1117 Washington Avenue
P. O. Box 509
Golden, Colorado
June 29, 1954

Mr. O. D. Robinson
223 Fourth Avenue
Pittsburgh 22, Pennsylvania

Dear Mr. Robinson:

Please confirm below our agreement relating to approximately 18,000 acres of land in Fremont, Montrose, and Jefferson Counties, Colorado, which in my opinion, based upon a preliminary investigation conducted under my supervision and at my expense, contain mineral deposits capable of being mined and marketed at a profit.

In respect of these lands (outlined in red on the attached map - Exhibit A - and herein designated "contract area") I now own or control certain lode claims and mining rights more particularly described in Exhibit B attached.

As I have previously explained to you, the Defense Production Act of 1950 was designed to enc urage the exploration, development, and mining of critical and strategic metals and minerals. Pursuant to this Act, as amended, the Defense Minerals Exploration Administration, Department of the Interior (DMEA) has promulgated DMEA Order 1, amended, setting forth procedures and regulations for obtaining government aid in financing the cost of projects for exploration for indicated or undeveloped sources of strategic or critical metals and minerals. These government contributions or loans are repayable to the government out of but only out of 2½% to 5% of the gross proceeds from the sale of ore mined and shipped from ground embraced by an exploration project loan. Inasmuch as the contract area is believed to include several projects worthy of further exploration, it is reasonable to expect that the government will contribute 75% of the total allowable costs of each such exploration project. In connection with the above-mentioned preliminary investigation, I have incurred expenses in the approximate amount of $20,000.00 and have estimated that new working capital in the amount of $230,000.00 or less, coupled with government contributions under the DMEA program, will be sufficient to explore a substantial portion of the contract area.

In consideration of the premises, of our mutual desire to participate in the further exploration and development of the contract area, and of your providing new working capital with which to aid in financing exploration projects hereunder on the basis of your owning an 80% and my owning a 20% interest in the aforesaid claims and mining rights and in all other properties, both real and personal, that may be acquired under the terms and conditions hereof, it is agreed:

(1) That upon your confirmation of this letter-agreement, you will pay to me in cash the sum of $20,000.00 as reimbursement of expenses incurred by me in connection with the discovery of mineral deposits and the acquisition of mining claims in the contract area; and you will provide from time to time as required for exploration purposes amounts aggregating $230,000.00;

(2) (a) That after careful consideration but with the least practicable delay you will form or cause to be formed under or in conformity with the laws of such state as you consider best suited to further the purposes of this letter-agreement, an association, partnership, corporation, firm, or other entity (herein for convenience sometimes called "corporation", irrespective of the exact legal nature of such entity) by which or for which account and interest the further exploration, development, and mining of critical and strategic minerals and metals in the contract area may be carried on;

(b) That upon its formation, each of us shall forthwith execute and deliver or cause to be executed and delivered all such instruments of transfer as may be necessary or appropriate to vest in such new corporation title to all claims and mining rights described in Exhibit B, together with all of our right, title, and interest in any property or assets acquired hereunder, and that such transfers shall be made solely in exchange for stock (or other certificates evidencing an equity interest in such corporation) which shall be issued to you and me in exact proportion to our respective interests herein prior to such exchange, namely, 80% to you and 20% to me;

(c) That I shall be represented on the Board of Directors or other governing body of the corporation (which shall consist of not less than three nor more than seven members) so long as I continue to own not less than a 10% equity in the corporation;

(d) That from and after the date the corporation is formed, the raising of working capital required for development of the contract area shall be the sole responsibility of the corporation, the management of which shall exercise its best efforts to provide sufficient funds for the purposes aforesaid;

(3) That pending the formation of the corporation contemplated by Section 2 hereof, I shall have charge of all exploration work hereunder and for my services as Director of Exploration shall receive out of exploration moneys furnished by you a monthly salary of $500.00, plus a reasonable allowance for current office overhead and for other out-of-pocket expenses.

(4) That we contemplate the purchase of a bulldozer, rotary air drill, jeep-truck, station wagon with surveying tower, portable housing facilities, laboratory assaying unit, Geiger counter probe, field shop for maintenance of equipment, power unit, arc welder, two (2) scintillometers, Paulin altimeter, McCollough chain saw, Piper Super Cub plane, and other miscellaneous machinery and equipment which will involve an immediate outlay of approximately $75,000.00 and also the later purchase of a second rotary air drill at a cost of $25,000.00, more or less;

(5) That upon the purchase of the aforesaid machinery and equipment, I will immediately proceed in a workmanlike manner and in accordance with modern mining practices to explore the lands in the contract area by giving preference to such of said lands as in my judgment are most favorably located for the development of a commercial mining operation;

(6) That from time to time as exploration work progresses appropriate applications will be made to DMEA for exploration project loans, the proceeds of which will be devoted to the precise purposes for which they were granted;

(7) That all rights and obligations hereunder, insofar as they relate to lands nowincluded in the contract area (or which may hereafter be made subject to the terms and conditions of this letter-agreement) are subject to (a) all applicable laws and regulations relating to the prospecting for and the mining of metals and minerals upon Government, State, or privately owned lands and (b) all legal or other impediments beyond the control of the party affected thereby;

(8) That this letter-agreement shall become effective as of June 1, 1954, although actually executed subsequent to that date;

(9) That the terms hereof shall be legally binding upon each of us and our respective heirs, personal representatives, successors, and assigns.

Very truly yours,

W. Alan Stewart

W. Alan Stewart

Confirmed:

O. D. Robinson

Exhibit B

to Letter-Agreement between
W. Alan Stewart and O. D. Robinson
dated June 29, 1954

Group 1 Mining Claims

June Bug
June Bug - Nos. 1 and 2
Billie Jean - No. 1

These are certified mining claims recorded as lode locations in the Court House at Montrose, Montrose County, Colorado, under the names of Everett and June Ayers. The claims are located on a topographic uplift known as Martin Mesa near Uravan in Montrose County, Colorado. DMEA loan applications are nearly completed for this group and will be submitted in a few days.

Group 11 Mining Claims

Colexco - Nos. 1-43

These mining claims are located in Fremont County, Colorado, and are held by lode location. Location certificates are on record at the Court House in Canon City, Fremont County, Colorado. Recordings are in Book 333, Pages 475 to 505. Amended location certificates are recorded for Colexco Nos. 40-42 in Book 333, Pages 539 and 540. DMEA loan applications are in process of preparation.

Group 111 Mining Claims

Windy Basin - Nos. 1 and 2
Pick and Shovel - Nos. 1-5
Hub - Nos. 1-5
Hominy - Nos. 1 and 2
Yellow Cow

These tracts are held by such possessory and locating rights as have been acquired by lease applications filed with the Atomic Energy Commission under the provision of Atomic Energy Commission Circular 7. Notices of lease application have been filed by the Colorado Exploration Company with the Recorder of Montrose County, Montrose, Colorado. Lease application recording reception Nos. 228745 through 228749. The tracts are located on Martin Mesa, Montrose County, Colorado. The gathering of field data for use in preparing DMEA applications is now in progress.

Group IV Mining Claims

Persistance - Nos. 1, 3, 4, and 5
Duke - Nos. 1-5
Brontosarus -
Electron - Nos. 1-5
Duchess - Nos. 1-7
Phantom - Nos. 1-5

Mining tracts filed on by James A. Nibert*

Wilma - Nos. 1-5
Oliver - Nos. 1-5

Mining tracts filed on by William Burnett

Windy -
Windy - Nos. 1-3
June Bug - No. 3
Show Me -
Sparky -

Mining tracts filed under the names of Everett and June Ayers.

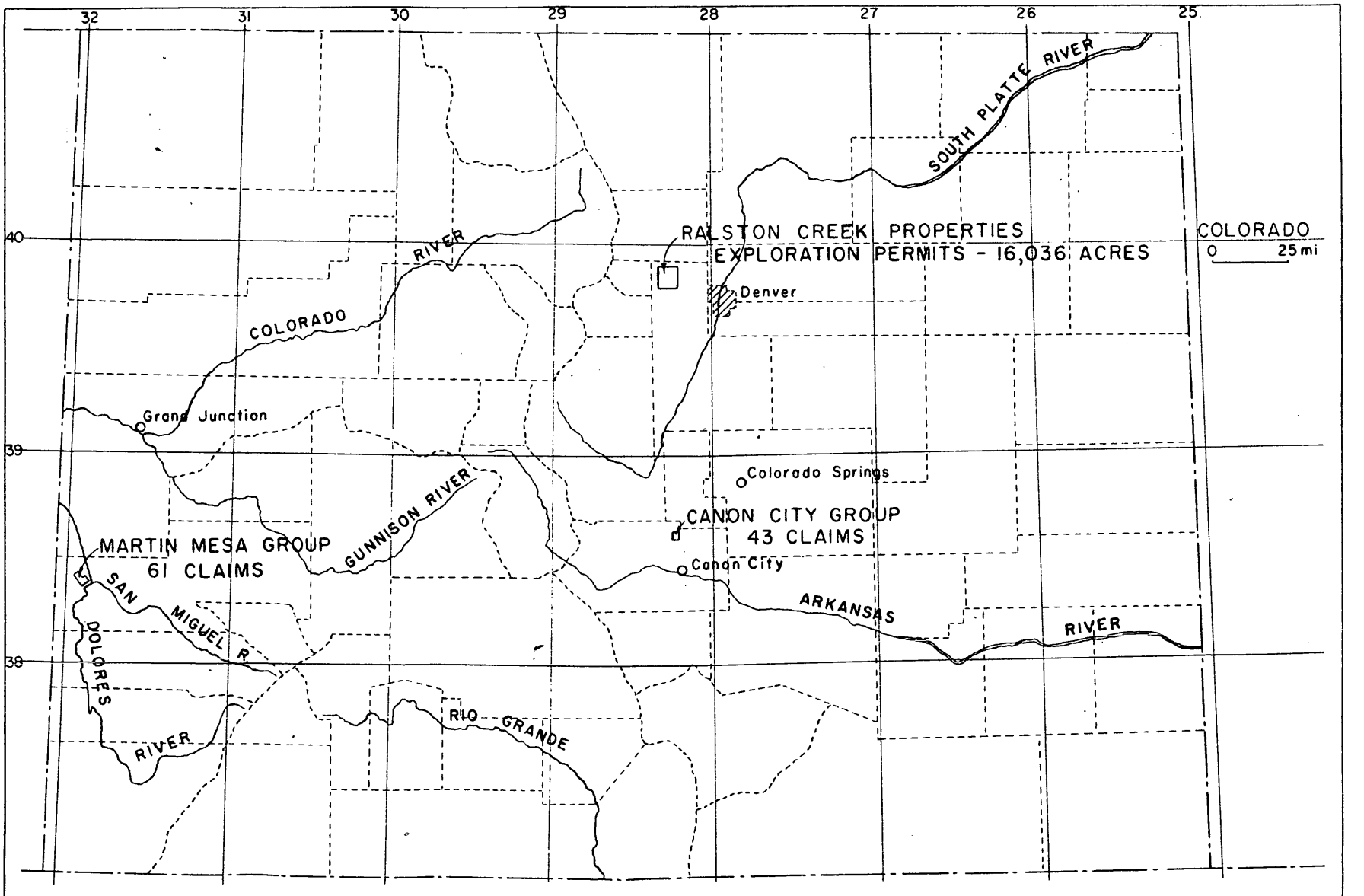
The Colorado Exploration Company holds options to lease the above listed mining tracts from the claim owners. Such options are to be executed upon validation of these claims or tracts under the provision of Atomic Energy Commission Circular 7. Notices of lease application covering these tracts have been recorded at the Court House in Montrose County, Montrose, Colorado. Lease applications have been prepared and submitted to the Atomic Energy Commission Regional Operations Office at Grand Junction, Colorado. The tracts are located on Martin Mesa, Montrose County, Colorado. The gathering of field data for use in preparing DMEA applications is now in progress.

Group V Fee Land

Ralston Creek Mining District

The Colorado Exploration Company has exploration permits, with an option to lease, covering 16,036 acres in Jefferson County, Colorado. This acreage is located within the boundaries of the U. S. Geological Survey Quadrangle known as Ralston Buttes. A limited amount of exploration mapping has been conducted in this area.

*-Three additional claims are under option from James A. Nibert. The document containing the claim names is in the possession of an agent of Colorado Exploration Company. Descriptions of these claims will be forwarded as soon as possible.


32
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SOUTH PLATTE RIVER
RALSTON CREEK PROPERTIES
EXPLORATION PERMITS - 16,036 ACRES
COLORADO
0 25 mi
Denver
COLORADO RIVER
Grand Junction
Colorado Springs
GUNNISON RIVER
CANON CITY GROUP
43 CLAIMS
Canon City
MARTIN MESA GROUP
61 CLAIMS
SAN MIGUEL R.
DOLORES RIVER
ARKANSAS RIVER
RIO GRANDE

General Assignment

KNOW ALL MEN BY THESE PRESENTS That W. Alan Stewart and O. D. Robinson, in confirmation of the understanding and agreement as set forth in their letter to Benalan Mining Company under date of September 7, 1954, and accepted by Benalan Mining Company, for the purpose of confirming full and complete ownership and title in Benalan Mining Company of all the assets as specified or referred to in the letter-agreement between W. Alan Stewart and O. D. Robinson dated June 29, 1954, or acquired pursuant to said letter, whether prior or subsequent to the date thereof, as well as all rights, title, and interest of W. Alan Stewart and O. D. Robinson in and to said letter-agreement of June 29, 1954, have granted, bargained, sold, conveyed, assigned, transferred, and set over and by these presents do grant, bargain, sell, convey, assign, transfer, and set over unto Benalan Mining Company, its successors and assigns,

> All property, real and personal, rights, licenses, privileges, interest, and estates of every kind and character, legal and equitable, referred to and acquired pursuant to said letter-agreement of June 29, 1954, and whether acquired prior or subsequent to said date, subject, however, to all the terms and provisions of said letter-agreement.

TO HAVE AND TO HOLD the same unto the said Benalan Mining Company, its successors and assigns.

Said W. Alan Stewart and O. D. Robinson hereby further covenant and agree to and with Benalan Mining Company that they will, together or separately, as to any of said assets which require separate treatment, do and perform every act and thing as may be required to perfect the title to any of said property and further agree that they will execute any and all further instruments of sale, conveyance, assignment, or transfer as may be required subsequently to vest legal title in Benalan Mining Company, in which Company full ownership now is.

IN WITNESS WHEREOF, The parties hereto have set their respective hands and seals this 1st day of October, 1954.

W. Alan Stewart

W. Alan Stewart

O. D. Robinson

STATE OF Colorado)
COUNTY OF Jefferson) ss:

The within named W. Alan Stewart appeared before me in person this 1st day of October, 1954, and acknowledged the foregoing instrument to be his act and deed for the uses and purposes therein specified.

WITNESS my hand and seal of office.

My commission expires
November 18, 1956

Grace B. Burt
Notary Public

STATE OF PENNSYLVANIA)
COUNTY OF ALLEGHENY) ss:

The within named O. D. Robinson appeared before me in person this 4 day of October, 1954, and acknowledged the foregoing instrument to be his act and deed for the uses and purposes therein specified.

WITNESS my hand and seal of office.

My commission expires
Jan. 22. 1957

Nancy Arnold
Notary Public

NANCY J. ARNOLD, Notary Public
MY COMMISSION EXPIRES
JAN. 22, 1957

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

224 New Customhouse
Denver 2, Colorado

May 10, 1955

Memorandum

To: Chairman of the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Report of Examination, DMEA Docket 3561 (Uranium), Benalan Mining Company, Group I, (Martin Mesa claims), Montrose County, Colorado

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

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

W. M. Traver

W. M. Traver

E. N. Harshman

E. N. Harshman

Enclosures

/DMEA\
Date Rec'd.

APR 26 1955

BUREAU OF MINES
Denver, Colorado

Region III

TRANSMITTED
MAY 10 1955

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
April 25, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw, Supervising Mining Engineer

Subject: Examination Report, DMEA 3561, (Uranium) Banalan Mining Company, Group 1, Martin Mesa claims, Montrose County, Colorado.

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations" by Glen Walker, mining engineer, and D. A. Brew, geologist, and the original and ten copies of an engineering report by Glen Walker.

The Banalan Mining Company applied for Government assistance in the amount of $44,635.86 to drill 185 holes totaling 28,219 feet. The property was examined on March 30, 1955. The examining team concluded there was little likelihood of discovering a significant amount of uranium as the result of the proposed work. It is, therefore, recommended that this application for exploration assistance be denied.

John F. Shaw
John F. Shaw

Enclosures

cc 10
DMEA 3561
Chron

JFS/cm

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA 3561, Group 1, Martin Mesa Claims

Rosalea Mining Company

Montrose County, Colorado

Uranium

Glen Walker, Mining Engineer
Bureau of Mines

D. A. Brew, Geologist
Geological Survey

April 20, 1955

DMRA 3561

GROUP 1, MARTIN MESA CLAIMS
MESALAN MINING COMPANY
MONTROSE COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By Glen Walker
Mining Engineer
Bureau of Mines

R. A. Bery
Geologist
Geological Survey

DMEA 3561

TRANSMITTED
MAY 10 1955

GROUP 1, MARTIN MESA CLAIMS
BENALAN MINING COMPANY
MONTROSE COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Glen Walker and D. A. Brew

The Benalan Mining Company of Golden, Colorado, applied for Government assistance in the exploration of four and a fraction claims in Montrose County, Colorado, for uranium. They proposed to drill 185 dry holes on a 100- by 100-foot grid. The aggregate footage of 28,219 feet was estimated to cost $44,635.86.

A DMEA field examination was made on March 30, 1955, by W. P. Williams, R. L. Boardman and D. A. Brew of the Geological Survey and Glen Walker, Bureau of Mines, accompanied by Robert D. Turley for the company.

It was concluded that the property does not warrant Government assistance as evidenced by the poorly mineralized outcrops and the seven completely barren holes previously drilled by the company.

It is recommended that the application be denied.

DMRA 3561

GROUP 1, MARTIN MESA CLAIMS
BENALAN MINING COMPANY
MONTROSE COUNTY, COLORADO

Engineering Report

By Glen Walker
Mining Engineer
Bureau of Mines

DMEA 3561

GROUP 1, MARTIN MESA CLAIMS
HIMALAYA MINING COMPANY
MONTROSE COUNTY, COLORADO

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DMEA 3561

GROUP 1, MARTIN MESA CLAIMS
BENALAN MINING COMPANY
MONTROSE COUNTY, COLORADO

ENGINEERING REPORT

By Glen Walker

INTRODUCTION

The Benalan Mining Company of Golden, Colorado, applied for Government assistance in the exploration for uranium ore on four and a fraction unpatented mining claims in sec. 26, T. 48 N., R. 18 W., New Mexico principal meridian in Montrose County, Colorado.

The work outlined in the application consisted essentially of drilling 185 dry rotary holes totaling 28,219 feet on a 100- by 100-foot grid over a portion of the four and a fraction claims. It was estimated this work would cost $44,635.86, or $1.58 per foot.

An examination of the property was made by a Region III DMEA examining team on March 30, 1955, in company with Robert D. Turley, geologist for the company, and Everett Ayers, lessor of the claims.

The investigations indicated that the geologic probability of an ore discovery does not warrant Government participation in the exploration of this property.

ACKNOWLEDGMENTS

Robert D. Turley, geologist, and Everett Ayers, lessor, acted as guides and offered certain pertinent information to the examining field team composed of Robert Boardman, D. A. Brew and W. F. Williams

of the Geological Survey and Glen Walker of the Bureau of Mines. The Atomic Energy Commission office in Grand Junction, Colorado, was consulted about the application.

