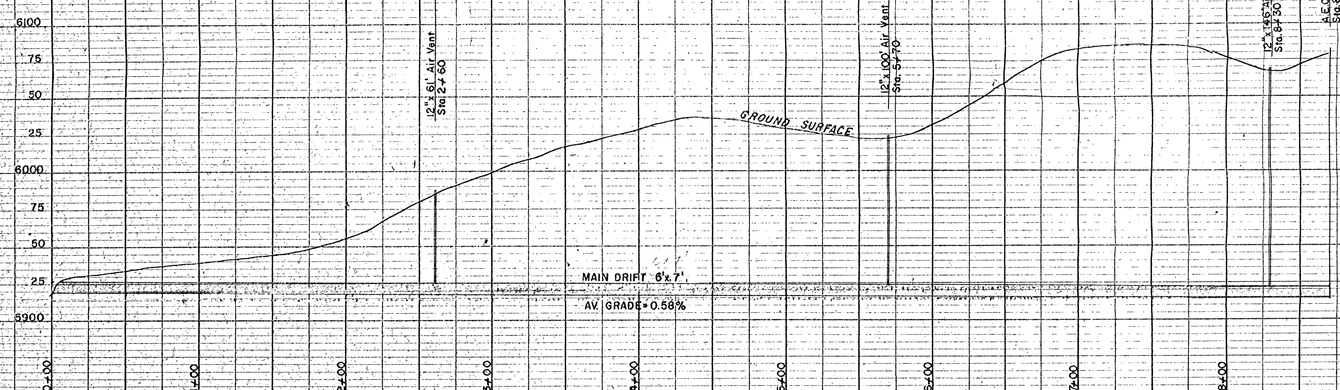
Exhibit C



UNSUPPORTED SECTION
MAIN TUNNEL



SCALE: 1" = 50'

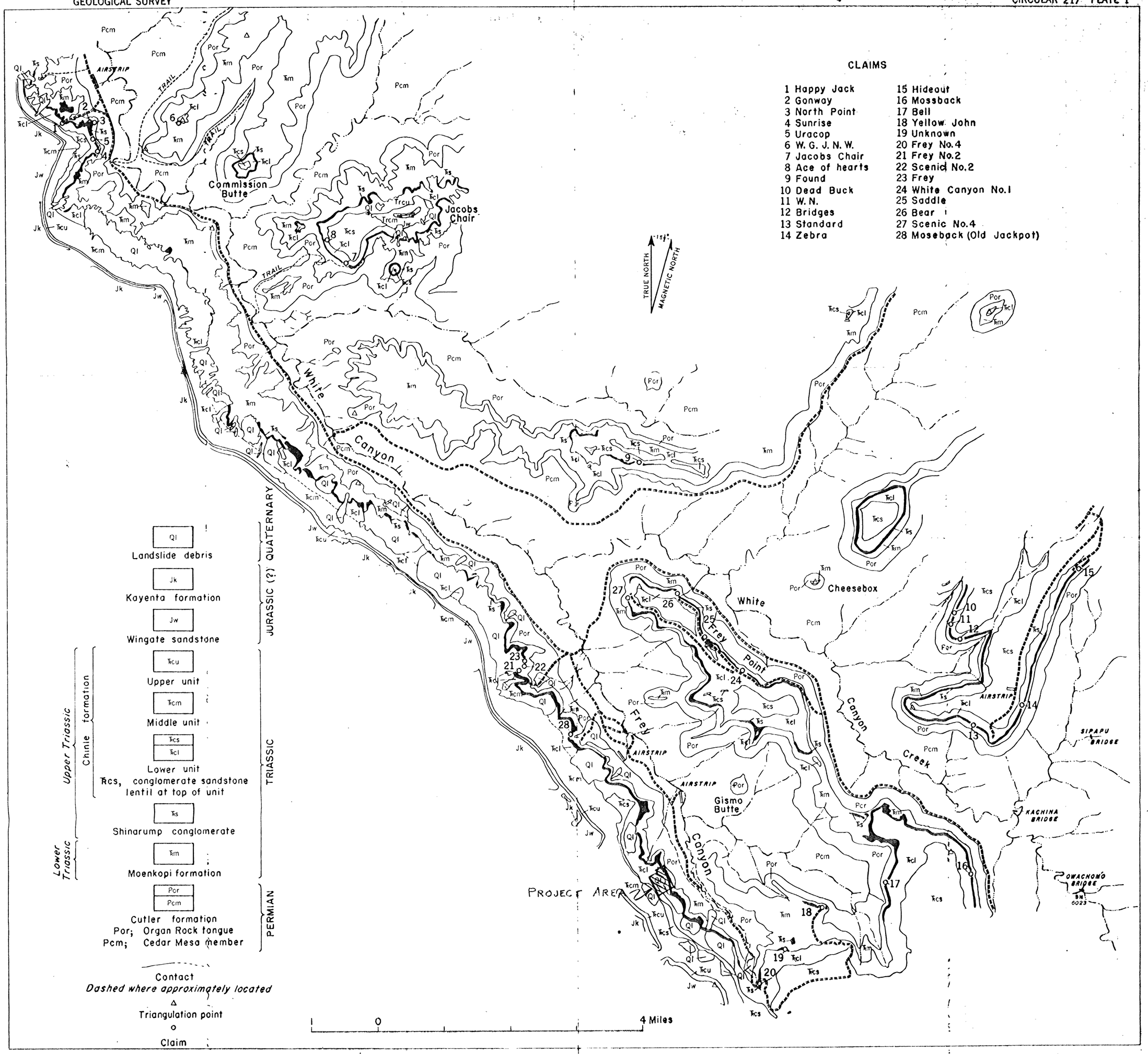


MAP OF PROPOSED EXPLORATION TUNNEL
THE APRIL MINE
WHITE CANYON MINING CO.
DHEA 3121
PREPARED BY WESTERN ENGINEERS

No. 3-1 | IN. N. * NOTED | STRUCTURE NOTATIONS CHECK

PLATE 1 - PLAN - PROFILE O.P.R. & R.E.
CHARLES BRUNING COMPANY, INC.

EXHIBIT E



GEOLOGIC MAP SHOWING PART OF WHITE CANYON DISTRICT, SAN JUAN COUNTY, UTAH

DMEA 3121

EXHIBIT "D"