LOCATION, TOPOGRAPHY AND CLIMATE

The four and a fraction claims are on Martin Mesa in sec. 26, T. 48 N., R. 18 W., New Mexico principal meridian, about 20 miles northwest of Bravan, Colorado, in Montrose County. Grand Junction, the nearest rail point, is about 90 miles north of the property.

The subject land extends from the top of the mesa to part way down the southeast side of Wildcat Canyon which is tributary to the Dolores River. The difference in elevation is about 650 feet marked by abrupt cliffs of Salt Wash rims with more gentle intervening slopes.

The climate here is typical of the Colorado Plateau semi-arid region. Most of the 10-15 inches of annual precipitation comes as snow storms and heavy early summer rains.

HISTORY AND PRODUCTION

These claims were located in 1952 by Everett Ayers who excavated three shallow cuts into the ore horizon from rim exposures. The Ranalan Mining Company drilled 7 dry rotary holes spaced about 100 feet apart across the western-most claim, June Bug No. 2. No ore production is claimed or recorded from the property.

OWNERSHIP AND EXTENT

The property consists of four and a fraction unpatented mining claims said to have been located by Everett Ayers and recorded in the Montrose County Courthouse. No time was consumed in checking this

statement after it became evident that the Government would not be involved with the legal status of the property.

A copy of the lease between the locator and the Colorado Exploration Company of Golden, Colorado, is included with the application; also an assignment of this lease from W. Alan Stewart d. b. a. the Colorado Exploration Company to Ranalan Mining Company.

DESCRIPTION OF DEPOSITS

The rocks exposed on the property consist of interbedded sandstone and mudstone strata of the Salt Wash member of the Jurassic Morrison formation. This series of rocks contain at least four sandstone rims considered to be potential ore horizons; however, by far the largest proportion of Plateau production has come from the top rim. On this property this rim was examined over a distance exceeding 2,000 feet and at only 3 widely separated places was there any uranium mineralization noted. At none of these exposures was the mineralized rock over 6 inches thick, nor did it have any considerable horizontal extent. None of the excavations exceed 6 feet in length along the ore horizon at which point the thickness of the mineralized rock decreased to an inch or less.

Of the 7 holes drilled across the June Bug No. 2 claim on a staggered line 300-400 feet north of the south end line, 5 are reported to have cut all 4 Salt Wash sandstones. This drilling is said to have indicated that the top sandstone is thickening in an easterly direction.

MINEABLE ORE RESERVES

From the exposures, no mineable reserves are indicated.

PRESENT STATUS

There is no mining or milling equipment on the property.

The three superficial excavations were made by the locator of the claims, Everett Ayers, and reveal only meager indications of ore. None of these openings exceed 6 feet in length from the outcrop, with from a few inches to less than an inch of mineralized rock.

In 1 of the 7 holes drilled on the June Bug No. 2 it is reported: "a slightly radioactive carbonaceous sandstone was encountered".

There has been no substantial production of ore within about a mile of the property.

PROJECT PROPOSALS

The applicant proposed drilling 185 dry rotary holes about 150 feet deep for a total footage of 28,219 feet. The holes were to cover about one-half of the area of the four and a fraction claims and have a 100- by 100-foot grid pattern. This work was to be done with company owned equipment. The total cost of the applicant's program was estimated at $44,635.86, or $1.58 per foot.

Because the application for exploration assistance is denied, no cost estimate was made; however, the costs submitted by the applicant appear about 25 percent high.

CONCLUSIONS

The main favorable geologic aspect noted on this property is the more than average thickness of the sandstone "rim" usually considered the most productive ore horizon. The other favorable

factors associated with uranium ore deposits in the Plateau region are for the most part lacking.

It appears the outcrop of the usual potential ore formation has been unsuccessfully prospected as evidenced by the three excavations made in it. Likewise, the drilling at some distance from the outcrop has been unrewarding as regards ore and indicated only meager favorable information.

RECOMMENDATIONS

The geologic probability of a worthwhile discovery on this property appears slight and does not warrant Government participation. It is, therefore, recommended that the application for exploration assistance be denied.

/em

IN REPLY REFER TO:
DMEA
Date Rec'd
MAY 6 1955
BUREAU OF MINES
Denver, Colorado

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

TRANSMITTED
MAY 10 1955

May 5, 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3561 (Uranium), Damalan Mining Co., Group 1, Martin Mesa claims, Paradox District, Montrose County, Colorado

Transmitted herewith are 10 copies of a geologic report by D. A. Brew covering a field examination of the subject property.

On and near the subject claims small, roughly tabular bodies of uranium ore, ranging in size from less than a ton to about 100 tons, are erratically distributed in the first (lowermost) and second rims of the Salt Wash member of the Morrison formation. On Martin Mesa the total production from the first rim is about 350 short tons. Geologic features of the first rim indicate slight possibility of its being host to any deposit much over 100 tons in size, and there is no evidence that commercial ore exists on the claims it is proposed to explore. Relatively small production from other nearby claims on Martin Mesa further indicate that any ore bodies which might be found on the claims will be small.

Brew concludes that the chance of finding a significant amount of uranium ore on this property is poor and, therefore, recommends that the application be denied.

I concur with this conclusion and recommendation.

D R MacLaren
for E. N. Harshman
Member, Field Team

Enclosures (10)

EMMacLaren:arh

MINERAL DEPOSITS
DMEA
RECEIVED
MAY 4 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

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

April 25, 1955

MAY 16 1955

Memorandum

To: E. N. Harshman

From: W. P. Williams

Subject: DMEA 3561, Benalan Mining Co., Group 1, Martin Mesa claims, Paradox District, Montrose County, Colorado

Transmitted herewith are eleven copies of a geologic report by D. A. Brew covering the field examination of the above referenced property.

The lowermost sandstone beds of the Salt Wash member of the Jurassic-Morrison formation are the primary target of the proposed exploration. Those beds according to known geologic criteria do not appear favorable for the occurrence of a uranium ore body large enough to pay the costs of the exploration. Study of the area in general shows that if deposits are present they are probably few in number, small in size, and erratically distributed. Brew concludes that the chances of finding a significant uranium ore body are small. He recommends, and I concur, that the application for DMEA assistance be denied.

Mr. Louis Garbrecht of the Atomic Energy Commission, Grand Junction Operations Office, was asked for his help and advice in evaluating the property.

We are returning herewith the brochure covering this application.

WPWilliams

W. P. Williams
Geologist

Enclosures

MAY 1 8 1955

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

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

DMEA 3561, Benalan Mining Co., Group 1, Martin Mesa claims, Paradox District, Montrose County, Colorado

Uranium

Geologic Report

by

D. A. Brew
U. S. Geological Survey

April 1955

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ILLUSTRATIONS

Figure 1. Index map of part of Colorado Plateau showing location of Benalan Mining Co. Property, Montrose County, Colorado

2. Map showing location of June Bug and Billie Jean claims, Martin Mesa, Benalan Mining Co., Montrose County, Colorado

INTRODUCTION AND SUMMARY

The Benalan Mining Company of 1117 Washington Avenue, Golden, Colorado, has applied to the Defense Minerals Exploration Administration for a loan to explore for uranium on four and a fraction mining claims on Martin Mesa, Paradox Mining district, Montrose County, Colo. (fig. 1). The claims proposed for exploration are the June Bug, June Bug No. 1, June Bug No. 2, Billie Jean No. 1, and June Bug Fraction; all owned by Everett and June Ayers, and leased to W. Alan Stewart, doing business as the Colorado Exploration Company; rights under that lease are assigned to the Benalan Mining Company, first by a letter agreement and then by an instrument of general assignment.

The claims included in the application were examined on March 30, 1955, by D. A. Brew, R. L. Boardman, and W. P. Williams, geologists, U. S. Geological Survey, and Glenn Walker, engineer, U. S. Bureau of Mines, accompanied by Robert Turley, representing the Benalan Mining Company, and Everett Ayers, one of the lessors of the claims. The claims are located approximately in the center of sec. 26, T. 48 N., R. 17 W., New Mexico principal meridian. The claims can be reached by about 6 miles of new access road that joins Colorado Highway 141 at the new Dolores River bridge about 9 miles northwest of Uravan, Colo. (fig. 1). The last three miles of the access road are steep and rough, but probably are passable by truck under all but very severe weather conditions.

The Benalan Mining Company proposes 28,219 feet of rotary drilling on the claims to be explored. The total cost of the proposed exploration, including technical supervision, surveying, assaying, and incidentals was estimated by the applicants to be $44,635.86, or $1.58 per foot of drilling.

A field examination of the claims in question indicates that little possibility exists of finding uranium deposits of sufficient size to justify the cost of exploration. If deposits are present in the area they are very likely few in number, small in size, and erratically distributed. The aggregate reserves of the area are believed to be very small. This appraisal is based on both geologic features and past exploration in and near the area. These factors are discussed in detail in the remainder of this report.

It is recommended that this application be denied.

GEOLOGY

Martin Mesa is located on the northeast flank of the Paradox Valley anticline. The rocks in the area strike about N. 45° W. and dip approximately 3° NE. towards the axis of the San Miguel syncline.

The rocks exposed in the vicinity of the claims consist, from oldest to youngest, of the Jurassic Entrada, Summerville and Morrison formations. The Entrada ("Slick Rim") and Summerville formations have no apparent relationship to the known uranium deposits in the area and are not considered in the proposed exploration program. The upper (Brushy Basin) member of the Morrison formation has been completely eroded in the area under consideration, as has most of the upper part of the underlying Salt Wash member. The thickest section of Salt Wash exposed on the claims totals about 270 feet.

The lowermost (first) sandstone rims of the Salt Wash are the primary target of the proposed exploration. The first rim is about 50 to 65 feet thick. The lower 25 feet of the first rim is a non-lenticular, continuous, massive, cliff-forming, light brown and light gray sandstone that is crossbedded in part. Abundant limonite stain is present near the bottom of the bed and some copper stain is also present. Very few mudstone splits occur within the massive sandstone. The mudstone underlying the sandstone is predominantly red but some blue-green is locally present.

Overlying the aforementioned massive sandstone is a persistent red and blue-green mudstone lens which is 1 to 3 feet thick.

The upper part of the first rim is a sandstone 25 to 35 feet thick which overlies the persistent mudstone lens described above. This sandstone is very similar to the one at the base of the first rim, differing only in a greater number of thin mudstone splits and less massive character.

Very little carbonaceous material is present in the first rim. Based on criteria derived from D. B. Weir's Geologic Guides to Prospecting for Carnotite Deposits of the Colorado Plateau, U. S. Geological Survey Bulletin 988-B, 1952, this first rim would be classed as semifavorable for ore deposits. The second rim is separated from the first by 5 to 30 feet of predominantly red mudstone. The sandstone of the second rim is very lenticular, and ranges from 10 to 40 feet in thickness. It contains more mudstone splits than does the first rim. The third rim is a thin, discontinuous, poorly developed sandstone which is interbedded with a thick section of predominantly red mudstone. The uppermost (fourth) rim is the most productive unit in the nearby Dolores Bench area--as it is in the entire Uravan area to the southeast. In the area under consideration most of the fourth rim has been eroded and only a remnant of it remains on the highest part of the claims. It is a fairly massive, light-brown sandstone.

ORE DEPOSITS

There has been no production of uranium-vanadium ores from the June Bug, June Bug No. 1, June Bug No. 2, Billie Jean No. 1 and June Bug Fraction claims. According to Atomic Energy Commission figures 52 tons of ore averaging 0.26 percent U_3O_8 and 1.69 percent V_2O_5 were produced from the first rim on the Buckhorn claim, which is immediately southeast of the June Bug No. 1 claim. About three-quarters of a mile north of the area proposed for exploration is the Wildcat No. 2 deposit, which is also in the first rim. It has produced about 53 tons of ore averaging 0.21 percent U_3O_8 and 2.20 percent V_2O_5. About half a mile north of the Wildcat No. 2 are the Barton Uranium Company's Alta and Point Enterprise mines. This company reports that in January 1955, about 225 tons of ore averaging 0.35 percent U_3O_8 and 1.90 percent V_2O_5 were produced from an ore body in the first rim on the Alta claim. Mining has been started on another ore body which, based on data provided by Barton Uranium Company, may contain several thousand tons of mineable ore. Except for that deposit, all ore bodies that have been found to date in the first rim in this area are much smaller.

Three rim shows of mineralized material were noted on the claims examined. In the south central part of the June Bug claim a small layer of mineralized material occurs in a sandstone that is probably second rim (fig. 2). The mineralized part of the outcrop is less than 0.5 foot thick and is about 4.0 feet long. Readings of about five times background were obtained from the outcrop with geiger counter. Two shows of mineralized rock were noted on the rim at the northwest end of the June Bug, June Bug Fraction and June Bug No. 2 claims (fig. 2). Both of these occurrences are about in the middle of the first rim, located approximately at the persistant mudstone split. At both places the mineralized float was somewhat more radioactive than the outcrop; some of the float registered about three times background, but the outcrop itself registered about twice background at best. The mineralized rock at both outcrops is gray in color with little carnotite visible. The deposits are less than 0.5 feet in thickness and extend along the rim for less than 3 feet.

As the aforementioned production figures indicate, the deposits found in the first rim in the Martin Mesa area generally contain less than 250 tons of ore. The deposits on and near the claims included in this application appear to be even smaller in size.

The Buckhorn deposit contained ore-grade material in a thin, roughly tabular mass which is reported to have formed a roll at one place. One mineralized log was also reported. The ore was unusually high in vanadium, the vanadium to uranium ratio being about 10 to 1.

The typical mineral assemblage is the usual carnotite-vanadium clay type; most of the mineralized rock is dark gray with some yellow and green streaks. Some secondary copper minerals also are present.

EXPLORATION

The applicants drilled seven holes on the June Bug No. 2 and June Bug Fraction claims prior to filing the DMEA application. One of the seven holes penetrated what is described in the brochure as "a slightly radioactive carbonaceous sandstone." Results of drilling done as assessment work are not available. The applicants are currently drilling on Martin Mesa, southwest of the area included in the application. They stated that this drilling has discovered ore-grade material in the first rim but that offset drilling has shown that the ore bodies are small and can be projected only a few feet beyong the discovery holes.

Twenty-eight drill holes on the nearby Eve and Height claims (north and east of the area examined) were gamma-ray logged by the U. S. Geological Survey during the summer and fall of 1954. None of the holes were found to have penetrated mineralized material of ore grade, and only 3 holes were weakly mineralized.

The applicants propose to do 28,219 feet of rotary drilling at a cost of $44,635.86 on the four and a fraction claims included in their application. The drilling would consist of 185 holes, from 75 to 265 feet deep, on 100-foot centers. Samples would be taken with a cyclone type sample collector and all holes would be probed with a geiger tube.

It seems unlikely that this proposed exploration program would lead to the discovery of sufficient ore reserves to justify DMEA participation. The geologic features of the first rim are such that there is little possibility of its being host to any deposit much over 100 tons in size and, at present, there is no evidence that commercial ore is present on the claims proposed for exploration. The relatively small production from other claims in the adjacent parts of Martin Mesa is a further indication that the reserves contained in the claims concerned are not significant.

CONCLUSIONS AND RECOMMENDATIONS

Uranium deposits on and near the claims examined occur in the first (lowermost) and second rims of the Salt Wash member of the Jurassic Morrison formation. The deposits are small, erratically distributed, roughly tabular bodies, which range in size from less than a ton to perhaps 100 tons or more. To date total production from the first rim of the Salt Wash on Martin Mesa totals about 350 short tons.

The applicants propose to search for ore deposits by 28,219 feet of rotary drilling, which is estimated to cost $44,635.86. The drilling would consist of 185 holes, 75 to 265 feet deep, on 100-foot centers. Geologic features indicate that there is little possibility of discovering ore reserves commensurate with the cost of exploration; it is therefore recommended that the application be denied.

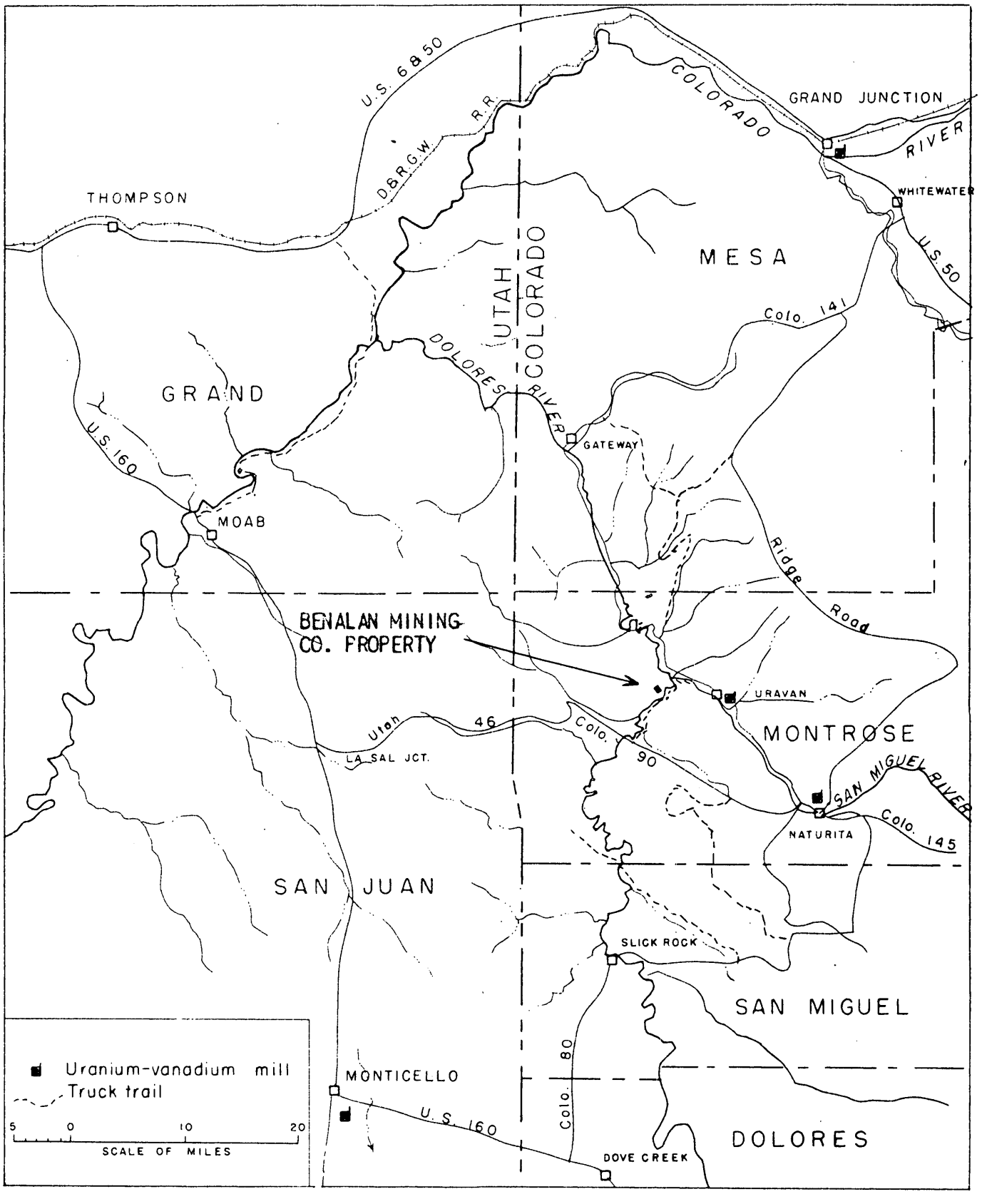
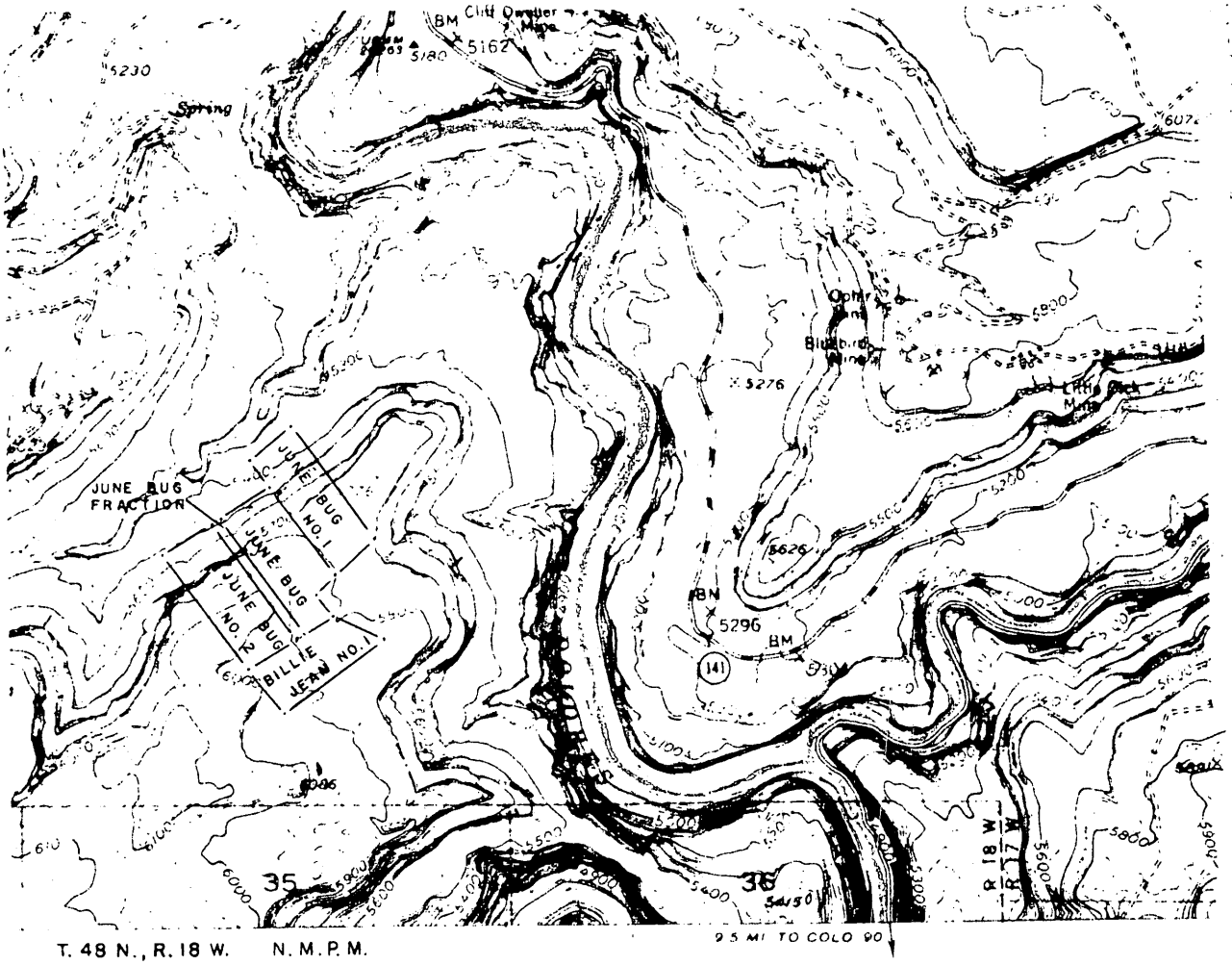


Figure 1. INDEX MAP OF PART OF COLORADO PLATEAU SHOWING LOCATION OF BENALAN MINING CO. PROPERTY, MONTROSE COUNTY, COLORADO



1 ½ 0 1 MILE

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

Note: Claim boundaries taken from applicants map

Note: Land lines and topography from U.S. Geological Survey quadrangle map Red Canyon

Figure 2. MAP SHOWING LOCATION OF JUNE BUG AND BILLIE JEAN CLAIMS, MARTIN MESA, BENALAN MINING CO., MONTROSE COUNTY, COLORADO

Mining Division
Date Rec'd.
NOV 8 - 1954
BUREAU OF MINES
Denver, Colorado

APPLICATION FOR AID IN AN EXPLORATION PROJECT

Pursuant to DMEA Order 1,
Under the Defense Production Act of
1950 - As Amended

By
BENALAN MINING COMPANY
1117 Washington Ave.
Golden, Colorado

November 1, 1954

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
NOV 3 - 1954

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. 3561
Metal or Mineral Uranium
Date Received
Estimated Cost $44,686
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Renalan Mining Company
1117 Washington Avenue
Golden, Colorado
(Incorporated in the State of Pennsylvania - see attached)

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

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

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

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

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

(see attached application)

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

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

(*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

(*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 .....

.....

(*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 ..... days and be completed within ..... 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 [x] 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 November 1, 1954, 195...

BENALAN MINING COMPANY
(Applicant)

By W. Alan Stewart

W. Alan Stewart - Vice-President & General Manager

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

Benalan Mining Co.,
1117 Washington Ave.,
Golden, Colorado

D M E A LOAN APPLICATION

1 - NAME OF APPLICANT

(a) Benalan Mining Company
P. O. Box 509
Golden, Colorado

(b) A Pennsylvania Corporation

(c) President	Mr. J. R. Wylie, Jr. Benedum-Trees Building Pittsburgh 22, Pa.
Vice-President	Mr. Paul G. Benedum Benedum-Trees Building Pittsburgh 22, Pa.
Vice-President	Mr. O. D. Robinson Beeedum-Trees Building Pittsburgh 22, Pa.
Vice-President and General Manager	Dr. W. Alan Stewart 1117 Washington Avenue Golden, Colorado
Secretary	Mr. David D. Johnson Benedum-Trees Building Pittsburgh 22, Pa.
Treasurer	Mr. Edward Kelley Benedum-Trees Building Pittsburgh 22, Pa.

(d) - - - -

2 - GENERAL

3 - APPLICANT"S PROPERTY RIGHTS

(a) The property consists of four and a fraction lode claims located in Section 26, Township 48 North, Range 18 West, New Mexico Principal Meridian, the Vixen Mining District, Montrose County, Colorado.

(See location map - Plate 4 - in folder) The four and a fraction claims included in the proposed exploration project are collectively referred to hereunder as Group 1 of Martin Mesa claims. Claim names are:

1 - June Bug
2 - June Bug No. 1
3 - June Bug No. 2
4 - Billie Jean No. 1
5 - June Bug Fraction

(b) None

(c) Lessee

(d) Lease from property owner to W. Alan Stewart, dba Colorado Exploration Company. Rights under this lease assigned to Benalan Mining Company, first by a letter agreement and then by an instrument of general assignment. (copies of all three documents included with application)

(e) - - - -

(f) Property consists of unpatented mining claims. The following documents are of record in the Recorder's office at Montrose, Montrose County, Colorado:

Initial Location Certificates:

Name of Claim	Locator	Date of Location	Book	Page
June Bug	Everett Ayers and June Ayers	10-24-52	349	500
June Bug No. 1	"	10-24-52	349	501
June Bug No. 2	"	10-24-52	349	501
Billie Jean No. 1	"	10-27-52	349	495
June Bug Fraction	"	6-17-54	380	71

Amended Location Certificates in Conformance with Public Law 250 - 83rd. Congress:

Name of Claim	Locator	Date/Posting Amended Notice of Location	Book	Page
June Bug	Everett Ayers & June Ayers	12- 1-53	366	277
June Bug No. 1	"	12- 1-53	366	278

June Bug No. 2	Everett Ayers and June Ayers	12- 1-53	366	279
Billie Jean No. 1	"	12- 1-53	366	265

Amended Location Certificates Resulting from a Transit & Stadia Survey of the Claims:

Name of Claim	Locator	Date of Amended Location	Book	Page
June Bug	Everett Ayers and June Ayers	6-20-54	388	3
June Bug No. 1	"	6-20-54	388	4
June Bug No. 2	"	6-20-54	388	5
Billie Jean No. 1	"	6-20-54	388	2

Affidavit of Value of Labor & Improvements:

June Bug

June Bug No. 1

June Bug No. 2

Billie Jean No. 1

(Expenditure made at the expense of the Colorado Exploration Company in behalf of the claim owners; filed for record June 28, 1954, Book 374, Page 258 (Reception #294661)

4 - PHYSICAL DESCRIPTION

(a) No mining operations have been or are now being conducted upon the land. There are no existing mine workings or production facilities. The exploration work performed previous to this application by the Colorado Exploration Company was for two purposes.

Some exploration drilling was undertaken to satisfy assessment work requirements.

All other exploration work performed on these claims was for the purpose of obtaining data for use in this D M E A application. The following operations were performed in gathering this data:

(1) The claims were resurveyed using a transit and stadia and amended location notices were prepared and recorded. During the resurvey it was noted that the June Bug and the June Bug No. 2 claims were over-size in width. The June Bug Fraction was therefore located to cover the excess ground.

(2) A structure contour map was prepared on the surface of the shale immediately underlying the base of the Salt Wash sandstone member of the Morrison formation. This structure contour map is included with this application as Plate 1. In preparing this map a structure contour map was first prepared on the top of the Entrada sandstone. The top of the Entrada has been exposed by erosion around three sides of the claims and was readily mapped with a plane table and alidade. The predominently shaly section between the top of the Entrada and the base of the Salt Wash sandstone was measured at a number of places during the plane table survey. The thicknesses obtained were superimposed on the Entrada contour map to obtain a contour map whose configuration is that of the bottom of the basal sandstone of the Salt Wash member of the Morrison formation.

(3) A coordinate grid was surveyed over the claims and proposed drill sites on 100-foot centers were staked. The elevation of the individual drill sites were determined by an altimeter survey. The surface elevations were then contoured to give a topographic map included with this application as Plate 2.

(4) The data from the structure contour map (Plate 1) was combined with the topographic map (Plate 2) to prepare a depth line map, showing the thickness of the Salt Wash sandstone member throughout the claims. This map is included with the application as Plate 3. From the depth line map it was possible to calculate the thickness of Salt Wash at each of the proposed drill sites. These thicknesses are tabulated in Appendix A and have been totaled to give the anticipated footage involved in the proposed exploration drilling project.

Six of the drill sites on the June Bug No. 2 claim were drilled to obtain information on the lithology of the Salt Wash in the subsurface, the purpose being to evaluate the section, using the geologic criteria for favorability enumerated in U. S. Geological Survey Bulletin 988-B, Geologic Guides to Prospecting for Carnotite Deposits on Colorado Plateau by Doris Blackman Weir, 1952. The results of this drilling will be fully described under Part C of this section.

(b) There is no current production from any of the claims involved, nor is there any recorded past production from Group 1 of Martin Mesa claims. As shown on Plate 3, there are two old prospects, one on June Bug No. 1 and one on the June Bug. A small amount of ore may possibly have been shipped from these prospects but there is no available information as to who opened these prospects or any ore shipped from them.

(c) Geologic Features:

General Setting

Martin Mesa is located within the old Vixen Mining District, more recently included within the Paradox District as designated by the Atomic Energy Commission in 1952. Martin Mesa is located along the northeast flank of the Paradox salt anticline. It is separated from Club Mesa and Long Park to the east and the southeast by the deep canyon of the Dolores River. At it's confludnce with the San Miguel River the Dolores River turns to the northwest and it's canyon divides Martin Mesa from Atkinson Mesa to the north. The southwest boundry of Martin Mesa is the steep escarpment of Paradox Valley. On the northwest Martin Mesa is separated from Carpenter Flats by Red Canyon.

The claims lie on the margin of a zone of uranium mineralization known as the Uravan mineral belt. R. P. Fischer and L. S. Hilpert have commented concerning this belt in the United States Geological Survey Bulletin 988-A, Geology of the Uravan Mineral Belt, 1952, as follows:

> "The name Uravan mineral belt is applied to a narrow elongated area in southwestern Colorado in which carnotite deposits in the Morrison formation have closer spacing, larger size and higher grades than those in adjoining areas."

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As can be seen on Plate 1 of the above publication, Martin Mesa lies directly west of the Uravan Mineral Belt. It is separated from this mineralized trend by the deep canyon of the Dolores River. The Club Mesa mining area included within this belt lies directly east of Martin Mesa across this canyon. Similarly the Long Peak mining area within the same belt is located south and east of Martin Mesa.

The Club Mesa mining area to the east includes the Shamrock Mines, the Club Mines, the Tramp Mines, the Bunker Lease and several producing properties of the United States Vanadium Company. Immediately to the north across the Dolores River lies the Atkinson Mesa Mining area. The Dolores group of mines located along the south margin of this Mesa includes the North Star, the Black Rock, the Cliff Dweller, the Ophir, the Bluebird, the Little Dick, and the Worcester mines. The Golden Cycle Corporation is operating through a deep 640-foot shaft from the top of Atkinson Mesa. The nearest producing mine to Martin Mesa on Carpenter Flats is located across Red Canyon. This is the Mal Pais Mine.

Structure

The Martin Mesa claims are located structurally on the northeast flank of Paradox Valley anticline. There is no evidence of local faulting and the beds dip gently to the northeast.

Stratigraphy

The Salt Wash sandstone member of the Morrison formation extends over the entire surface of Martin Mesa. Group 1 of the Martin Mesa claims covered by this report were staked such that their boundries extend in part out over pre-Morrison formations. The drill locations included on Plates 1 to 3 with this application are within the outcrop boundry of the Salt Wash sandstone member. The thickness of the Salt Wash sandstone with its mudstone partings varies from 90 to 260 feet. Eight drill holes were completed in and adjacent to the subject claims to obtain subsurface information on the lithology of the Salt Wash member. An interpretation of the drilling logs from these holes is shown on Plate 5 included with this rpport.

Four sandstone lenses were encountered during the drilling which could be correlated throughout most of the holes.

To escape the ambiguity involved in identifying these as rims, they will be referred to as the first, second, third and fourth sandstone lenses in sequence, from the top to the bottom of the holes involved. Using the favorability criteria of sandstone lense thickness, mudstone color, sandstone color and presence of carbonaceous material, the fourth or lower sandstone is the most attractive as a potential orebearing unit.

The fourth sandstone varies in thickness from 51 to 64 feet. The top of this sandstone unit was usually hard with a reddish cast. Within a few feet it changed into a light buff to grey sandstone. Limonitic speckling was encountered throughout much of this unit in all holes, with the quantity of limonite increasing in the lower part of the unit. The mudstone seams, pellets and buttons in the lower sandstone unit were predominately a light blue or bluish grey in color. Some grey mudstone and a relatively small amount of red mudstone were encountered. A slightly radioactive carbonaceous sandstone was encountered in one hole. Blue mudstone was encountered below the fourth sandstone unit in two of the holes.

The third sandstone unit was extremely variable in thickness and built up locally in two of the holes to re and 68 feet respectively. It will be noted, too, on the cross section of Plate 4 that the mudstone parting between the third and fourth sandstone pinches down to as little as four feet in two of the holes. Where such a thin parting is involved, it might be justified to combine the third and fourth sandstone units into a single lense. On hole 59 north, 48 west, a combined section of 109 feet could be obtained by combining the two. Where it attains thicknesses in excess of 50 feet the third sandstone unit is buff in color with limonitic speckling and contains an abundance of green and greenish grey mudstone seams and pellets. Laterally, the third sandstone unit grades into a reddish sandstone with red mudstone partings, where it decreases to less than 40 feet in thickness. The strongly lenticular nature of the third sandstone should make it a potential ore carrying horizon locally within the claims.

The second sandstone unit is the least attractive of the four as a potential ore bearing sandstone. In general, it is too thin to be considered a favorable sand. It's maximum thickness is 44 feet in only one hole. Laterally it grades into alternating red mudstones and reddish sandstones which are difficult to correlate in the section.

The uneroded portion of the first sandstone unit is a very friable, light brown to buff sandstone with locally strong limonitic speckling. It's thickness is variable due to erosion, with as much as 43 feet of continuous sandstone encountered in one hole. Where the second sand can be identified, the interval between the first and second sandstones varies greatly from as little as 30 feet to as much as 105 feet. Where the second sand unit cannot be positively identified the alternating red sandstone and red shale interval between the first and third sands attains as much as 140 feet.

Dr. Robert J. Wright, Chief of the Geologic Branch, Exploration Division, A. E. C., Grand Junction, Colorado, has commented in an article "Where to Look for Uranium, Engineering and Mining Journal, September, 1954, that sandstones which are lenticular and which are interbedded with shale and mudstone are considered more favorable than thick, clean, massive sandstones. He states that in western Colorado areas where sandstones of the Morrison formation vary in thickness along the outcrop, they are more favorable for ore than areas where the sandstones are uniform in thickness.

It is concluded from combining Dr. Wright's observations with the geologic criteria of favorability enumerated in U. S. G. S. Bulletin 988-B that the Salt Wash sandstone section present on the Martin Mesa claims contains a stratigraphy amenable to uranium mineralization in commercial concentrations.

Mineralization

Over 30 mineralized outcrops or prospect holes containing mineralized sandstone have been located on the northeast end of Martin Mesa on and adjacent to the subject claims. The larger ones of these are indicated on Plate 3. On the June Bug claim small stringers of carnotite immediately above bluish grey mudstone partings were observed in the basal sandstone of the Salt Wash near the northern boundry of the claim. However, the surface mineralization is not restricted to the basal sand unit. A sandstone outcrop tentatively corelated with Unit 3 of the subsurface of the claims is mineralized at a location 80 feet southeast of the southeast corner of the June Bug No. 1 claim. Carnotite stringers in a limonite speckled sandstone are underlain by 6 inches of dark grey shale. An estimated 30 tons of ore have been produced from prospects on claims adjacent to Group 1 of the Martin Mesa claims.

Benalan Mining Co.
1117 Washington
Golden, Colorado

Conclusions

The geologic reasons for wishing to explore Group 1 of the Martin Mesa claims are as follows:

(1) The claims are located on Martin Mesa along the margin of the Uravan mineral belt as presently defined.

(2) Martin Mesa is separated only from the Long Park mining area and the Club Mesa mining area, both contained within the Uravan mineral belt, by the deep canyon of the Dolores River.

(3) Substantial production is presently being obtained from mines of the Dolores group to the north across the Dolores River on Atkinson Mesa. The mines on Club Mesa to the east and Long Park to the southeast complete an arc of production around Martin Mesa.

(4) Examination of the Salt Wash sandstone member of the Morrison formation in both the surface and subsurface reveals a thick sandstone section with lithologic characteristics indicative of a favorable host rock for uranium ore deposition.

(5) There are a large number of occurrences of carnotite mineralization in sandstone outcrops, prospect pits and radio-active float sandstone which strongly suggests the potentiality of ore deposits for the area. A small amount of radio-active sandstone was encountered in one of the drill holes.

(6) The lower one-third of the Salt Wash sandstone appears to be the most favorable part of the section. From it's thickness, lithology and surface shows of mineralization it is concluded that an adequate exploration program for these claims will necessitate testing the entire section rather than restricting the drilling to shallow holes.