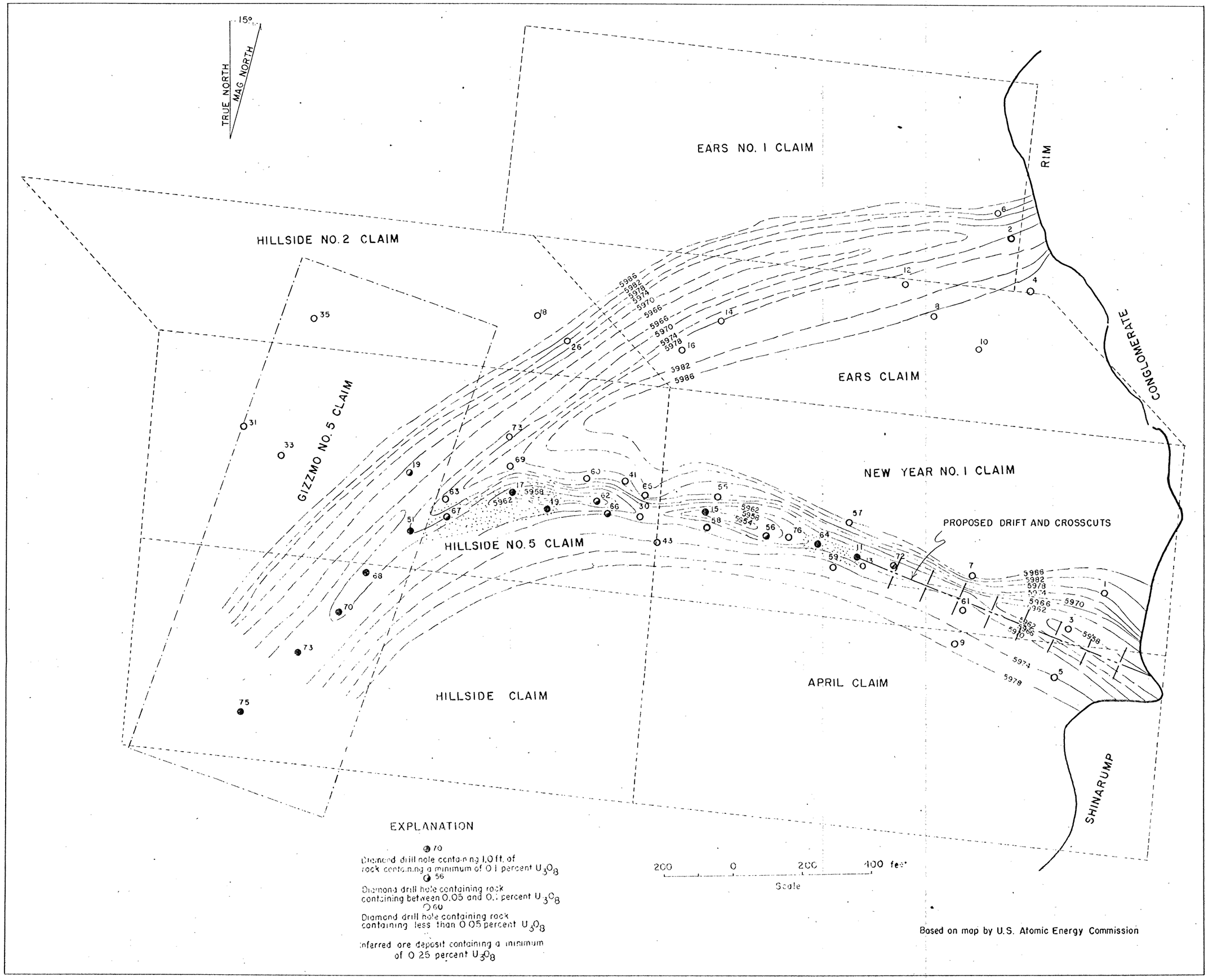
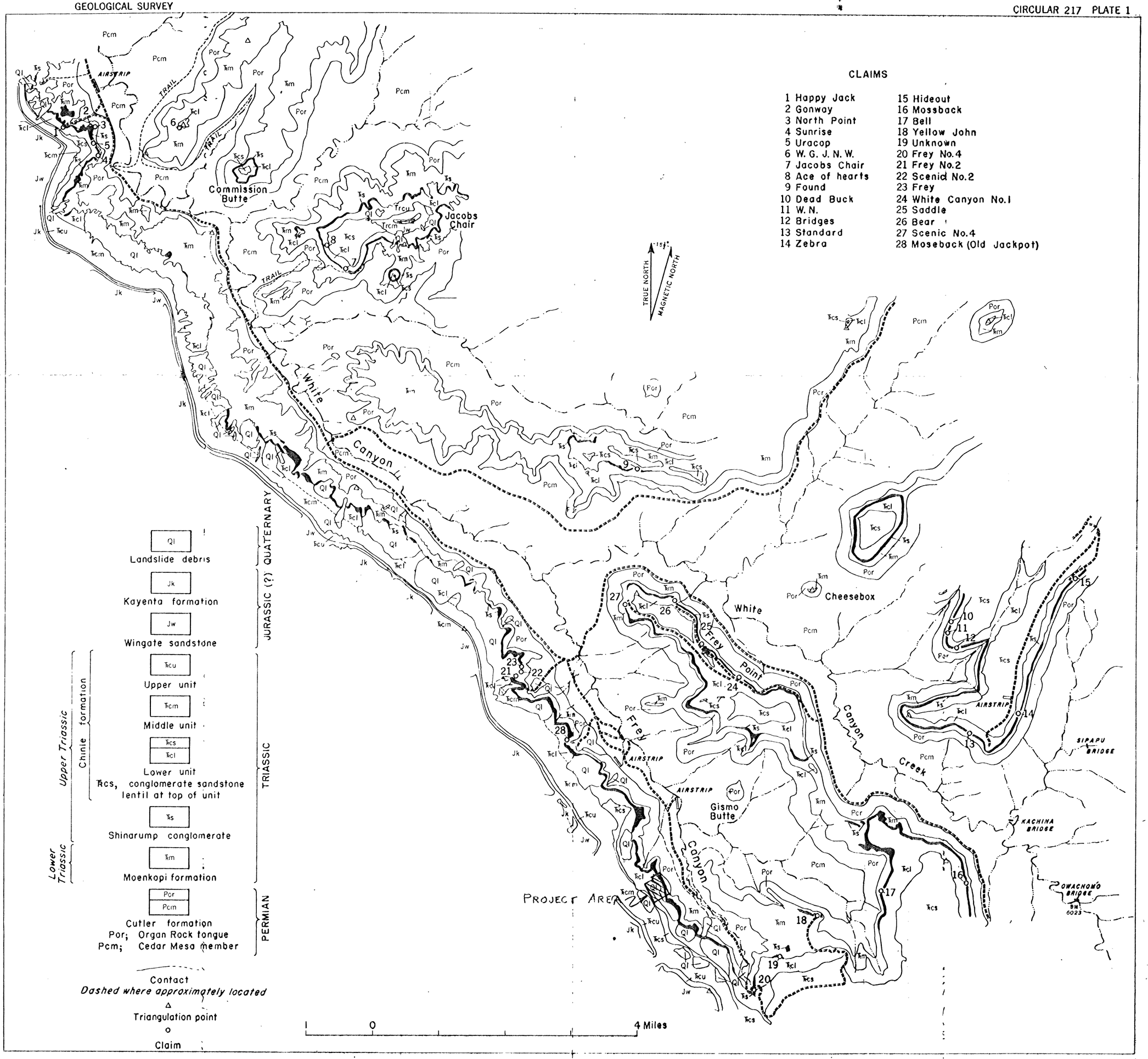


FIGURE 2. STRUCTURE CONTOUR MAP OF THE BASE OF THE SHINARUMP CONGLOMERATE AT THE EARS, EARS NO. 1, APRIL, NEW YEAR NO. 1, HILLSIDE NO. 1, HILLSIDE NO. 2, AND HILLSIDE NO. 3 CLAIMS, SAN JUAN COUNTY, UTAH



GEOLOGIC MAP SHOWING PART OF WHITE CANYON DISTRICT, SAN JUAN COUNTY, UTAH

DMEA-3121

EXHIBIT "D"

NOTE: Ore rim & Drill Hole Locations were taken from A.E.C. Maps.