(d) Group 1 of the Martin Mesa claims is approximately 20 miles trucking distance from the United States Vanadium Corporation's mill in Uravan. About half of this distance is on Colorado State Highway 141 along the San Miguel and Dolores Rivers. The Atomic Energy Commission has constructed a bridge across the Dolores River at an old ford close to the base of Carpenter Flats. A graded and gravel-covered access road leads from the ford to the base of Carpenter Flats. Here the road divides and the A. E. C. has constructed two shelf roads, one of which leads up on Carpenter Flats and the other climbs a steep escarpment to the top of Martin Mesa. From this point about nine miles of a rough, bulldozed road has

been used for access to the Group 1 claims.

Martin Mesa is a U-shaped mesa divided into two parts by a narrow, deep canyon called Wildcat Canyon. This narrow access road has to go around the head of this canyon to reach the Group 1 claims. The Benalan Mining Company is at present engaged in building a road down the side of Wildcat Canyon to connect with the graded A. E. C. access road. This strip of road will be about two miles long and will shorten the route by about seven rough miles.

(e) Manpower, materials, supplies and equipment are in adequate and convenient supply. The towns of Uravan, Naturita and Nucla serve as natural supply centers for the uranium mining industry of this area. Camp water is hauled by tank truck from Naturita and drilling water, when necessary, is available from the Dolores River at the base of the Mesa. The Benalan camp is presently being supplied with electrical power by a gasoline-driven motor generator. There are no power lines near the Mesa.

5 - THE EXPLORATION PROJECT

(a) Uranium is that mineral to be explored, which is eligible for aid under the D. M. E. A. program.

(b) The work proposed to be done under the applied-for exploration project contract will consist of a drilling program on 100-foot centers over part of the four and a fraction claims included in this application. Plate 3 shows the proposed drill sites laid out on a 100-foot coordinate grid over the subject claims. As previously explained, Plate 3 is a depth-line map of the Morrison sandstone section present on the claims. A tabulation has been made of the anticipated total depth of each proposed drill hole as determined from this map. This tabulation and the total proposed drill footage is included with this application as Appendix A. It is proposed that 185 holes be drilled with a cumulative total of 28,219 feet for the project.

Such wildcat exploration drilling as has been done by the Company on these and other claims on Martin Mesa indicates that there is not an excessive amount of water in the subsurface sands. These holes have been drilled with a rotary air drill, using a Duclone sample

collector. Since this combination has worked very well on Martin Mesa during the preliminary drilling, it is proposed that rotary air drilling be used for the holes included in this application. This type of drilling is proposed for the following reasons:

(1) Speed and economy of dry-hole, non-core drilling.

(2) Dry ground which permits a high recovery of the cuttings by using a Duclone dust collector.

(3) Continuous sampling, augmented by radiometric logging will furnish adequate data for complete evaluation of any ore bodies discovered during the drilling and furnish adequate information for drilling on closer spacing in the more favorable ground.

(c) Work will start within 30 days and be completed within four months from the date of an exploration project contract.

(d) The Benalan Mining Company is a recently formed Pennsylvania corporation created for the purpose of exploring certain properties assigned to the Company for uranium. It is at present conducting preliminary mapping and wide spaced, wildcat drilling on other claims in the Martin Mesa area. In addition it is conducting a similar program on a block of claims near Canon City, Colorado for the purpose of obtaining data for a D. M. E. A. loan application on these properties. The Benalan Mining Company is also presently drilling on a claim on Monogram Mesa close to the old Joe Dandy Mine.

With the exception of the claim on Monogram Mesa, all of the properties in the Benalan Mining Company were assigned to it by W. Alan Stewart, then doing business under the name - Colorado Exploration Company. Mr. Stewart is now Vice-President and General Manager of the Benalan Mining Company and is directly responsible for the supervision of the proposed exploration project on Martin Mesa.

<u>Background on Supervisory Personnel</u>

Mr. W. Alan Stewart will be the chief geological engineer in charge of directing the exploration drilling project. He has a Doctor of Science degree in geology from the Colorado School of Mines and taught for five years in the geology department of that institution. During his teaching tenure he was also a consulting geologist. For example, during the 1950 field season he was resident consulting engineer for the Monsanto Chemical Company on a joint exploration project conducted by that company and the J. R. Simplot Company for phosphate in Idaho. This

project involved reconnaissance mapping, laying out a drilling program and supervising drilling operations for phosphate.

From June 1, 1952 to the present time he has done business under the name 'Colorado Exploration Company', a mining geophysical contract company. This Company has conducted geophysical surveys for the Colorado Fuel & Iron Corporation, the Bear Creek Mining Company, the Lewis Exploration Company and others. The Colorado Exploration Company has carried out uranium exploration programs on its own account since February 1953. These activities include ground radiometric surveying and geologic mapping, aerial scintillometer surveying, and drilling. In addition to these company activities, Mr. Stewart has acted as a consultant in the uranium field to a number of individuals and companies.

Mr. Robert D. Turley will serve as resident geological engineer on the project. Mr. Turley has had over a year's experience as resident geological engineer for the Dulaney Mining Company in the Slick Rock area of southwestern Colorado. Mr. Turley was responsible for exploration drilling in addition to his duties as a mining geologist in charge of underground mining operations. Mr. Turley has a degree in geological engineering from the Colorado School of Mines. He is presently in charge of the reconnaissance drilling operations now being conducted in other parts of Martin Mesa.

6 - ESTIMATE OF COSTS

(a) Independent Contracts - None

(b) Labor, Supervision, Consultants:

1 Chief Geological Engineer (3-month salary prorated on the basis of the estimated time and service he will devote directly to the performance of the work - @ $500/mo.)	$1,500.00
1 Resident Geological Engineer (3 months @ $575.00 per mo.) -	1,625.00
1 Surveyor-foreman (3 months @ $350.00 per mo.) -	350.00
2 Surveyor's Helpers (1 month @ $300.00 per mo.) -	600.00

Bonalan Mining Co.
1117 Washington Ave.
Golden, Colorado

1 Bulldozer Operator (2 month's @ $425.00 per mo.) -	$ 850.00
1 Superintendent Driller (2 2/3 mo. @ $525.00 per mo.) -	1,401.75
1 Driller (2 2/3 mo.@ $400.00 per mo.) -	1,066.67
2 Driller's Helpers (2 2/3 mo.@ $300.00 per mo.) -	1,600.00
	$ 8,993.42

(c) Operating Materials & Supplies:
(Fuel, Oil, etc.)

Automotive 50 miles per day for 66 working days (2600 mi. per vehicle for 2 vehicles) 5600 miles @ 3¢ per mile -	$	168.00
Drills: (56 days) Diesel Engine - 40 gal./day @ 17¢ gal. - Gas. Engine - 40 gal./day @ 28¢ gal. -		380.80 627.20
Bulldozer: 40 gal. per day @ 17¢ gal. (44 days) -		299.20
Water & Utility Truck: (2 trips per week x 12 weeks @ 50 mil. per trip) 1200 mi. @ 6¢ per mile -		72.00
Grease & Oil for both Dozer & Drills -		150.00
Butane for cooking & heating: (3 months @ $30.00 per month) -		90.00
Miscellaneous Items: Oil filters, air cleaners, etc. -		100.00
Water: (Included in mileage on vehicles) -		.00
Power: (Power plant - 10 gal/day - 27¢ per gal. for 90 days) -		243.00

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Golden, Colorado

Equipment costing less than $50.00:

Log sheets (1,000 @ 1¢ per sheet)	$ 10.00
Maps, paper, etc. (estimated)	50.00
Notebooks (estimated)	25.00
Misc. supplies (pencils, ink, etc.)	25.00
Paper for probe record (estimated)	25.00
Blue prints	50.00
Surface pipe for holes (185 holes @ 40¢)	74.00
Stakes (2x2x4') for markers & fillers (185 @ 48¢) -	88.80
Packing for holes (mineral wool)	10.00
	$ 2,488.00

(d) Operating Equipment:
(Suggested use allowance)

Automotive (1 jeep & 1 pickup truck) (5600 miles @ 5¢ per mile) -	280.00
Water Truck (12¢ pr. Mile for 1200 mi.)	144.00
Bulldozer (180 hrs. per mo. for 2 mo.)	4,320.00
Drills (75¢ pr. ft. x 28,219 ft.)	21,164.25
Bubble counter & probe	75.00
Power plant (90 days @ $1.00 pr. day)	90.00
	$26,073.25

(e) Rehabilitation & Repairs - None	.00
(f) New Bldgs., Improvements, Installations -	.00

(g) Miscellaneous:

Analytical Work (sample analyses)	$ 300.00
Radiometric Logging of Holes (includes moving in cost of $150.00 plus 5¢ pr. foot logged) -	1,560.95
Accounting (two days pr. week for 14 weeks @ $12.00/day - 2x14x12) -	336.00

Workmen's compensation:	$ 255.73
Insurance:	
Liability (physical damage & loss ins. on automotive & other equipment) -	379.29
Employer's FICA Payroll tax -	191.44
	$ 3,023.41
SUB-TOTAL	40,578.05

(h) Contingencies:
(Includes cost of labor for unavoidable delay time due to accidents & breakdowns, maintenance of equipment & breakage of items not covered by insurance; allowance for drilling wet ground not amenable to air drilling; allowance for core drilling in mineralized sections, etc.);

10% of $40,578.05 (sub-total)	4,057.81
TOTAL -	$ 44,635.86

COST SUMMARY -

Total Cost	$ 44,635.86
Total Footage	28,219
Cost per Foot	$ 1.58

7 - (a) Yes.

(b) The Benalan Mining Company owns two rotary air drills, one D-8 bulldozer, one water truck, two field vehicles, a radiation probe and other equipment aggregating a total initial value of $100,000.00. All of this equip-

Benalan Mining Co.
1117 Washington Ave.
Golden, Colorado

ment is to be allocated for use on the project. In addition the Company has trained and experienced geological engineers to supervise the project and any part of the Company's share of the costs not covered by use allowance on equipment will be paid out of it's treasury.

Benalan Mining Co.,
1117 Washington
Golden, Colorado

- APPENDIX A -

COORDINATES		DEPTH
62 N	45 E	197
"	46 E	193
"	47 E	190
"	48 E	149
"	49 E	139
"	50 E	129
"	51 E	129
"	52 E	129
"	53 E	107
"	54 E	108
"	55 E	100
"	56 E	89
"	57 E	87
"	58 E	93
"	59 E	75
"	60 E	85
"	61 E	92
"	62 E	97

COORDINATES		DEPTH
60 N	45 E	229
"	46 E	232
"	47 E	240
"	48 E	243
"	49 E	252
"	50 E	262
"	51 E	263
"	52 E	260
"	53 E	180
"	54 E	170
"	55 E	153
"	56 E	133
"	57 E	112
"	58 E	102
"	59 E	92
"	60 E	92
"	61 E	95
"	62 E	93

61 N	45 E	220
"	46 E	208
"	47 E	205
"	48 E	205
"	49 E	213
"	50 E	215
"	51 E	215
"	52 E	213
"	53 E	168
"	54 E	153
"	55 E	135
"	56 E	109
"	57 E	102
"	58 E	88
"	59 E	83
"	60 E	88
"	61 E	93
"	62 E	96

59 N	45 E	243
"	46 E	250
"	47 E	255
"	48 E	
"	49 E	265
"	50 E	
"	51 E	258
"	52 E	262
"	53 E	208
"	54 E	190
"	55 E	160
"	56 E	130
"	57 E	110
"	58 E	103
"	59 E	88
"	60 E	93
"	61 E	92
"	62 E	87

Benalan Mining Co.
1117 Washington Ave.
Golden, Colorado

- APPENDIX A -
(continued)

COORDINATES			DEPTH
58 N	45	E	
"	46	E	
"	47	E	
"	48	E	263
"	49	E	
"	50	E	261
"	51	E	253
"	52	E	242
"	53	E	203
"	54	E	184
"	55	E	154
"	56	E	129
"	57	E	109
"	58	E	102
"	59	E	88
"	60	E	94
"	61	E	88
"	62	E	84
57 N	45	E	252
"	46	E	250
"	47	E	258
"	48	E	252
"	49	E	254
"	50	E	253
"	51	E	241
"	52	E	202
"	53	E	173
"	54	E	152
"	55	E	130
"	56	E	108
"	57	E	104
"	58	E	99
"	59	E	88
"	60	E	83
"	61	E	81
"	62	E	79

COORDINATES			DEPTHS
56 N	45	E	240
"	46	E	198
"	47	E	208
"	48	E	207
"	49	E	218
"	50	E	223
"	51	E	214
"	52	E	175
"	53	E	148
55 N	45	E	187
"	46	E	184
"	47	E	182
"	48	E	173
"	49	E	172
"	50	E	160
"	51	E	178
"	52	E	140
"	53	E	143
"	54	E	132
54 N	45	E	172
"	46	E	168
"	47	E	145
"	48	E	138
"	49	E	138
"	50	E	142
"	51	E	144
"	52	E	119
"	53	E	119
"	54	E	128
53 N	45	E	163
"	46	E	148
"	47	E	139
"	48	E	127
"	49	E	119
"	50	E	119
"	51	E	132
"	52	E	128
"	53	E	117
"	54	E	125

Senalan Mining Co.
1117 Washington Ave.
Golden, Colorado

- APPENDIX A -
(continued)

COORDINATES		DEPTH
52 N	44 E	173
"	45 E	172
"	46 E	171
"	47 E	170
"	48 E	132
"	49 E	118
"	50 E	118
"	51 E	123
"	52 E	125
"	53 E	125
"	54 E	122
51 N	44 E	171
"	45 E	171
"	46 E	172
"	47 E	170
"	48 E	143
"	49 E	125
"	50 E	124
"	51 E	125
"	52 E	118
"	53 E	112
"	54 E	88
"	55 E	88
50 N	44 E	130
"	45 E	128
"	46 E	126
"	47 E	122
"	48 E	109
"	49 E	118
"	50 E	125
"	51 E	130
"	52 E	133
"	53 E	122
"	54 E	122
"	55 E	88

COORDINATES		DEPTH
49 N	47 E	102
"	48 E	105
"	49 E	112
"	50 E	123
"	51 E	127
"	52 E	131
"	53 E	132
"	54 E	129
"	55 E	110

TOTAL FOOTAGE - 28,219

Surname copy

Ching
Ellis
Hedges
Kiilsgaard
Selfridge
Johnson

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

MAY 31 1955

Mr. W. Alan Stewart
Vice President & General Manager
Benalan Mining Company
1117 Washington Avenue
Golden, Colorado

Re: Docket No. DMEA-3561 (Uranium)
Group 1, Martin Mesa claims
Montrose County, Colorado

Dear Mr. Stewart:

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

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

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

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

Sincerely yours,

C. O. Mittendorf (for)

Administrator

MChing/gla
5-26-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Ching

DMEA Field Team, Region III (2)

R.C.G.

DOCKET COPY

Ching
Ellis

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

May 26, 1955

Summary of Proposed Project

Object: Denial of application for an exploration project.

Docket No.: DMEA-3561

Commodity: Uranium

Applicant: Benalan Mining Company, a Pennsylvania corporation
1117 Washington Avenue
Golden, Colorado

Property: Four and a fraction lode claims; June Bug, June Bug No. 1, June Bug No. 2, Billie Jean No. 1, and June Bug Fraction, located in Sec. 26, T. 48 N., R. 18 W., N.M.P.M., Montrose County, Colorado. Applicant is the Lessee by assignment.

Date of application: November 1, 1954

Amount of application: $44,635.89

Work proposed: Drill 185 holes, totaling 28,219 feet, on a 100-foot grid pattern by means of rotary air drill, to test the Salt Wash member of the Morrison formation, at the following cost:

Labor, Supervision, Consultants	$8,993.42
Operating materials and supplies	2,488.00
Operating equipment	26,073.25
Miscellaneous	3,023.41
Contingencies	4,057.81
Total	$44,635.89
Government participation @ 75%	$33,476.92

Field Team Report: April 20, 1955, Glen Walker, USBM, and D. A. Brew, USGS.

In the nearby Dolores Bench area and in the entire Uravan area the uppermost or fourth rim is the most productive unit of the Salt Wash. On the subject property most of the fourth rim has been eroded and only a remnant of it remains on the highest part of the claims.

Field Team report (cont'd)

The primary target of the proposed exploration is the lowermost or first rim which would be semi-favorable, based on Geological Survey criteria. Production from the first rim on three neighboring properties to the east and north amounted to 52, 53 and 225 tons, respectively, of uranium-vanadium ore of average grade. One of the properties may contain several thousand tons of minable ore. Outcroppings of the first and higher rims on the subject property are widespread, but such outcroppings are poorly mineralized. Seven holes drilled by the Applicant on the property penetrated all four rims of the Salt Wash but were completely barren. It is concluded that any deposits on the property are very likely to be few in number, small in size and erratically distributed. It is recommended that the application be denied.

Commodity Committee Members' Comments:

Geological Survey: T. H. Kiilsgaard for R. D. Trace, May 20, 1955.

Concurs with Field Team recommendation to deny the application based on: (1) Known deposits in the area are small and spotty, (2) Geologic criteria do not suggest the possibility of finding significant quantities of ore, and (3) the Applicant's drilling has found no ore.

Bureau of Mines: John E. Crawford, May 25, 1955.

Concurs with the Field Team recommendation that the application be denied.

Rare and Miscellaneous Metals Division: Michael Ching, May 24, 1955.

While many large deposits have been found in the Dolores, Club, and Long Park Groups to the north, east, and southeast, the subject property is located in an area where the most productive ore horizon, the uppermost rim of the Salt Wash, has been largely eroded. The lowermost rim of the Salt Wash appears to be the most favorable horizon on this property and its immediate surrounding area. Deposits found to date in this horizon have been small with the possible exception of that found by the Barton Uranium Company on its property about 1-1/4 miles north of the subject property. Exposures on the property and the results of 8 drill holes are not encouraging to an exploration project.

Conclusions and Recommendations:

Poorly mineralized outcrops, negative results of previous drilling, and the unimpressive record of nearby properties, leads to the conclusion that an exploration project is not warranted. It is recommended that the application be denied.

Ernest Wm. Ellis

Ernest Wm. Ellis

Admr.

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

May 26, 1955

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Field Team report (cont'd)

The primary target of the proposed exploration is the lowermost or first rim which would be semi-favorable, based on Geological Survey criteria. Production from the first rim on three neighboring properties to the east and north amounted to 52, 53 and 225 tons, respectively, of uranium-vanadium ore of average grade. One of the properties may contain several thousand tons of minable ore. Outcroppings of the first and higher rims on the subject property are widespread, but such outcroppings are poorly mineralized. Seven holes drilled by the Applicant on the property penetrated all four rims of the Salt Wash but were completely barren. It is concluded that any deposits on the property are very likely to be few in number, small in size and erratically distributed. It is recommended that the application be denied.

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Concurs with the Field Team recommendation that the application be denied.

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Ernest Wm. Ellis

Ernest Wm. Ellis

MChing/gla
5-25-55
cc to: Admr.'s Reading File
Operating Committee
Docket (original)
Code 700
Mr. Ching

Apr. Com. 700

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

May 26, 1955

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Reviewed by
DMEA OPERATING COMMITTEE
5-27-55
(date)

Field Team report (cont'd)

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Bureau of Mines: John E. Crawford, May 25, 1955.

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Ernest Wm. Ellis
Ernest Wm. Ellis

MChing/gla
5-25-55
cc to: Admr.'s Reading File
Operating Committee
Docket (original)
Code 700
Mr. Ching

5/27/55 gla

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 26 1955

May 26, 1955

Memorandum

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

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

Subject: Report of Examination, DMEA Docket 3561, Benalan Mining Company, Group I, (Martin Mesa claims), Montrose County, Colorado

I have reviewed the Field Team report of examination, Benalan Mining Company, DMEA Docket 3561, and have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We concur with the recommendation of the Field Team that the application be denied.

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

John E. Crawford
John E. Crawford

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

Bureau of the Mines
Solid Minerals Administration
RECEIVED

May 26, 1955

Memorandum

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

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

Subject: Report of Examination, DMEA Docket 3561, Benalan Mining Company, Group I, (Martin Mesa claims), Montrose County, Colorado

I have reviewed the Field Team report of examination, Benalan Mining Company, DMEA Docket 3561, and have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

We concur with the recommendation of the Field Team that the application be denied.

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

John E. Crawford

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

May 26, 1955

Memorandum

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

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

Subject: Report of Examination, DMEA Docket 3561, Benalan Mining Company, Group I, (Martin Mesa claims), Montrose County, Colorado

I have reviewed the Field Team report of examination, Benalan Mining Company, DMEA Docket 3561, and have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

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John E. Crawford

5/23/55 gla

IN REPLY REFER TO:

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

May 20, 1955

Re: DMEA-3561
Benalan Mining Co.
Martin Mesa Claims
Montrose Co., Colo.
$44,635.86 - Uranium

Memorandum

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

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

Subject: Review of Field Team report

I concur with the Field Team in recommending that the subject application be denied.

The denial is based on: 1) known deposits in the area are small and spotty, 2) geologic criteria do not suggest the possibility of finding significant quantities of ore and 3) company drilling has found no ore.

T. H. Kilsgaard
FOR: R. D. Trace

IN REPLY REFER TO:

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

May 20, 1955

Re: DMEA-3561
Benalan Mining Co.
Marcin Mesa Claims
Montrose Co., Colo.
$44,035.80 - Uranium

Memorandum

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

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

Subject: Review of Field Team report

I concur with the Field Team in recommending that the subject application be denied.

The denial is based on: 1) known deposits in the area are small and spotty, 2) geologic criteria do not suggest the possibility of finding significant quantities of ore and 3) company drilling has found no ore.

R. D. Trace

RDTrace:hlm
G-5/20/55

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

IN REPLY REFER TO:

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

May 20, 1955

Re: DMEA-3561
Benaim Mining Co.
Martin Mesa Claims
Montrose Co., Colo.
$44,435.86 - Uranium

Memorandum

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

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

Subject: Review of Field Team report

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The denial is based on: 1) known deposits in the area are small and spotty, 2) geologic criteria do not suggest the possibility of finding significant quantities of ore and 3) company drilling has found no ore.

R. D. Trace

RDTrace:hlm
G-5/20/55

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

IN REPLY REFER TO:

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

May 20, 1955

Re: DMEA-3561
Benalen Mining Co.
Martin Mesa Claims
Montrose Co., Colo.
$44,035.00 - Uranium

Memorandum

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

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

Subject: Review of Field Team report

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The denial is based on: 1) known deposits in the area are small and spotty, 2) geologic criteria do not suggest the possibility of finding significant quantities of ore and 3) company drilling has found no ore.

R. D. Trace

RD/Trace:hlm
G-5/20/55

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

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

224 New Customhouse
Denver 2, Colorado

May 10, 1955

Memorandum

To: Chairman of the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Report of Examination, DMEA Docket 3561 (Uranium), Benalan Mining Company, Group I, (Martin Mesa claims), Montrose County, Colorado

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

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

W. M. Traver

W. M. Traver

E. N. Harshman

E. N. Harshman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
5-20-55
(date)

/DMEA
Date Rec'd.

APR 26 1955

BUREAU OF MINES
Denver, Colorado

TRANSMITTED
MAY 10 1955

Region III

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
April 25, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: John F. Shaw, Supervising Mining Engineer

Subject: Examination Report, DMEA 3561, (Uranium) Benalan Mining Company, Group 1, Martin Mesa claims, Montrose County, Colorado.

Enclosed are the original and ten copies of a "Summary, Conclusions, and Recommendations" by Glen Walker, mining engineer, and D. A. Brew, geologist, and the original and ten copies of an engineering report by Glen Walker.

The Benalan Mining Company applied for Government assistance in the amount of $44,635.86 to drill 185 holes totaling 28,219 feet. The property was examined on March 30, 1955. The examining team concluded there was little likelihood of discovering a significant amount of uranium as the result of the proposed work. It is, therefore, recommended that this application for exploration assistance be denied.

John F. Shaw

John F. Shaw

Enclosures

cc 10
DMEA 3561
Chron

JFS/cm

Reviewed by
DMEA OPERATING COMMITTEE
5-20-55
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

MAY 1 2 1955

DMEA 3561, Group 1, Martin Mesa Claims

Benalan Mining Company

Montrose County, Colorado

Uranium

Glen Walker, Mining Engineer
Bureau of Mines

D. A. Brew, Geologist
Geological Survey

April 20, 1955

Reviewed by
DMEA OPERATING COMMITTEE
5-20-55
(Date)

DMEA 3561

GROUP 1, MARTIN MESA CLAIMS
BENALAN MINING COMPANY
MONTROSE COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By Glen Walker
Mining Engineer
Bureau of Mines

D. A. Brew
Geologist
Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE

5-20-55
(date)

TRANSMITTED
MAY 10 1955

DMEA 3561

GROUP 1, MARTIN MESA CLAIMS
BENALAN MINING COMPANY
MONTROSE COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Glen Walker and D. A. Brew

The Benalan Mining Company of Golden, Colorado, applied for Government assistance in the exploration of four and a fraction claims in Montrose County, Colorado, for uranium. They proposed to drill 185 dry holes on a 100- by 100-foot grid. The aggregate footage of 28,219 feet was estimated to cost $44,635.86.

A DMEA field examination was made on March 30, 1955, by W. P. Williams, R. L. Boardman and D. A. Brew of the Geological Survey and Glen Walker, Bureau of Mines, accompanied by Robert D. Turley for the company.

It was concluded that the property does not warrant Government assistance as evidenced by the poorly mineralized outcrops and the seven completely barren holes previously drilled by the company.

It is recommended that the application be denied.

DMEA 3561

GROUP 1, MARTIN MESA CLAIMS
BENALAN MINING COMPANY
MONTROSE COUNTY, COLORADO

Engineering Report

By Glen Walker
Mining Engineer
Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
5-20-55
(date)

DMEA 3561

GROUP 1, MARTIN MESA CLAIMS
BENALAN MINING COMPANY
MONTROSE COUNTY, COLORADO

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DMEA 3561

GROUP 1, MARTIN MESA CLAIMS
BENALAN MINING COMPANY
MONTROSE COUNTY, COLORADO

ENGINEERING REPORT

By Glen Walker

INTRODUCTION

The Benalan Mining Company of Golden, Colorado, applied for Government assistance in the exploration for uranium ore on four and a fraction unpatented mining claims in sec. 26, T. 48 N., R. 18 W., New Mexico principal meridian in Montrose County, Colorado.

The work outlined in the application consisted essentially of drilling 185 dry rotary holes totaling 28,219 feet on a 100- by 100-foot grid over a portion of the four and a fraction claims. It was estimated this work would cost $44,635.86, or $1.58 per foot.

An examination of the property was made by a Region III DMEA examining team on March 30, 1955, in company with Robert D. Turley, geologist for the company, and Everett Ayers, lessor of the claims.

The investigations indicated that the geologic probability of an ore discovery does not warrant Government participation in the exploration of this property.

ACKNOWLEDGEMENTS

Robert D. Turley, geologist, and Everett Ayers, lessor, acted as guides and offered certain pertinent information to the examining field team composed of Robert Boardman, D. A. Brew and W. P. Williams

of the Geological Survey and Glen Walker of the Bureau of Mines. The Atomic Energy Commission office in Grand Junction, Colorado, was consulted about the application.

LOCATION, TOPOGRAPHY AND CLIMATE

The four and a fraction claims are on Martin Mesa in sec. 26, T. 48 N., R. 18 W., New Mexico principal meridian, about 20 miles northwest of Uravan, Colorado, in Montrose County. Grand Junction, the nearest rail point, is about 90 miles north of the property.

The subject land extends from the top of the mesa to part way down the southeast side of Wildcat Canyon which is tributary to the Dolores River. The difference in elevation is about 650 feet marked by abrupt cliffs of Salt Wash rims with more gentle intervening slopes.

The climate here is typical of the Colorado Plateau semi-arid region. Most of the 10-15 inches of annual precipitation comes as snow storms and heavy early summer rains.

HISTORY AND PRODUCTION

These claims were located in 1952 by Everett Ayers who excavated three shallow cuts into the ore horizon from rim exposures. The Benalan Mining Company drilled 7 dry rotary holes spaced about 100 feet apart across the western-most claim, June Bug No. 2. No ore production is claimed or recorded from the property.

OWNERSHIP AND EXTENT

The property consists of four and a fraction unpatented mining claims said to have been located by Everett Ayers and recorded in the Montrose County Courthouse. No time was consumed in checking this

statement after it became evident that the Government would not be involved with the legal status of the property.

A copy of the lease between the locator and the Colorado Exploration Company of Golden, Colorado, is included with the application; also an assignment of this lease from W. Alan Stewart d. b. a. the Colorado Exploration Company to Benalan Mining Company.

DESCRIPTION OF DEPOSITS

The rocks exposed on the property consist of interbedded sandstone and mudstone strata of the Salt Wash member of the Jurassic Morrison formation. This series of rocks contain at least four sandstone rims considered to be potential ore horizons; however, by far the largest proportion of Plateau production has come from the top rim. On this property this rim was examined over a distance exceeding 2,000 feet and at only 3 widely separated places was there any uranium mineralization noted. At none of these exposures was the mineralized rock over 6 inches thick, nor did it have any considerable horizontal extent. None of the excavations exceed 6 feet in length along the ore horizon at which point the thickness of the mineralized rock decreased to an inch or less.

Of the 7 holes drilled across the June Bug No. 2 claim on a staggered line 300-400 feet north of the south end line, 5 are reported to have cut all 4 Salt Wash sandstones. This drilling is said to have indicated that the top sandstone is thickening in an easterly direction.

MINEABLE ORE RESERVES

From the exposures, no mineable reserves are indicated.

PRESENT STATUS

There is no mining or milling equipment on the property.

The three superficial excavations were made by the locator of the claims, Everett Ayers, and reveal only meager indications of ore. None of these openings exceed 6 feet in length from the outcrop, with from a few inches to less than an inch of mineralized rock.

In 1 of the 7 holes drilled on the June Bug No. 2 it is reported: "a slightly radioactive carbonaceous sandstone was encountered".

There has been no substantial production of ore within about a mile of the property.

PROJECT PROPOSALS

The applicant proposed drilling 185 dry rotary holes about 150 feet deep for a total footage of 28,219 feet. The holes were to cover about one-half of the area of the four and a fraction claims and have a 100- by 100-foot grid pattern. This work was to be done with company owned equipment. The total cost of the applicant's program was estimated at $44,635.86, or $1.58 per foot.

Because the application for exploration assistance is denied, no cost estimate was made; however, the costs submitted by the applicant appear about 25 percent high.

CONCLUSIONS

The main favorable geologic aspect noted on this property is the more than average thickness of the sandstone "rim" usually considered the most productive ore horizon. The other favorable

factors associated with uranium ore deposits in the Plateau region are for the most part lacking.

It appears the outcrop of the usual potential ore formation has been unsuccessfully prospected as evidenced by the three excavations made in it. Likewise, the drilling at some distance from the outcrop has been unrewarding as regards ore and indicated only meager favorable information.

RECOMMENDATIONS

The geologic probability of a worthwhile discovery on this property appears slight and does not warrant Government participation. It is, therefore, recommended that the application for exploration assistance be denied.

/cm

IN REPLY REFER TO:

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

DMEA
Date Rec'd
MAY 6 1955

BUREAU OF MINES
Denver, Colorado

May 5, 1955

TRANSMITTED
MAY 10 1955

Memorandum

To: Field Team, Region III

From: E. N. Harshman

Subject: DMEA Docket 3561 (Uranium), Benalan Mining Co., Group 1, Martin Mesa claims, Paradox District, Montrose County, Colorado

Transmitted herewith are 10 copies of a geologic report by D. A. Brew covering a field examination of the subject property.

On and near the subject claims small, roughly tabular bodies of uranium ore, ranging in size from less than a ton to about 100 tons, are erratically distributed in the first (lowermost) and second rims of the Salt Wash member of the Morrison formation. On Martin Mesa the total production from the first rim is about 350 short tons. Geologic features of the first rim indicate slight possibility of its being host to any deposit much over 100 tons in size, and there is no evidence that commercial ore exists on the claims it is proposed to explore. Relatively small production from other nearby claims on Martin Mesa further indicate that any ore bodies which might be found on the claims will be small.

Brew concludes that the chance of finding a significant amount of uranium ore on this property is poor and, therefore, recommends that the application be denied.

I concur with this conclusion and recommendation.

D R MacLaren
for E. N. Harshman
Member, Field Team

Enclosures (10)

ENHacLaren:arh

Reviewed by
DMEA OPERATING COMMITTEE
5-20-55
(date)

MINERAL DEPOSITS
DMEA
RECEIVED
MAY 4 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

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

April 25, 1955

Memorandum

To: E. N. Harshman

From: W. P. Williams

Subject: DMEA 3561, Benalan Mining Co., Group 1, Martin Mesa claims, Paradox District, Montrose County, Colorado

Transmitted herewith are eleven copies of a geologic report by D. A. Brew covering the field examination of the above referenced property.

The lowermost sandstone beds of the Salt Wash member of the Jurassic-Morrison formation are the primary target of the proposed exploration. Those beds according to known geologic criteria do not appear favorable for the occurrence of a uranium ore body large enough to pay the costs of the exploration. Study of the area in general shows that if deposits are present they are probably few in number, small in size, and erratically distributed. Brew concludes that the chances of finding a significant uranium ore body are small. He recommends, and I concur, that the application for DMEA assistance be denied.

Mr. Louis Garbrecht of the Atomic Energy Commission, Grand Junction Operations Office, was asked for his help and advice in evaluating the property.

We are returning herewith the brochure covering this application.

W P Williams

W. P. Williams
Geologist

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
5-20-55
(GRC)

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS McKAY, SECRETARY

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

DMEA 3561, Benalan Mining Co., Group 1, Martin Mesa claims, Paradox District, Montrose County, Colorado

Uranium

Geologic Report

by

D. A. Brew
U. S. Geological Survey

April 1955

Reviewed by
DMEA OPERATING COMMITTEE
5-20-55
(date)

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Exploration	8
Conclusions and recommendations	9

ILLUSTRATIONS

Figure 1. Index map of part of Colorado Plateau showing location of Benalan Mining Co. Property, Montrose County, Colorado

2. Map showing location of June Bug and Billie Jean claims, Martin Mesa, Benalan Mining Co., Montrose County, Colorado

INTRODUCTION AND SUMMARY

The Benalan Mining Company of 1117 Washington Avenue, Golden, Colorado, has applied to the Defense Minerals Exploration Administration for a loan to explore for uranium on four and a fraction mining claims on Martin Mesa, Paradox Mining district, Montrose County, Colo. (fig. 1). The claims proposed for exploration are the June Bug, June Bug No. 1, June Bug No. 2, Billie Jean No. 1, and June Bug Fraction; all owned by Everett and June Ayers, and leased to W. Alan Stewart, doing business as the Colorado Exploration Company; rights under that lease are assigned to the Benalan Mining Company, first by a letter agreement and then by an instrument of general assignment.

The claims included in the application were examined on March 30, 1955, by D. A. Brew, R. L. Boardman, and W. P. Williams, geologists, U. S. Geological Survey, and Glenn Walker, engineer, U. S. Bureau of Mines, accompanied by Robert Turley, representing the Benalan Mining Company, and Everett Ayers, one of the lessors of the claims. The claims are located approximately in the center of sec. 26, T. 48 N., R. 17 W., New Mexico principal meridian. The claims can be reached by about 6 miles of new access road that joins Colorado Highway 141 at the new Dolores River bridge about 9 miles northwest of Uravan, Colo. (fig. 1). The last three miles of the access road are steep and rough, but probably are passable by truck under all but very severe weather conditions.

The Benalan Mining Company proposes 28,219 feet of rotary drilling on the claims to be explored. The total cost of the proposed exploration, including technical supervision, surveying, assaying, and incidentals was estimated by the applicants to be $44,635.86, or $1.58 per foot of drilling.

A field examination of the claims in question indicates that little possibility exists of finding uranium deposits of sufficient size to justify the cost of exploration. If deposits are present in the area they are very likely few in number, small in size, and erratically distributed. The aggregate reserves of the area are believed to be very small. This appraisal is based on both geologic features and past exploration in and near the area. These factors are discussed in detail in the remainder of this report.

It is recommended that this application be denied.

GEOLOGY

Martin Mesa is located on the northeast flank of the Paradox Valley anticline. The rocks in the area strike about N. 45° W. and dip approximately 3° NE. towards the axis of the San Miguel syncline.

The rocks exposed in the vicinity of the claims consist, from oldest to youngest, of the Jurassic Entrada, Summerville and Morrison formations. The Entrada ("Slick Rim") and Summerville formations have no apparent relationship to the known uranium deposits in the area and are not considered in the proposed exploration program. The upper (Brushy Basin) member of the Morrison formation has been completely eroded in the area under consideration, as has most of the upper part of the underlying Salt Wash member. The thickest section of Salt Wash exposed on the claims totals about 270 feet.

The lowermost (first) sandstone rims of the Salt Wash are the primary target of the proposed exploration. The first rim is about 50 to 65 feet thick. The lower 25 feet of the first rim is a non-lenticular, continuous, massive, cliff-forming, light brown and light gray sandstone that is crossbedded in part. Abundant limonite stain is present near the bottom of the bed and some copper stain is also present. Very few mudstone splits occur within the massive sandstone. The mudstone underlying the sandstone is predominantly red but some blue-green is locally present.

Overlying the aforementioned massive sandstone is a persistent red and blue-green mudstone lens which is 1 to 3 feet thick.

The upper part of the first rim is a sandstone 25 to 35 feet thick which overlies the persistent mudstone lens described above. This sandstone is very similar to the one at the base of the first rim, differing only in a greater number of thin mudstone splits and less massive character.

Very little carbonaceous material is present in the first rim. Based on criteria derived from D. B. Weir's Geologic Guides to Prospecting for Carnotite Deposits of the Colorado Plateau, U. S. Geological Survey Bulletin 988-B, 1952, this first rim would be classed as semifavorable for ore deposits. The second rim is separated from the first by 5 to 30 feet of predominantly red mudstone. The sandstone of the second rim is very lenticular, and ranges from 10 to 40 feet in thickness. It contains more mudstone splits than does the first rim. The third rim is a thin, discontinuous, poorly developed sandstone which is interbedded with a thick section of predominantly red mudstone. The uppermost (fourth) rim is the most productive unit in the nearby Dolores Bench area--as it is in the entire Uravan area to the southeast. In the area under consideration most of the fourth rim has been eroded and only a remnant of it remains on the highest part of the claims. It is a fairly massive, light-brown sandstone.