N

EARS NO. 1

ORE RIM

N.81° 56' E.
1500'

17000 S.

300'

S.08° 04' E.

D.O.

DH-6

N.81° 56' E.
1415'

85'

DH-4

DH-8

DH-10

300'

S.57° 10' E.

N.27° 10' E.
20.5'

18000 S.

HILLSIDE NO. 2

DH-18

DH-14.

EARS

DH-35

DH-26

DH-16

N.81° 56' E.
1500'

DH-37

DH-31

DH-33

HILLSIDE NO. 1

DH-17

DH-30

DH-15

A.E.C. Triang. Sta.
"Ears"

NEW YEAR NO. 1

N.58° 28' E.
12.4'

S.09° 14' E.

DH-11

DH-13

PROPOSED TUNNEL

DH-7

DH-1

DH-3

870'
N.83° 19' W.

DH-9

DH-5

GIZZMO No 5
D.V. BLAKE

12000 W.

19000 S.

HILLSIDE

11000 W.

APRIL

10000 W.

9000 W.

1500'
S.81° 56' W.

20000 S.

0 1 2 3 4 5
SCALE: 1" = 200'

DMEA - 3/21

WESTERN ENGINEERS
WHITE CANYON MINING COMPANY
MAP OF
EARS CLAIM GROUP
SAN JUAN COUNTY, UTAH

SURVEYED C.J.B. & D.C.H.
DRAWN D.C.H.
CHECKED ✓

GRAND JCT., COLO.	3-1-12	JUNE 3, 1953

EXHIBIT A

NOTE: Ore rim & Drill Hole Locations were taken from A.E.C. Maps.

N

EARS NO. 1

ORE RIM

N.81° 56' E.
1500'

17000 S.

300'

S. 08° 04' E.

DH-6

N.81° 56' E.
1415'

85'

DH-4

DH-8

DH-10

300'

S.57° 10' E.

N.27° 10' E.
20.5'

18000 S.

HILLSIDE NO. 2

DH-18

DH-14

EARS

DH-35

DH-26

DH-16

N.81° 56' E.
1500'

DH-37

DH-31

DH-33

HILLSIDE NO. 1

DH-17

1.0' - 0.06 opt
2.0' - 0.33 "

DH-30

DH-15

indicated good ore
Gamma Log 3500 c/s.

A.E.C. Triang. Sta.
"Ears"

NEW YEAR NO. 1

0.4' - 14% opt
0.3' - 2.11 % "

DH-11

DH-13

DH-7

DH-1

PROPOSED TUNNEL

DH-3

N.58° 28' E
12.4'

S.09° 14' E.

GIZZMO No. 5
D.V. BLAKE

N.81° 56' E.
1500'

12000 W.

19000 S.

DH-9

DH-5

870'
N.83° 19' W.

ORE RIM

HILLSIDE

11000 W.

APRIL

10000 W.

N.81° 56' E.
300'

1500'
S.81° 56' W.