ORE DEPOSITS

There has been no production of uranium-vanadium ores from the June Bug, June Bug No. 1, June Bug No. 2, Billie Jean No. 1 and June Bug Fraction claims. According to Atomic Energy Commission figures 52 tons of ore averaging 0.26 percent U_3O_8 and 1.69 percent V_2O_5 were produced from the first rim on the Buckhorn claim, which is immediately southeast of the June Bug No. 1 claim. About three-quarters of a mile north of the area proposed for exploration is the Wildcat No. 2 deposit, which is also in the first rim. It has produced about 53 tons of ore averaging 0.21 percent U_3O_8 and 2.20 percent V_2O_5. About half a mile north of the Wildcat No. 2 are the Barton Uranium Company's Alta and Point Enterprise mines. This company reports that in January 1955, about 225 tons of ore averaging 0.35 percent U_3O_8 and 1.90 percent V_2O_5 were produced from an ore body in the first rim on the Alta claim. Mining has been started on another ore body which, based on data provided by Barton Uranium Company, may contain several thousand tons of mineable ore. Except for that deposit, all ore bodies that have been found to date in the first rim in this area are much smaller.

Three rim shows of mineralized material were noted on the claims examined. In the south central part of the June Bug claim a small layer of mineralized material occurs in a sandstone that is probably second rim (fig. 2). The mineralized part of the outcrop is less than 0.5 foot thick and is about 4.0 feet long. Readings of about five times background were obtained from the outcrop with geiger counter. Two shows of mineralized rock were noted on the rim at the northwest end of the June Bug, June Bug Fraction and June Bug No. 2 claims (fig. 2). Both of these occurrences are about in the middle of the first rim, located approximately at the persistant mudstone split. At both places the mineralized float was somewhat more radioactive than the outcrop; some of the float registered about three times background, but the outcrop itself registered about twice background at best. The mineralized rock at both outcrops is gray in color with little carnotite visible. The deposits are less than 0.5 feet in thickness and extend along the rim for less than 3 feet.

As the aforementioned production figures indicate, the deposits found in the first rim in the Martin Mesa area generally contain less than 250 tons of ore. The deposits on and near the claims included in this application appear to be even smaller in size.

The Buckhorn deposit contained ore-grade material in a thin, roughly tabular mass which is reported to have formed a roll at one place. One mineralized log was also reported. The ore was unusually high in vanadium, the vanadium to uranium ratio being about 10 to 1.

The typical mineral assemblage is the usual carnotite-vanadium clay type; most of the mineralized rock is dark gray with some yellow and green streaks. Some secondary copper minerals also are present.

EXPLORATION

The applicants drilled seven holes on the June Bug No. 2 and June Bug Fraction claims prior to filing the DMEA application. One of the seven holes penetrated what is described in the brochure as "a slightly radioactive carbonaceous sandstone." Results of drilling done as assessment work are not available. The applicants are currently drilling on Martin Mesa, southwest of the area included in the application. They stated that this drilling has discovered ore-grade material in the first rim but that offset drilling has shown that the ore bodies are small and can be projected only a few feet beyong the discovery holes.

Twenty-eight drill holes on the nearby Eve and Height claims (north and east of the area examined) were gamma-ray logged by the U. S. Geological Survey during the summer and fall of 1954. None of the holes were found to have penetrated mineralized material of ore grade, and only 3 holes were weakly mineralized.

The applicants propose to do 28,219 feet of rotary drilling at a cost of $44,635.86 on the four and a fraction claims included in their application. The drilling would consist of 185 holes, from 75 to 265 feet deep, on 100-foot centers. Samples would be taken with a cyclone type sample collector and all holes would be probed with a geiger tube.

It seems unlikely that this proposed exploration program would lead to the discovery of sufficient ore reserves to justify DMEA participation. The geologic features of the first rim are such that there is little possibility of its being host to any deposit much over 100 tons in size and, at present, there is no evidence that commercial ore is present on the claims proposed for exploration. The relatively small production from other claims in the adjacent parts of Martin Mesa is a further indication that the reserves contained in the claims concerned are not significant.

CONCLUSIONS AND RECOMMENDATIONS

Uranium deposits on and near the claims examined occur in the first (lowermost) and second rims of the Salt Wash member of the Jurassic Morrison formation. The deposits are small, erratically distributed, roughly tabular bodies, which range in size from less than a ton to perhaps 100 tons or more. To date total production from the first rim of the Salt Wash on Martin Mesa totals about 350 short tons.

The applicants propose to search for ore deposits by 28,219 feet of rotary drilling, which is estimated to cost $44,635.86. The drilling would consist of 185 holes, 75 to 265 feet deep, on 100-foot centers. Geologic features indicate that there is little possibility of discovering ore reserves commensurate with the cost of exploration; it is therefore recommended that the application be denied.

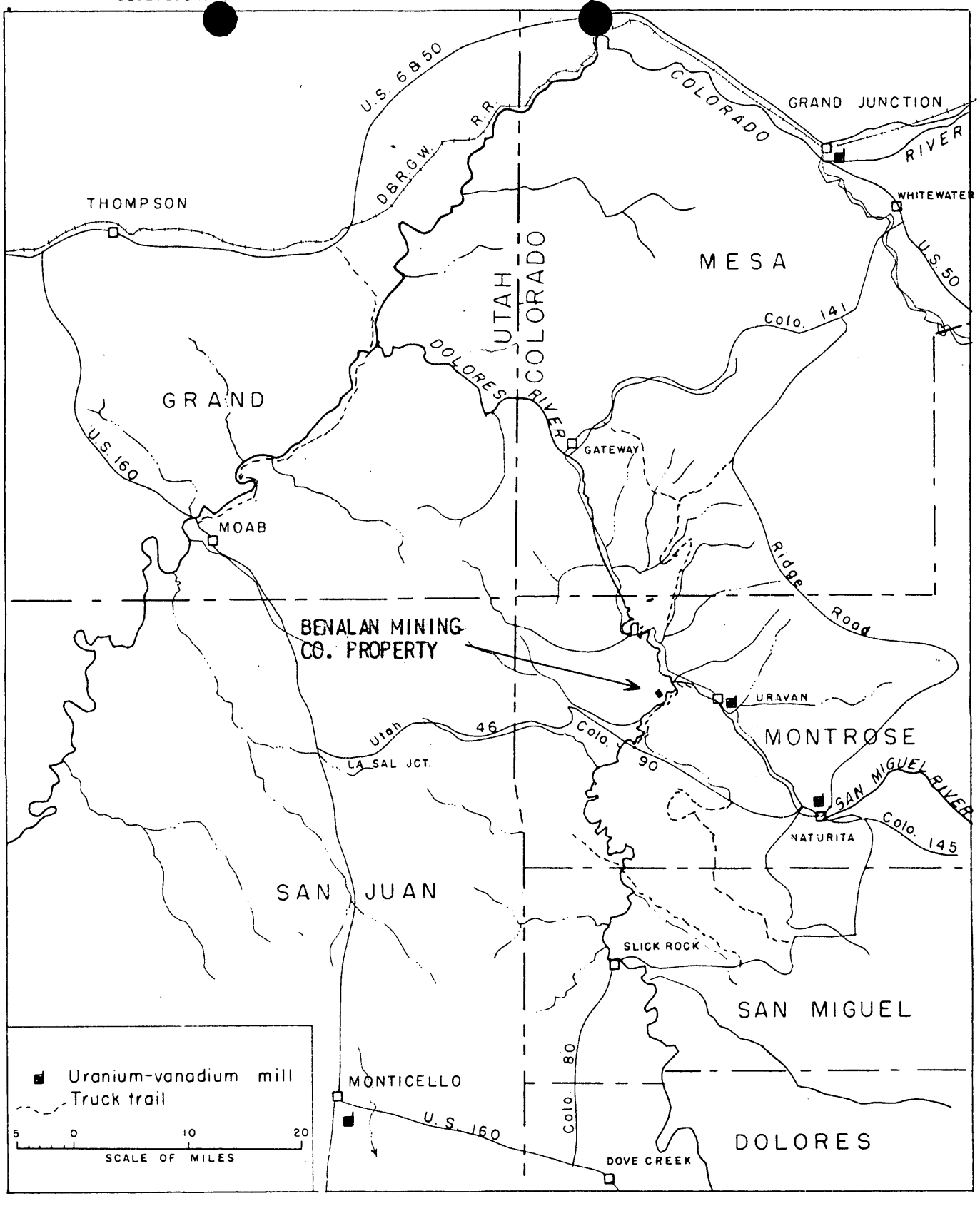
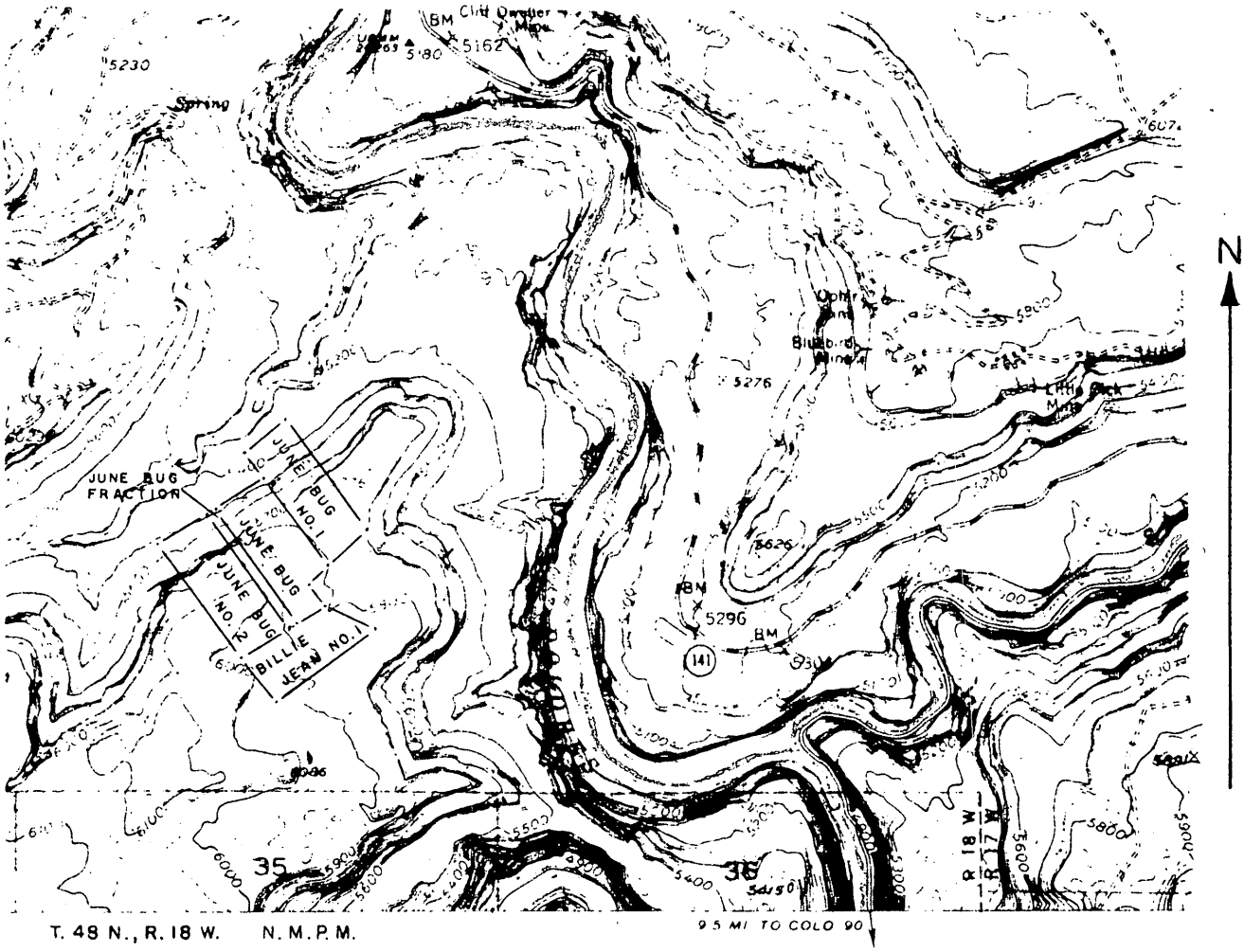


Figure 1. INDEX MAP OF PART OF COLORADO PLATEAU SHOWING LOCATION OF BENALAN MINING CO. PROPERTY, MONTROSE COUNTY, COLORADO



1 ½ 0 1 MILE

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

Note: Claim boundaries taken from applicants map

Note: Land lines and topography from U.S. Geological Survey quadrangle map Red Canyon

Figure 2. MAP SHOWING LOCATION OF JUNE BUG AND BILLIE JEAN CLAIMS, MARTIN MESA, BENALAN MINING CO., MONTROSE COUNTY, COLORADO

11/22/54 gla

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

224 New Customhouse
Denver 2, Colorado

November 17, 1954

Memorandum

To: A. Brokaw

From: DMEA Field Team, Region IV

Subject: DMEA Docket 3561 (Uranium), Benalan Mining Company
Group 1, Martin Mesa claims, Montrose County, Colorado

Enclosed is a copy of the subject application and copies of memoranda from R. D. Trace of the U. S. Geological Survey and John E. Crawford of the U. S. Bureau of Mines with transmittal letter from the Chairman, DMEA Operating Committee, concerning this application.

Please review the application to determine if a field examination of the property is warranted. The Andrews and Andrews property referred to in the letter from the Operating Committee was inspected by R. L. Boardman from your office on May 26, 1953. A copy of the Report of Examination was transmitted to R. P. Fischer on June 23, 1953; therefore, this report is available to you for use in the evaluation of this application. Also, the Atomic Energy Commission should be contacted to obtain any knowledge they may have as to uranium occurrances on the property.

If a field examination is indicated, please make the customary examination and prepare a formal report. If sufficient information is available to justify denial without a field examination, a memorandum report will suffice. If a field examination indicates that the application will be approved, please notify the Executive Officer so that arrangements can be made to have a Bureau of Mines engineer make the customary examination.

John F. Shaw
John F. Shaw
For W. H. King

D.R. Macharen
for A. H. Koschmann
DMEA Field Team, Region IV

Enclosures
RDB:mn
cc: DMEA Docket 3561
W.M.Traver
Sec. to the Oper. Comm. (2)
A.H.Koschmann
Chron.

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

224 New Customhouse
Denver 2, Colorado

November 17, 1954

Memorandum

To: A. Brokaw

From: DMEA Field Team, Region IV

Subject: DMEA Docket 3561 (Uranium), Benalan Mining Company
Group 1, Martin Mesa claims, Montrose County, Colorado

Enclosed is a copy of the subject application and copies of memoranda from R. D. Trace of the U. S. Geological Survey and John E. Crawford of the U. S. Bureau of Mines with transmittal letter from the Chairman, DMEA Operating Committee, concerning this application.

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John F. Shaw
For W. H. King

D.R. Mackson
for A. H. Koschmann
DMEA Field Team, Region IV

Enclosures
RDB:mn
cc: DMEA Docket 3561
W.M.Traver
Sec. to the Oper. Comm. (2)
A.H.Koschmann
Chron.

700

me copy

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

Ellis
Hedges
Newcomb
Selfridge
Johnson

NOV 15 1954

Mr. W. Alan Stewart
Vice-President & General Manager
Benedan Mining Company
1117 Washington Avenue
Golden, Colorado

Re: Docket No. DMEA-3561 (Uranium)
Group 1, Martin Mesa claims
Montrose County, Colorado

Dear Mr. Stewart:

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

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

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

Sincerely yours,

E. O. Mittendorf

Administrator

EWEllis/gla
11-15-54
cc to: Admr. Reading File
Docket
Code 700
DMEA Field Team, Region IV (2)

700

Surname copy

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

Ellis
Selfridge
Fahrner

NOV 15 1954

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

Re: Docket No. DMEA-3561 (Uranium)
Denalan Mining Company
Group 1, Martin Mesa claims
Montrose County, Colorado

Dear Mr. King:

The captioned application is referred to Region IV Field Team for a field investigation (if deemed necessary) and recommendation. A copy of the application was retained by your office.

Enclosed are copies of memoranda dated November 10, 1954, from R. D. Trace and John E. Crawford, Geological Survey and Bureau of Mines Uranium Commodity Committee members, respectively.

You will note that the proposed project is approximately a half mile southeast of a previously proposed project which was denied on October 2, 1953. That application was under the name of Andrews and Andrews, Docket No. DMEA-2631. From a study of both applications it does not appear that the subject application is to explore ground more favorable than that covered by Docket No. DMEA-2631. However, with the thought that possibly more information of that particular area has been obtained since the Andrews and Andrews application was denied, it seems advisable to refer the subject application to the field.

Sincerely yours,

George C. Selfridge By EST

Chairman, Operating Committee

EWEllis/gla 11-15-54
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700

Enclosures 4

APPROVED:

V. H. Hedges By EST
Member, Bureau of Mines

E. L. Newcomb By EST
Member, Geological Survey

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

November 10, 1954

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
NOV 12 1954

Memorandum

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

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

Subject: DMEA Docket No. 3561, Benalan Mining Company, 1117 Washington Avenue, Golden, Colorado

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

We wish to point out that the program as outlined in the attached application appears to be excessively staffed, and the holes which the Benalan Mining Co. wishes to drill are probably unnecessarily closely spaced.

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

John E. Crawford

John E. Crawford

Attachment

Q. Cl. 11-12-54

IN REPLY REFER TO:

Defense Minerals Administration
RECEIVED
NOV 12 1954

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

November 10, 1954

Memorandum

REVIEW OF APPLICATION DMEA-3561 (Uranium)

To: E. W. Ellis, Defense Minerals Exploration Administration
From: R. D. Trace, U. S. Geological Survey
Applicant's name and address: Benalan Mining Company, 1117 Washington Avenue, Golden, Colorado
Name of property: Group 1, Martin Mesa Claims
Location of property: Montrose County, Colorado
Summary of applicant's proposal:
Rotary drill on 100-foot centers, 185 holes totalling 28,219 feet.
Sources of information on applicant's property:
Docket of DMEA 2631
Comments:

The proposed project is about half a mile southeast of a previously denied project (DMEA 2631). The major purpose of DMEA 3561 and 2631 (as well as the geology) are the same, namely, to test the lowermost massive sandstone of the Salt Wash member. I know of no discoveries nor find any evidence in the DMEA 3561 docket that have changed the conclusions given in the Field Team report of June 1953 as follows: "Because deposits in the 1st (lowermost), 2nd, and 3rd rims are likely to be small and spotty, and because of the improbability of finding new commercial ore bodies in any of the bottom three sandstone rims, it is recommended that the DMEA (2631) application . . . be denied."

As for exploring the 4th or topmost (main ore-bearing sandstone) rim, the seven holes already drilled by the applicant appear to have been a fair test of the major part of this lense that underlies the applicant's claims.

RECOMMENDATIONS: Perhaps the Grand Junction Survey and Commission offices should be queried regarding any late developments in the area, particularly regarding their evaluation of the so-called 1st rim. If the opinion given in the Field Team report for DMEA 2631 is essentially unchanged, I recommended the application be denied.

Bob Trace

R. D. Trace

IN REPLY REFER TO:

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 12 1954

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

November 10, 1954

extra copy

Memorandum

REVIEW OF APPLICATION DMEA-3561 (Uranium)

To: E. W. Ellis, Defense Minerals Exploration Administration
From: R. D. Trace, U. S. Geological Survey
Applicant's name and address: Benalan Mining Company, 1117 Washington Avenue, Golden, Colorado
Name of property: Group 1, Martin Mesa Claims
Location of property: Montrose County, Colorado
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Docket of DMEA 2631
Comments:

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As for exploring the 4th or topmost (main ore-bearing sandstone) rim, the seven holes already drilled by the applicant appear to have been a fair test of the major part of this lenses that underlies the applicant's claims.