9000 W.

20000 S.

DMEA 3121

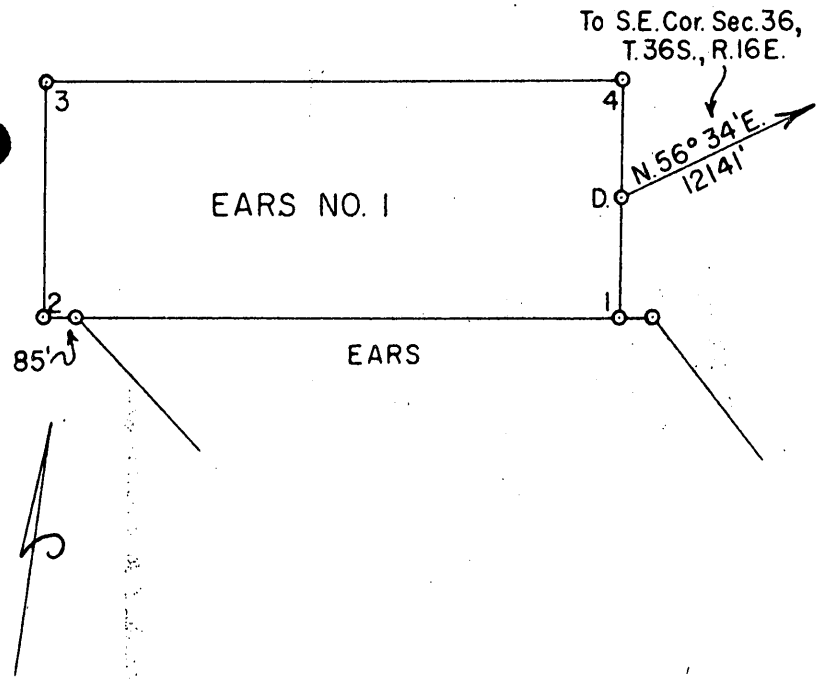
0 1 2 3 4 5

SCALE: 1" = 200'

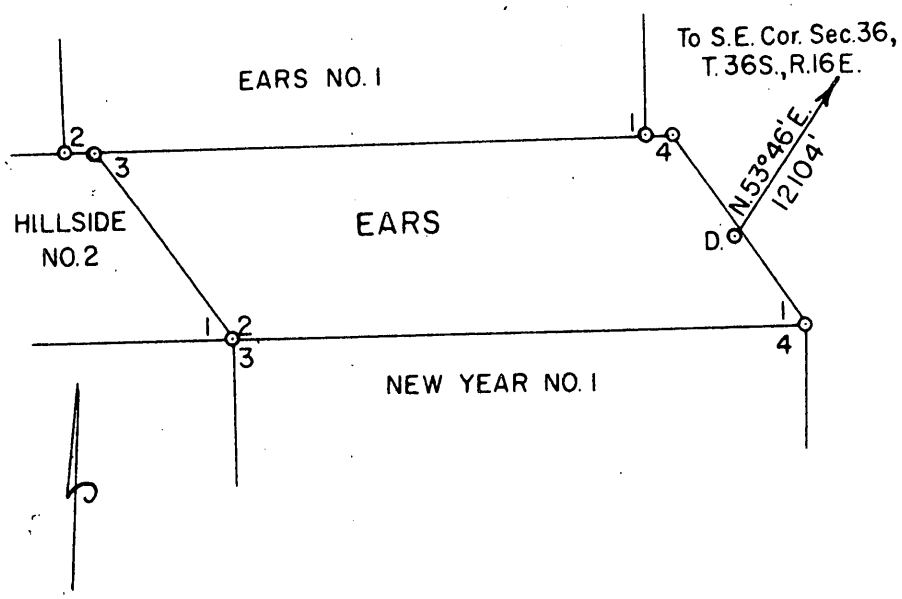
WESTERN ENGINEERS WHITE CANYON MINING COMPANY MAP OF EARS CLAIM GROUP SAN JUAN COUNTY, UTAH		
SURVEYED C.J.B. & D.C.H.		
DRAWN D.C.H.		
CHECKED ✓		
GRAND JCT., COLO.	3-1-12	JUNE 3, 1953

EXHIBIT A

EARS NO. 1 CLAIM



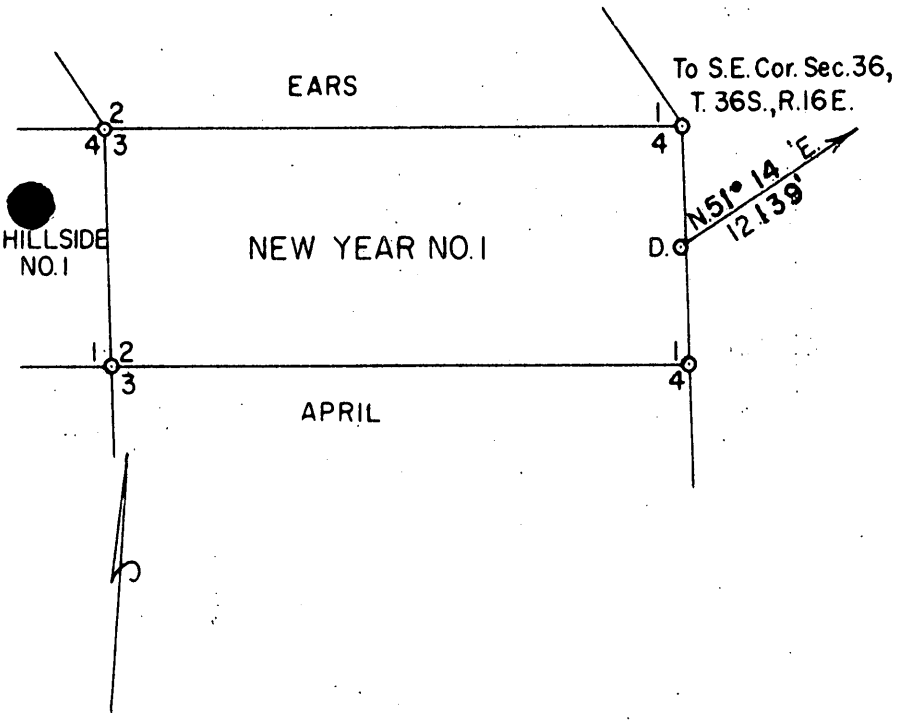
Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E.Cor. of Sec.36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.56°34'E. a distance of 12,141 ft.; thence S.08°04'E. a dist. of 300 ft. to Cor.1; thence S.81°56'W. a dist. of 1500 ft. to Cor.2; thence N.08°04'W. a dist. of 600 ft. to Cor.3; thence N.81°56'E. a dist. of 1500 ft. to Cor.4; thence S.08°04'E. a dist. of 300 ft. to the place of beginning. Ears No. 1 Claim is adjacent to and contiguous with the Ears Claim on the southerly side. Located approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 37 South, Range 16 East of the county of San Juan, State of Utah.



Ears Claim

Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E. Cor. of Sec.36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.53°46'E. a distance of 12,104 ft.; thence N.27°10'E. a dist. of 20.5 ft. to the East end-center; thence S.57°10'E. a dist. of 300 ft. to Cor.1, which point is common with Cor.4 of the New Year No.1 Claim; thence S.81°56'W. a dist. of 1500 ft. to Cor.2, which point is common with Cor.3 of said New Year No.1; thence N.57°10'W. a dist. of 600 ft. to Cor.3; thence N.81°56'E. a dist. of 1500 ft. to Cor.4; thence S.57°10'E. a dist. of 300 ft. to the East end-center. The Ears Claim is adjacent to and contiguous with the Ears No. 1 Claim on the northerly, the New Year No.1 on the southerly and the Hillside No.2 on the westerly side. Located approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 37 South, Range 16 East, San Juan County, Utah.

EXHIBIT B



NEW YEAR NO.1 CLAIM

Beginning at the point of discovery, said point being marked with a mound of rocks fromwhence the S.E. Cor. of Sec. 36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.51° 14'E. a distance of 12,139 ft.; thence N.58°28'E. a dist. of 12.4 ft. to the East end-center; thence S.09°14'E. a dist. of 300 ft. to Cor.1, which point is common with Cor. 4 of the April Claim; thence S.81°56'W. a dist. of 1500 ft. to Cor. 2, which point is common with Cor3 of said April Claim; thence N.09°14'W. a dist. of 600 ft. to Cor. 3, which point is common with Cor.2 of the Ears Claim; thence N.81°56'E. a dist. of 1500 ft. to Cor.4, which point is common with Cor.1 of siad Ears Claim; thence S.09°14'E. a dist. of 300 ft. to the east end-center. The New Year No. 1 Claim is adjacent to and contiguous with the Ears Claim on the northerly, the Hillside No.1 on the westerly, and the April Claim on the southerly side. Located approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 3Ø South, Range 16 East, San juan County, Utah