RECOMMENDATIONS: Perhaps the Grand Junction Survey and Commission offices should be queried regarding any late developments in the area, particularly regarding their evaluation of the so-called 1st rim. If the opinion given in the Field Team report for DMEA 2631 is essentially unchanged, I recommend the application be denied.

RDTrace:hlm
G-11/10/54
CC: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641

R. D. Trace

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

November 8, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

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

DMEA - 3561 Benalan Mining Co.

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

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

November 8, 1954
Subject: DMEA-3561
Re: Exploration Assistance

Benalan Mining Co.
1117 Washington Ave
Golden, Colorado

Gentlemen:

The receipt of your application dated November 1, 1954 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3561 and referred to the Rare and Miscellaneous Metals Division.

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

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

60932

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 5 - 1954

224 New Customhouse
Denver 2, Colorado

November 5, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Application of Benalan Mining Company (Uranium) June Bug, June Bug No. 1, June Bug No. 2, Billie Jean No. 1, and June Bug Fraction, Montrose County, Colorado

Enclosed are three copies of an application for exploration assistance in the amount of $44,635.86 submitted by Benalan Mining Company.

John F. Shaw
for W. H. King

Enclosures

RECEIVED

APPLICATION FOR AID IN AN EXPLORATION PROJECT

Pursuant to DMEA Order 1,
Under the Defense Production Act of
1950 - As Amended

By
BENALAN MINING COMPANY
1117 Washington Ave.
Golden, Colorado

-

November 1, 1954

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

NOV 5 - 1954

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. 3561
Metal or Mineral Uranium
Date Received
Estimated Cost $44,636
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Benalan Mining Company
1117 Washington Avenue
Golden, Colorado
(Incorporated in the State of Pennsylvania - see attached)

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

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

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

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

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

(see attached application)

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

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

(*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

(*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 .....

.....

(*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 ..... days and be completed within ..... 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 [x] 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 November 1, 1954, 195__

BENALAN MINING COMPANY
(Applicant)

By W. Alan Stewart
W. Alan Stewart - Vice-President & General Manager

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

Benalan Mining Co.
1117 Washington Ave.
Golden, Colorado

RECEIVED

D M E A LOAN APPLICATION

1 - NAME OF APPLICANT

(a) Benalan Mining Company
P. O. Box 509
Golden, Colorado

(b) A Pennsylvania Corporation

(c) President	Mr. J. R. Wylie, Jr. Benedum-Trees Building Pittsburgh 22, Pa.
Vice-President	Mr. Paul G. Benedum Benedum-Trees Building Pittsburgh 22, Pa.
Vice-President	Mr. O. D. Robinson Benedum-Trees Building Pittsburgh 22, Pa.
Vice-President and General Manager	Dr. W. Alan Stewart 1117 Washington Avenue Golden, Colorado
Secretary	Mr. David D. Johnson Benedum-Trees Building Pittsburgh 22, Pa.
Treasurer	Mr. Edward Kelley Benedum-Trees Building Pittsburgh 22, Pa.

(d) - - - -

2 - GENERAL

3 - APPLICANT'S PROPERTY RIGHTS

(a) The property consists of four and a fraction lode claims located in Section 26, Township 48 North, Range 18 West, New Mexico Principal Meridian, the Vixen Mining District, Montrose County, Colorado.

(See location map - Plate 4 - in folder) The four and a fraction claims included in the proposed exploration project are collectively referred to hereunder as Group 1 of Martin Mesa claims. Claim names are:

1 - June Bug
2 - June Bug No. 1
3 - June Bug No. 2
4 - Billie Jean No. 1
5 - June Bug Fraction

(b) None

(c) Lessee

(d) Lease from property owner to W. Alan Stewart, dba Colorado Exploration Company. Rights under this lease assigned to Benalan Mining Company, first by a letter agreement and then by an instrument of general assignment. (copies of all three documents included with application)

(e) - - - -

(f) Property consists of unpatented mining claims. The following documents are of record in the Recorder's office at Montrose, Montrose County, Colorado:

Initial Location Certificates:

Name of Claim	Locator	Date of Location	Book	Page
June Bug	Everett Ayers and June Ayers	10-24-52	349	500
June Bug No. 1	"	10-24-52	349	501
June Bug No. 2	"	10-24-52	349	501
Billie Jean No. 1	"	10-27-52	349	495
June Bug Fraction	"	6-17-54	380	71

Amended Location Certificates in Conformance with Public Law 250 - 83rd. Congress:

Name of Claim	Locator	Date/Posting Amended Notice of Location	Book	Page
June Bug	Everett Ayers & June Ayers	12- 1-53	366	277
June Bug No. 1	"	12- 1-53	366	278

June Bug No. 2	Everett Ayers and June Ayers	12- 1-53	366	279
Billie Jean No. 1	"	12- 1-53	366	265

Amended Location Certificates Resulting from a Transit & Stadia Survey of the Claims:

Name of Claim	Locator	Date of Amended Location	Book	Page
June Bug	Everett Ayers and June Ayers	6-20-54	388	3
June Bug No. 1	"	6-20-54	388	4
June Bug No. 2	"	6-20-54	388	5
Billie Jean No. 1	"	6-20-54	388	2

Affidavit of Value of Labor & Improvements:

June Bug

June Bug No. 1

June Bug No. 2

Billie Jean No. 1

(Expenditure made at the expense of the Colorado Exploration Company in behalf of the claim owners; filed for record June 28, 1954, Book 374, Page 258 (Reception #294661)

4 - PHYSICAL DESCRIPTION

(a) No mining operations have been or are now being conducted upon the land. There are no existing mine workings or production facilities. The exploration work performed previous to this application by the Colorado Exploration Company was for two purposes.

Some exploration drilling was undertaken to satisfy assessment work requirements.

Benalan Mining Co.
1117 Washington Ave.
Golden, Colorado

All other exploration work performed on these claims was for the purpose of obtaining data for use in this D M E A application. The following operations were performed in gathering this data:

(1) The claims were resurveyed using a transit and stadia and amended location notices were prepared and recorded. During the resurvey it was noted that the June Bug and the June Bug No. 2 claims were over-size in width. The June Bug Fraction was therefore located to cover the excess ground.

(2) A structure contour map was prepared on the surface of the shale immediately underlying the base of the Salt Wash sandstone member of the Morrison formation. This structure contour map is included with this application as Plate 1. In preparing this map a structure contour map was first prepared on the top of the Entrada sandstone. The top of the Entrada has been exposed by erosion around three sides of the claims and was readily mapped with a plane table and alidade. The predominently shaly section between the top of the Entrada and the base of the Salt Wash sandstone was measured at a number of places during the plane table survey. The thicknesses obtained were superimposed on the Entrada contour map to obtain a contour map whose configuration is that of the bottom of the basal sandstone of the Salt Wash member of the Morrison formation.

(3) A coordinate grid was surveyed over the claims and proposed drill sites on 100-foot centers were staked. The elevation of the individual drill sites were determined by an altimeter survey. The surface elevations were then contoured to give a topographic map, included with this application as Plate 2.

(4) The data from the structure contour map (Plate 1) was combined with the topographic map (Plate 2) to prepare a depth line map, showing the thickness of the Salt Wash sandstone member throughout the claims. This map is included with the application as Plate 3. From the depth line map it was possible to calculate the thickness of Salt Wash at each of the proposed drill sites. These thicknesses are tabulated in Appendix A and have been totaled to give the anticipated footage involved in the proposed exploration drilling project.

Six of the drill sites on the June Bug No. 2 claim were drilled to obtain information on the lithology of the Salt Wash in the subsurface, the purpose being to evaluate the section, using the geologic criteria for favorability enumerated in U. S. Geological Survey Bulletin 988-B, Geologic Guides to Prospecting for Carnotite Deposits on Colorado Plateau by Doris Blackman Weir, 1952. The results of this drilling will be fully described under Part C of this section.

(b) There is no current production from any of the claims involved, nor is there any recorded past production from Group 1 of Martin Mesa claims. As shown on Plate 3, there are two old prospects, one on June Bug No. 1 and one on the June Bug. A small amount of ore may possibly have been shipped from these prospects but there is no available information as to who opened these prospects or any ore shipped from them.

(c) Geologic Features:

General Setting

Martin Mesa is located within the old Vixen Mining District, more recently included within the Paradox District as designated by the Atomic Energy Commission in 1952. Martin Mesa is located along the northeast flank of the Paradox salt anticline. It is separated from Club Mesa and Long Park to the east and the southeast by the deep canyon of the Dolores River. At it's confluence with the San Miguel River the Dolores River turns to the northwest and it's canyon divides Martin Mesa from Atkinson Mesa to the north. The southwest boundry of Martin Mesa is the steep escarpment of Paradox Valley. On the northwest Martin Mesa is separated from Carpenter Flats by Red Canyon.

The claims lie on the margin of a zone of uranium mineralization known as the Uravan mineral belt. R. P. Fischer and L. S. Hilpert have commented concerning this belt in the United States Geological Survey Bulletin 988-A, Geology of the Uravan Mineral Belt, 1952, as follows:

> "The name Uravan mineral belt is applied to a narrow elongated area in southwestern Colorado in which carnotite deposits in the Morrison formation have closer spacing, larger size and higher grades than those in adjoining areas."

As can be seen on Plate 1 of the above publication, Martin Mesa lies directly west of the Uravan Mineral Belt. It is separated from this mineralized trend by the deep canyon of the Dolores River. The Club Mesa mining area included within this belt lies directly east of Martin Mesa across this canyon. Similarly the Long Peak mining area within the same belt is located south and east of Martin Mesa.

The Club Mesa mining area to the east includes the Shamrock Mines, the Club Mines, the Tramp Mines, the Bunker Lease and several producing properties of the United States Vanadium Company. Immediately to the north across the Dolores River lies the Atkinson Mesa Mining area. The Dolores group of mines located along the south margin of this Mesa includes the North Star, the Black Rock, the Cliff Dweller, the Ophir, the Bluebird, the Little Dick, and the Worcester mines. The Golden Cycle Corporation is operating through a deep 640-foot shaft from the top of Atkinson Mesa. The nearest producing mine to Martin Mesa on Carpenter Flats is located across Red Canyon. This is the Mal Pais Mine.

Structure

The Martin Mesa claims are located structurally on the northeast flank of Paradox Valley anticline. There is no evidence of local faulting and the beds dip gently to the northeast.

Stratigraphy

The Salt Wash sandstone member of the Morrison formation extends over the entire surface of Martin Mesa. Group 1 of the Martin Mesa claims covered by this report were staked such that their boundries extend in part out over pre-Morrison formations. The drill locations included on Plates 1 to 3 with this application are within the outcrop boundry of the Salt Wash sandstone member. The thickness of the Salt Wash sandstone with its mudstone partings varies from 90 to 260 feet. Eight drill holes were completed in and adjacent to the subject claims to obtain subsurface information on the lithology of the Salt Wash member. An interpretation of the drilling logs from these holes is shown on Plate 5 included with this report.

Four sandstone lenses were encountered during the drilling which could be correlated throughout most of the holes.

To escape the ambiguity involved in identifying these as rims, they will be referred to as the first, second, third and fourth sandstone lenses in sequence, from the top to the bottom of the holes involved. Using the favorability criteria of sandstone lense thickness, mudstone color, sandstone color and presence of carbonaceous material, the fourth or lower sandstone is the most attractive as a potential orebearing unit.

The fourth sandstone varies in thickness from 51 to 64 feet. The top of this sandstone unit was usually hard with a reddish cast. Within a few feet it changed into a light buff to grey sandstone. Limonitic speckling was encountered throughout much of this unit in all holes, with the quantity of limonite increasing in the lower part of the unit. The mudstone seams, pellets and buttons in the lower sandstone unit were predominately a light blue or bluish grey in color. Some grey mudstone and a relatively small amount of red mudstone were encountered. A slightly radioactive carbonaceous sandstone was encountered in one hole. Blue mudstone was encountered below the fourth sandstone unit in two of the holes.

The third sandstone unit was extremely variable in thickness and built up locally in two of the holes to re and 68 feet respectively. It will be noted, too, on the cross section of Plate 4 that the mudstone parting between the third and fourth sandstone pinches down to as little as four feet in two of the holes. Where such a thin parting is involved, it might be justified to combine the third and fourth sandstone units into a single lense. On hole 59 north, 48 west, a combined section of 109 feet could be obtained by combining the two. Where it attains thicknesses in excess of 50 feet the third sandstone unit is buff in color with limonitic speckling and contains an abundance of green and greenish grey mudstone seams and pellets. Laterally, the third sandstone unit grades into a reddish sandstone with red mudstone partings, where it decreases to less than 40 feet in thickness. The strongly lenticular nature of the third sandstone should make it a potential ore carrying horizon locally within the claims.

The second sandstone unit is the least attractive of the four as a potential ore bearing sandstone. In general, it is too thin to be considered a favorable sand. It's maximum thickness is 44 feet in only one hole. Laterally it grades into alternating red mudstones and reddish sandstones which are difficult to correlate in the section.

The uneroded portion of the first sandstone unit is a very friable, light brown to buff sandstone with locally strong limonitic speckling. It's thickness is variable due to erosion, with as much as 43 feet of continuous sandstone encountered in one hole. Where the second sand can be identified, the interval between the first and second sandstones varies greatly from as little as 30 feet to as much as 105 feet. Where the second sand unit cannot be positively identified the alternating red sandstone and red shale interval between the first and third sands attains as much as 140 feet.

Dr. Robert J. Wright, Chief of the Geologic Branch, Exploration Division, A. E. C., Grand Junction, Colorado, has commented in an article "Where to Look for Uranium, Engineering and Mining Journal, September, 1954, that sandstones which are lenticular and which are interbedded with shale and mudstone are considered more favorable than thick, clean, massive sandstones. He states that in western Colorado areas where sandstones of the Morrison formation vary in thickness along the outcrop, they are more favorable for ore than areas where the sandstones are uniform in thickness.

It is concluded from combining Dr. Wright's observations with the geologic criteria of favorability enumerated in U. S. G. S. Bulletin 988-B that the Salt Wash sandstone section present on the Martin Mesa claims contains a stratigraphy amenable to uranium mineralization in commercial concentrations.

Mineralization

Over 30 mineralized outcrops or prospect holes containing mineralized sandstone have been located on the northeast end of Martin Mesa on and adjacent to the subject claims. The larger ones of these are indicated on Plate 3. On the June Bug claim small stringers of carnotite immediately above bluish grey mudstone partings were observed in the basal sandstone of the Salt Wash near the northern boundry of the claim. However, the surface mineralization is not restricted to the basal sand unit. A sandstone outcrop tentatively corelated with Unit 3 of the subsurface of the claims is mineralized at a location 80 feet southeast of the southeast corner of the June Bug No. 1 claim. Carnotite stringers in a limonite speckled sandstone are underlain by 6 inches of dark grey shale. An estimated 30 tons of ore have been produced from prospects on claims adjacent to Group 1 of the Martin Mesa claims.

Benalan Mining Co.
1117 Washington
Golden, Colorado

Conclusions

The geologic reasons for wishing to explore Group 1 of the Martin Mesa claims are as follows:

(1) The claims are located on Martin Mesa along the margin of the Uravan mineral belt as presently defined.

(2) Martin Mesa is separated only from the Long Park mining area and the Club Mesa mining area, both contained within the Uravan mineral belt, by the deep canyon of the Dolores River.

(3) Substantial production is presently being obtained from mines of the Dolores group to the north across the Dolores River on Atkinson Mesa. The mines on Club Mesa to the east and Long Park to the southeast complete an arc of production around Martin Mesa.

(4) Examination of the Salt Wash sandstone member of the Morrison formation in both the surface and subsurface reveals a thick sandstone section with lithologic characteristics indicative of a favorable host rock for uranium ore deposition.

(5) There are a large number of occurrences of carnotite mineralization in sandstone outcrops, prospect pits and radio-active float sandstone which strongly suggests the potentiality of ore deposits for the area. A small amount of radio-active sandstone was encountered in one of the drill holes.

Where?

(6) The lower one-third of the Salt Wash sandstone appears to be the most favorable part of the section. From it's thickness, lithology and surface shows of mineralization it is concluded that an adequate exploration program for these claims will necessitate testing the entire section rather than restricting the drilling to shallow holes.

(d) Group 1 of the Martin Mesa claims is approximately 20 miles trucking distance from the United States Vanadium Corporation's mill in Uravan. About half of this distance is on Colorado State Highway 141 along the San Miguel and Dolores Rivers. The Atomic Energy Commission has constructed a bridge across the Dolores River at an old ford close to the base of Carpenter Flats. A graded and gravel-covered access road leads from the ford to the base of Carpenter Flats. Here the road divides and the A. E. C. has constructed two shelf roads, one of which leads up on Carpenter Flats and the other climbs a steep escarpment to the top of Martin Mesa. From this point about nine miles of a rough, bulldozed road has

collector. Since this combination has worked very well on Martin Mesa during the preliminary drilling, it is proposed that rotary air drilling be used for the holes included in this application. This type of drilling is proposed for the following reasons:

(1) Speed and economy of dry-hole, non-core drilling.

(2) Dry ground which permits a high recovery of the cuttings by using a Duclone dust collector.

(3) Continuous sampling, augmented by radiometric logging will furnish adequate data for complete evaluation of any ore bodies discovered during the drilling and furnish adequate information for drilling on closer spacing in the more favorable ground.

(c) Work will start within 30 days and be completed within four months from the date of an exploration project contract.

(d) The Benalan Mining Company is a recently formed Pennsylvania corporation created for the purpose of exploring certain properties assigned to the Company for uranium. It is at present conducting preliminary mapping and wide spaced, wildcat drilling on other claims in the Martin Mesa area. In addition it is conducting a similar program on a block of claims near Canon City, Colorado for the purpose of obtaining data for a D. M. E. A. loan application on these properties. The Benalan Mining Company is also presently drilling on a claim on Monogram Mesa close to the old Joe Dandy Mine.

With the exception of the claim on Monogram Mesa, all of the properties in the Benalan Mining Company were assigned to it by W. Alan Stewart, then doing business under the name - Colorado Exploration Company. Mr. Stewart is now Vice-President and General Manager of the Benalan Mining Company and is directly responsible for the supervision of the proposed exploration project on Martin Mesa.

Background on Supervisory Personnel

Mr. W. Alan Stewart will be the chief geological engineer in charge of directing the exploration drilling project. He has a Doctor of Science degree in geology from the Colorado School of Mines and taught for five years in the geology department of that institution. During his teaching tenure he was also a consulting geologist. For example, during the 1950 field season he was resident consulting engineer for the Monsanto Chemical Company on a joint exploration project conducted by that company and the J. R. Simplot Company for phosphate in Idaho. This

project involved reconnaissance mapping, laying out a drilling program and supervising drilling operations for phosphate.

From June 1, 1952 to the present time he has done business under the name 'Colorado Exploration Company', a mining geophysical contract company. This Company has conducted geophysical surveys for the Colorado Fuel & Iron Corporation, the Bear Creek Mining Company, the Lewis Exploration Company and others. The Colorado Exploration Company has carried out uranium exploration programs on its own account since February 1953. These activities include ground radiometric surveying and geologic mapping, aerial scintillometer surveying, and drilling. In addition to these company activities, Mr. Stewart has acted as a consultant in the uranium field to a number of individuals and companies.