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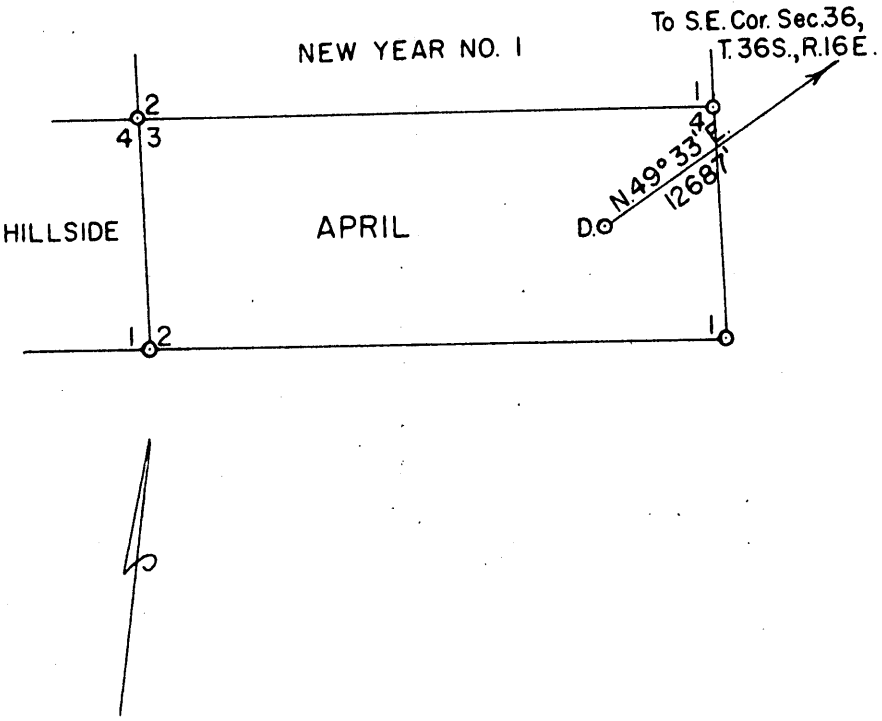
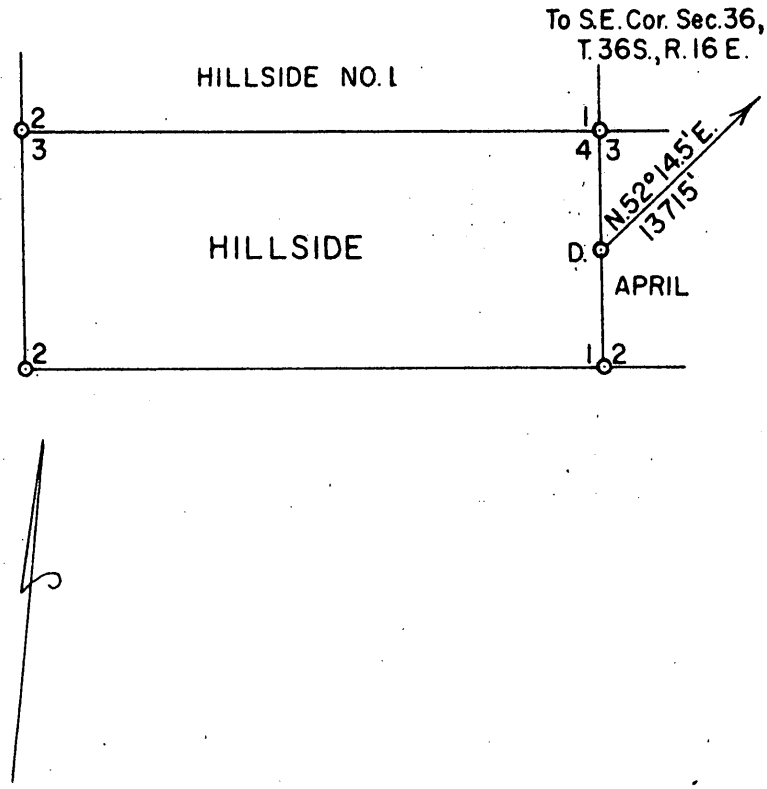


APRIL CLAIM

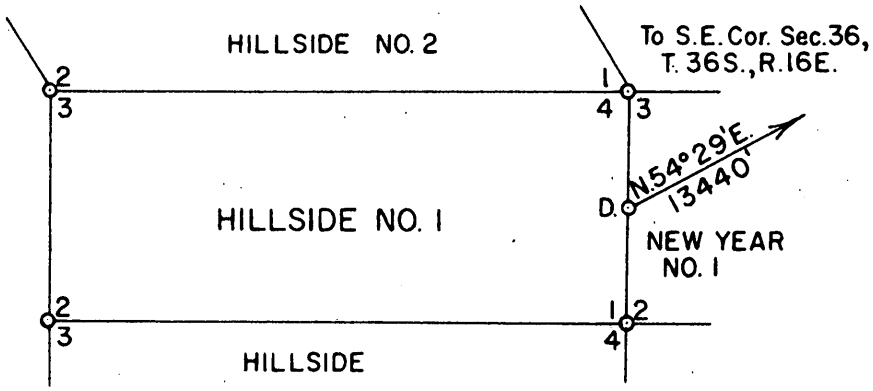
Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E. Cor. of Sec.36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.49°33'E. a distance of 12687 ft.; thence N.81°56'E. a dist. of 300 ft. to the East end-center; thence S.09°14'E. a dist. of 300 ft. to Cor.1; thence S.81° 56'W. a dist. of 1500 ft. to Cor.2; thence N.09°14'W. a dist. of 600 ft. to Cor.3, which point is common with Cor.2 of the New Year No.1 Claim; thence N.81°56'E. a dist. of 1500 ft. to Cor.4, which point is common with Cor.1 of said New Year No.1 Claim; thence S.09°14'E. a dist. of 300 ft to the East end-center. The April Claim is adjacent to and contiguous with the New Year No. 1 on the northerly, the Hillside on the westerly side. Located approximately 3 miles S.W. of Fry Camp, 60 mi. S.W. of Blanding, in unsurveyed Sections 10 and 11, Township 37 South, Range 16 East, San Juan County, Utah.

EXHIBIT B



HILLSIDE CLAIM

Beginning at the point of discovery, said point being marked with a mound of rocks, from whence the S.E. Cor. of Sec.36, T.36 S., R.16 E of the Salt Lake Meridian bears N.52°14½'E. a distance of 13,715 ft.; thence S.09°14'E. a dist. of 300 ft. to Cor.1, which point is common with Cor.2 of April Claim; thence S.81° 56'W. a dist. of 1500 ft. to Cor.2; thence N.09°14'W. a dist. of 600 ft. to Cor.3, which point is common with Cor.2 of Hillside No.1; thence N.81°56'E. 1500 ft. to Cor.4, which point is common with Cor. 1 of said Hillside No.1; thence S.09°14'E. a dist. of 300 ft. to the place of beginning. The Hillside Claim is adjacent to and contiguous with the April Claim on the easterly and the Hillside No.1 on the northerly side. Located approximately 3 mi S.W. of Fry Camp, 60 Mi. S.W. of Blanding, in unsurveyed Section 10, Township 37 South, Range 16 East, San Juan County, Utah.

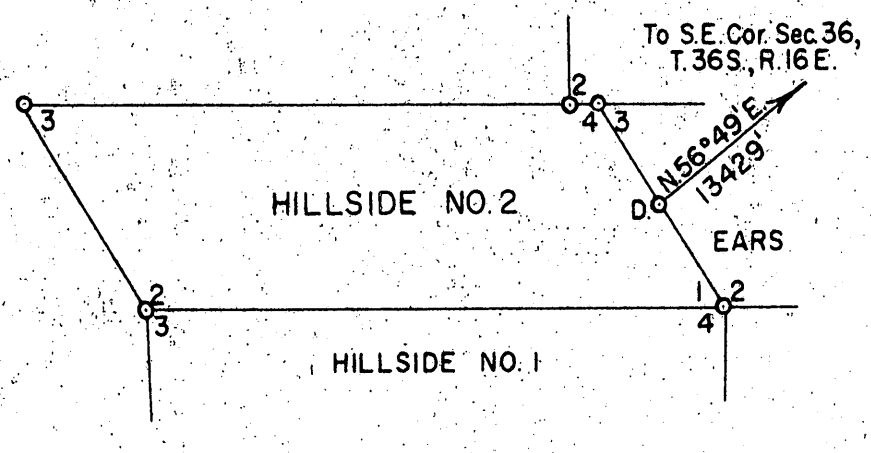


HILLSIDE NO. 1 CLAIM

Beginning at the point of discovery, said point being marked with a mound of rocks, from whence the S.E. Cor. of Sec. 36, T.36 S., R.16 E. of the Salt Lake Meridian bears N.54°29'E. a dist. of 13,440'; thence S.09°14'E. 300 ft. to Cor.1, which point is common with Cor.4 of Hillside; thence S.81°56'W. a dist. of 1500 ft. to Cor.2, which point is common with Cor.3 of said Hillside; thence N.09°14'W. 600 ft to Cor.3, which point is common with Cor. 2 of Hillside No.2; thence N.81°56'E. 1500 ft. to Cor.4, which point is common with Cor.1 of said Hillside No.2; thence S.09°14'E. 300 ft. to the place of beginning. The Hillside No.1 Claim is adjacent to and contiguous with the Hillside No.2 on the northerly, the New Year No.1 on the easterly, and the Hillside Claim on the southerly side. Located approximately 3 mi S.W. of Fry Camp, 60 miles S.W. of Blanding, in unsurveyed Sec.10, Township 37 South, Range 16 East, San Juan County, Utah.

EXHIBIT B

HILLSIDE NO.2 CLAIM



Beginning at the point of discovery, said point being marked with a mound of rocks from whence the S.E. Cor. of Sec. 36 S., R.16 E. of the Salt Lake Meridian bears N.56°49'E. a dist. of 13,429 ft.; thence S.57°10'E. 300 ft. to Cor.1, which point is common with Cor.4 of Hillside No. 1 Claim; thence S.81°56'W. a dist. of 1500 ft. to Cor.2, which point is common with Cor.3 of said Hillside No.1; thence N.57° 10'W. 600 ft. to Cor.3; thence N.81°56'E. 1500 ft. to Cor.4; thence S.57°10'E. 300 ft. to the place of beginning. The Hillside No. 2 Claim is adjacent to and contiguous with the Ears Claim on the easterly, and the Hillside No. 1 Claim on the southerly side. Located in unsurveyed Sec.10, Township 37 South, Range 16 East, approximately 3 miles S.W. of Fry Camp, 60 miles S.W. of Blanding, in San Juan County, Utah.

EXHIBIT B