Mr. Robert D. Turley will serve as resident geological engineer on the project. Mr. Turley has had over a year's experience as resident geological engineer for the Dulaney Mining Company in the Slick Rock area of southwestern Colorado. Mr. Turley was responsible for exploration drilling in addition to his duties as a mining geologist in charge of underground mining operations. Mr. Turley has a degree in geological engineering from the Colorado School of Mines. He is presently in charge of the reconnaissance drilling operations now being conducted in other parts of Martin Mesa.

6 - ESTIMATE OF COSTS

(a) Independent Contracts - None

(b) Labor, Supervision, Consultants:

1 Chief Geological Engineer (3-month salary prorated on the basis of the estimated time and service he will devote directly to the performance of the work - @ $500/mo.)	$1,500.00
1 Resident Geological Engineer (3 months @ $575.00 per mo.) -	1,625.00
1 Surveyor-Foreman (1 months @ $350.00 per mo.) -	350.00
2 Surveyor's Helpers (1 month @ $300.00 per mo.) -	600.00

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Golden, Colorado

1 Bulldozer Operator (2 month's @ $425.00 per mo.) -	$ 850.00
1 Superintendent Driller (2 2/3 mo. @ $525.00 per mo.) -	1,401.75
1 Driller (2 2/3 mo.@ $400.00 per mo.) -	1,066.67
2 Driller's Helpers (2 2/3 mo.@ $300.00 per mo.) -	1,600.00
	$ 8,993.42

(c) Operating Materials & Supplies:
(Fuel, Oil, etc.)

Automotive 50 miles per day for 66 working days (2800 mi. per vehicle for 2 vehicles) 5600 miles @ 3¢ per mile -		$ 168.00
Drills: (56 days) Diesel Engine - 40 gal./day @ 17¢ gal. -		380.80
Gas. Engine - 40 gal./day @ 28¢ gal. -		627.20
Bulldozer: 40 gal. per day @ 17¢ gal. (44 days)	-	299.20
Water & Utility Truck: (2 trips per week x 12 weeks @ 50 mil. per trip) 1200 mi. @ 6¢ per mile	-	72.00
Grease & Oil for both Dozer & Drills	-	150.00
Butane for cooking & heating: (3 months @ $30.00 per month)	-	90.00
Miscellaneous Items: Oil filters, air cleaners, etc.	-	100.00
Water: (Included in mileage on vehicles)	-	.00
Power: (Power plant - 10 gal/day - 27¢ per gal. for 90 days)	-	243.00

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Golden, Colorado

Equipment costing less than $50.00:

Log sheets (1,000 @ 1¢ per sheet)	$ 10.00
Maps, paper, etc. (estimated)	50.00
Notebooks (estimated)	25.00
Misc. supplies (pencils, ink, etc.)	25.00
Paper for probe record (estimated)	25.00
Blue prints	50.00
Surface pipe for holes (185 holes @ 40¢)	74.00
Stakes (2x2x4') for markers & fillers (185 @ 48¢) -	88.80
Packing for holes (mineral wool)	10.00
	$ 2,488.00

(d) Operating Equipment:
(Suggested use allowance)

Automotive (1 jeep & 1 pickup truck) (5600 miles @ 5¢ per mile) -	280.00
Water Truck (12¢ pr. Mile for 1200 mi.)	144.00
Bulldozer (180 hrs. per mo. for 2 mo.)	4,320.00
Drills (75¢ pr. ft. x 28,219 ft.)	21,164.25
Babble counter & probe	75.00
Power plant (90 days @ $1.00 pr. day)	90.00
	$26,073.25

(e) Rehabilitation & Repairs - None	.00
(f) New Bldgs., Improvements, Installations -	.00

(g) Miscellaneous:

Analytical Work (sample analyses)	$ 300.00
Radiometric Logging of Holes (includes moving in cost of $150.00 plus 5¢ pr. foot logged) -	1,560.95
(h) Accounting (two days pr. week for 14 weeks @ $12.00/day - 2x14x12) -	336.00

Benalan Mining Co.,
1117 Washington Ave.
Golden, Colorado

Workmen's compensation:	$ 255.73
Insurance:	
Liability (physical damage & loss ins. on automotive & other equipment) -	379.29
Employer's FICA Payroll tax -	191.44
	$ 3,023.41
SUB-TOTAL	40,578.05

(h) Contingencies:
(Includes cost of labor for unavoidable delay time due to accidents & breakdowns, maintenance of equipment & breakage of items not covered by insurance; allowance for drilling wet ground not amenable to air drilling; allowance for core drilling in mineralized sections, etc.);

10% of $40,578.05 (sub-total)	4,057.81
TOTAL -	$ 44,635.86

COST SUMMARY -

Total Cost	$ 44,635.86
Total Footage	28,219
Cost per Foot	$ 1.58

7 - (a) Yes.

(b) The Benalan Mining Company owns two rotary air drills, one D-8 bulldozer, one water truck, two field vehicles, a radiation probe and other equipment aggregating a total initial value of $100,000.00. All of this equip-

Benalan Mining Co.
1117 Washington Ave.
Golden, Colorado

ment is to be allocated for use on the project. In addition the Company has trained and experienced geological engineers to supervise the project and any part of the Company's share of the costs not covered by use allowance on equipment will be paid out of it's treasury.

Benalan Mining Co.,
1117 Washington
Golden, Colorado

- APPENDIX A -

COORDINATES		DEPTH
62 N	45 E	197
"	46 E	193
"	47 E	190
"	48 E	149
"	49 E	139
"	50 E	129
"	51 E	129
"	52 E	129
"	53 E	107
"	54 E	108
"	55 E	100
"	56 E	89
"	57 E	87
"	58 E	83
"	59 E	75
"	60 E	85
"	61 E	92
"	62 E	97
61 N	45 E	220
"	46 E	208
"	47 E	205
"	48 E	205
"	49 E	213
"	50 E	215
"	51 E	215
"	52 E	213
"	53 E	168
"	54 E	153
"	55 E	135
"	56 E	109
"	57 E	102
"	58 E	88
"	59 E	83
"	60 E	88
"	61 E	93
"	62 E	96

COORDINATES		DEPTH
60 N	45 E	229
"	46 E	232
"	47 E	240
"	48 E	243
"	49 E	252
"	50 E	262
"	51 E	263
"	52 E	260
"	53 E	180
"	54 E	170
"	55 E	153
"	56 E	133
"	57 E	112
"	58 E	102
"	59 E	92
"	60 E	92
"	61 E	95
"	62 E	93
59 N	45 E	243
"	46 E	250
"	47 E	255
"	48 E	
"	49 E	265
"	50 E	
"	51 E	258
"	52 E	262
"	53 E	208
"	54 E	190
"	55 E	160
"	56 E	130
"	57 E	110
"	58 E	103
"	59 E	88
"	60 E	93
"	61 E	92
"	62 E	87

Benalan Mining Co.
1117 Washington Ave.
Golden, Colorado

- APPENDIX A -
(continued)

COORDINATES		DEPTH
58 N	45 E	
"	46 E	
"	47 E	
"	48 E	263
"	49 E	
"	50 E	261
"	51 E	253
"	52 E	242
"	53 E	203
"	54 E	184
"	55 E	154
"	56 E	129
"	57 E	109
"	58 E	102
"	59 E	88
"	60 E	94
"	61 E	88
"	62 E	84
57 N	45 E	252
"	46 E	250
"	47 E	258
"	48 E	252
"	49 E	254
"	50 E	253
"	51 E	241
"	52 E	202
"	53 E	173
"	54 E	152
"	55 E	130
"	56 E	108
"	57 E	104
"	58 E	99
"	59 E	88
"	60 E	83
"	61 E	81
"	62 E	79

COORDINATES		DEPTHS
56 N	45 E	240
"	46 E	198
"	47 E	208
"	48 E	207
"	49 E	218
"	50 E	223
"	51 E	214
"	52 E	175
"	53 E	148
55 N	45 E	187
"	46 E	184
"	47 E	182
"	48 E	173
"	49 E	172
"	50 E	180
"	51 E	178
"	52 E	140
"	53 E	143
"	54 E	132
54 N	45 E	172
"	46 E	168
"	47 E	145
"	48 E	138
"	49 E	138
"	50 E	142
"	51 E	144
"	52 E	119
"	53 E	119
"	54 E	128
53 N	45 E	163
"	46 E	148
"	47 E	139
"	48 E	127
"	49 E	119
"	50 E	119
"	51 E	132
"	52 E	128
"	53 E	117
"	54 E	125

Benalan Mining Co.
1117 Washington Ave.
Golden, Colorado

- APPENDIX A -
(continued)

COORDINATES		DEPTH
52 N	44 E	173
"	45 E	172
"	46 E	171
"	47 E	170
"	48 E	132
"	49 E	118
"	50 E	118
"	51 E	123
"	52 E	125
"	53 E	125
"	54 E	122
51 N	44 E	171
"	45 E	171
"	46 E	172
"	47 E	170
"	48 E	143
"	49 E	125
"	50 E	124
"	51 E	125
"	52 E	118
"	53 E	112
"	54 E	88
"	55 E	88
50 N	44 E	130
"	45 E	128
"	46 E	126
"	47 E	122
"	48 E	109
"	49 E	118
"	50 E	125
"	51 E	130
"	52 E	133
"	53 E	122
"	54 E	122
"	55 E	88

COORDINATES		DEPTH
49 N	47 E	102
"	48 E	105
"	49 E	112
"	50 E	123
"	51 E	127
"	52 E	131
"	53 E	132
"	54 E	129
"	55 E	110

TOTAL FOOTAGE - 28,219

General Assignment

KNOW ALL MEN BY THESE PRESENTS That W. Alan Stewart and O. D. Robinson, in confirmation of the understanding and agreement as set forth in their letter to Benalan Mining Company under date of September 7, 1954, and accepted by Benalan Mining Company, for the purpose of confirming full and complete ownership and title in Benalan Mining Company of all the assets as specified or referred to in the letter-agreement between W. Alan Stewart and O. D. Robinson dated June 29, 1954, or acquired pursuant to said letter, whether prior or subsequent to the date thereof, as well as all rights, title, and interest of W. Alan Stewart and O. D. Robinson in and to said letter-agreement of June 29, 1954, have granted, bargained, sold, conveyed, assigned, transferred, and set over and by these presents do grant, bargain, sell, convey, assign, transfer, and set over unto Benalan Mining Company, its successors and assigns,

> All property, real and personal, rights, licenses, privileges, interest, and estates of every kind and character, legal and equitable, referred to and acquired pursuant to said letter-agreement of June 29, 1954, and whether acquired prior or subsequent to said date, subject, however, to all the terms and provisions of said letter-agreement.

TO HAVE AND TO HOLD the same unto the said Benalan Mining Company, its successors and assigns.

Said W. Alan Stewart and O. D. Robinson hereby further covenant and agree to and with Benalan Mining Company that they will, together or separately, as to any of said assets which require separate treatment, do and perform every act and thing as may be required to perfect the title to any of said property and further agree that they will execute any and all further instruments of sale, conveyance, assignment, or transfer as may be required subsequently to vest legal title in Benalan Mining Company, in which Company full ownership now is.

IN WITNESS WHEREOF, The parties hereto have set their respective hands and seals this 1st day of October, 1954.

W. Alan Stewart
W. Alan Stewart

O. D. Robinson

STATE OF Colorado)
) ss:
COUNTY OF Jefferson)

The within named W. Alan Stewart appeared before me in person this 1st day of October, 1954, and acknowledged the foregoing instrument to be his act and deed for the uses and purposes therein specified.

WITNESS my hand and seal of office.

My commission expires
November 18, 1956

Grace E. Burt
Notary Public

STATE OF PENNSYLVANIA)
) ss:
COUNTY OF ALLEGHENY)

The within named O. D. Robinson appeared before me in person this 4 day of October, 1954, and acknowledged the foregoing instrument to be his act and deed for the uses and purposes therein specified.

WITNESS my hand and seal of office.

My commission expires
Jan. 22. 1957

Nancy J. Arnold
Notary Public

NANCY J. ARNOLD, Notary Public
MY COMMISSION EXPIRES
JAN. 22, 1957

1117 Washington Avenue
P. O. Box 509
Golden, Colorado
June 29, 1954

Mr. O. D. Robinson
223 Fourth Avenue
Pittsburgh 22, Pennsylvania

Dear Mr. Robinson:

Please confirm below our agreement relating to approximately 18,000 acres of land in Fremont, Montrose, and Jefferson Counties, Colorado, which in my opinion, based upon a preliminary investigation conducted under my supervision and at my expense, contain mineral deposits capable of being mined and marketed at a profit.

In respect of these lands (outlined in red on the attached map - Exhibit A - and herein designated "contract area") I now own or control certain lode claims and mining rights more particularly described in Exhibit B attached.

As I have previously explained to you, the Defense Production Act of 1950 was designed to enc urage the exploration, development, and mining of critical and strategic metals and minerals. Pursuant to this Act, as amended, the Defense Minerals Exploration Administration, Department of the Interior (DMEA) has promulgated DMEA Order 1, amended, setting forth procedures and regulations for obtaining government aid in financing the cost of projects for exploration for indicated or undeveloped sources of strategic or critical metals and minerals. These government contributions or loans are repayable to the government out of but only out of 2½% to 5% of the gross proceeds from the sale of ore mined and shipped from ground embraced by an exploration project loan. Inasmuch as the contract area is believed to include several projects worthy of further exploration, it is reasonable to expect that the government will contribute 75% of the total allowable costs of each such exploration project. In connection with the above-mentioned preliminary investigation, I have incurred expenses in the approximate amount of $20,000.00 and have estimated that new working capital in the amount of $230,000.00 or less, coupled with government contributions under the DMEA program, will be sufficient to explore a substantial portion of the contract area.

In consideration of the premises, of our mutual desire to participate in the further exploration and development of the contract area, and of your providing new working capital with which to aid in financing exploration projects hereunder on the basis of your owning an 80% and my owning a 20% interest in the aforesaid claims and mining rights and in all other properties, both real and personal, that may be acquired under the terms and conditions hereof, it is agreed:

(1) That upon your confirmation of this letter-agreement, you will pay to me in cash the sum of $20,000.00 as reimbursement of expenses incurred by me in connection with the discovery of mineral deposits and the acquisition of mining claims in the contract area; and you will provide from time to time as required for exploration purposes amounts aggregating $230,000.00;

(2) (a) That after careful consideration but with the least practicable delay you will form or cause to be formed under or in conformity with the laws of such state as you consider best suited to further the purposes of this letter-agreement, an association, partnership, corporation, firm, or other entity (herein for convenience sometimes called "corporation", irrespective of the exact legal nature of such entity) by which or for which account and interest the further exploration, development, and mining of critical and strategic minerals and metals in the contract area may be carried on;

(b) That upon its formation, each of us shall forthwith execute and deliver or cause to be executed and delivered all such instruments of transfer as may be necessary or appropriate to vest in such new corporation title to all claims and mining rights described in Exhibit B, together with all of our right, title, and interest in any property or assets acquired hereunder, and that such transfers shall be made solely in exchange for stock (or other certificates evidencing an equity interest in such corporation) which shall be issued to you and me in exact proportion to our respective interests herein prior to such exchange, namely, 80% to you and 20% to me;

(c) That I shall be represented on the Board of Directors or other governing body of the corporation (which shall consist of not less than three nor more than seven members) so long as I continue to own not less than a 10% equity in the corporation;

(d) That from and after the date the corporation is formed, the raising of working capital required for development of the contract area shall be the sole responsibility of the corporation, the management of which shall exercise its best efforts to provide sufficient funds for the purposes aforesaid;

(3) That pending the formation of the corporation contemplated by Section 2 hereof, I shall have charge of all exploration work hereunder and for my services as Director of Exploration shall receive out of exploration moneys furnished by you a monthly salary of $500.00, plus a reasonable allowance for current office overhead and for other out-of-pocket expenses.

(4) That we contemplate the purchase of a bulldozer, rotary air drill, jeep-truck, station wagon with surveying tower, portable housing facilities, laboratory assaying unit, Geiger counter probe, field shop for maintenance of equipment, power unit, arc welder, two (2) scintillometers, Paulin altimeter, McCollough chain saw, Piper Super Cub plane, and other miscellaneous machinery and equipment which will involve an immediate outlay of approximately $75,000.00 and also the later purchase of a second rotary air drill at a cost of $25,000.00, more or less;

(5) That upon the purchase of the aforesaid machinery and equipment, I will immediately proceed in a workmanlike manner and in accordance with modern mining practices to explore the lands in the contract area by giving preference to such of said lands as in my judgment are most favorably located for the development of a commercial mining operation;

(6) That from time to time as exploration work progresses appropriate applications will be made to DMEA for exploration project loans, the proceeds of which will be devoted to the precise purposes for which they were granted;

(7) That all rights and obligations hereunder, insofar as they relate to lands nowincluded in the contract area (or which may hereafter be made subject to the terms and conditions of this letter-agreement) are subject to (a) all applicable laws and regulations relating to the prospecting for and the mining of metals and minerals upon Government, State, or privately owned lands and (b) all legal or other impediments beyond the control of the party affected thereby;

(8) That this letter-agreement shall become effective as of June 1, 1954, although actually executed subsequent to that date;

(9) That the terms hereof shall be legally binding upon each of us and our respective heirs, personal representatives, successors, and assigns.

Very truly yours,

W. Alan Stewart

W. Alan Stewart

Confirmed:

O. D. Robinson

Exhibit B

to Letter-Agreement between
W. Alan Stewart and O. D. Robinson
dated June 29, 1954

Group 1 Mining Claims

June Bug
June Bug - Nos. 1 and 2
Billie Jean - No. 1

These are certified mining claims recorded as lode locations in the Court House at Montrose, Montrose County, Colorado, under the names of Everett and June Ayers. The claims are located on a topographic uplift known as Martin Mesa near Uravan in Montrose County, Colorado. DMEA loan applications are nearly completed for this group and will be submitted in a few days.

Group 11 Mining Claims

Colexco - Nos. 1-43

These mining claims are located in Fremont County, Colorado, and are held by lode location. Location certificates are on record at the Court House in Canon City, Fremont County, Colorado. Recordings are in Book 333, Pages 475 to 505. Amended location certificates are recorded for Colexco Nos. 40-42 in Book 333, Pages 539 and 540. DMEA loan applications are in process of preparation.

Group 111 Mining Claims

Windy Basin - Nos. 1 and 2
Pick and Shovel - Nos. 1-5
Hub - Nos. 1-5
Hominy - Nos. 1 and 2
Yellow Cow

These tracts are held by such possessory and locating rights as have been acquired by lease applications filed with the Atomic Energy Commission under the provision of Atomic Energy Commission Circular 7. Notices of lease application have been filed by the Colorado Exploration Company with the Recorder of Montrose County, Montrose, Colorado. Lease application recording reception Nos. 228745 through 228749. The tracts are located on Martin Mesa, Montrose County, Colorado. The gathering of field data for use in preparing DMEA applications is now in progress.

Group IV Mining Claims

Persistance - Nos. 1, 3, 4, and 5
Duke - Nos. 1-3
Brontosarus -
Electron - Nos. 1-5
Duchess - Nos. 1-7
Phantom - Nos. 1-5

Mining tracts filed on by James A. Nibert*

Wilma - Nos. 1-5
Oliver - Nos. 1-5

Mining tracts filed on by William Burnett

Windy -
Windy - Nos. 1-3
June Bug - No. 3
Show Me -
Sparky -

Mining tracts filed under the names of Everett and June Ayers.

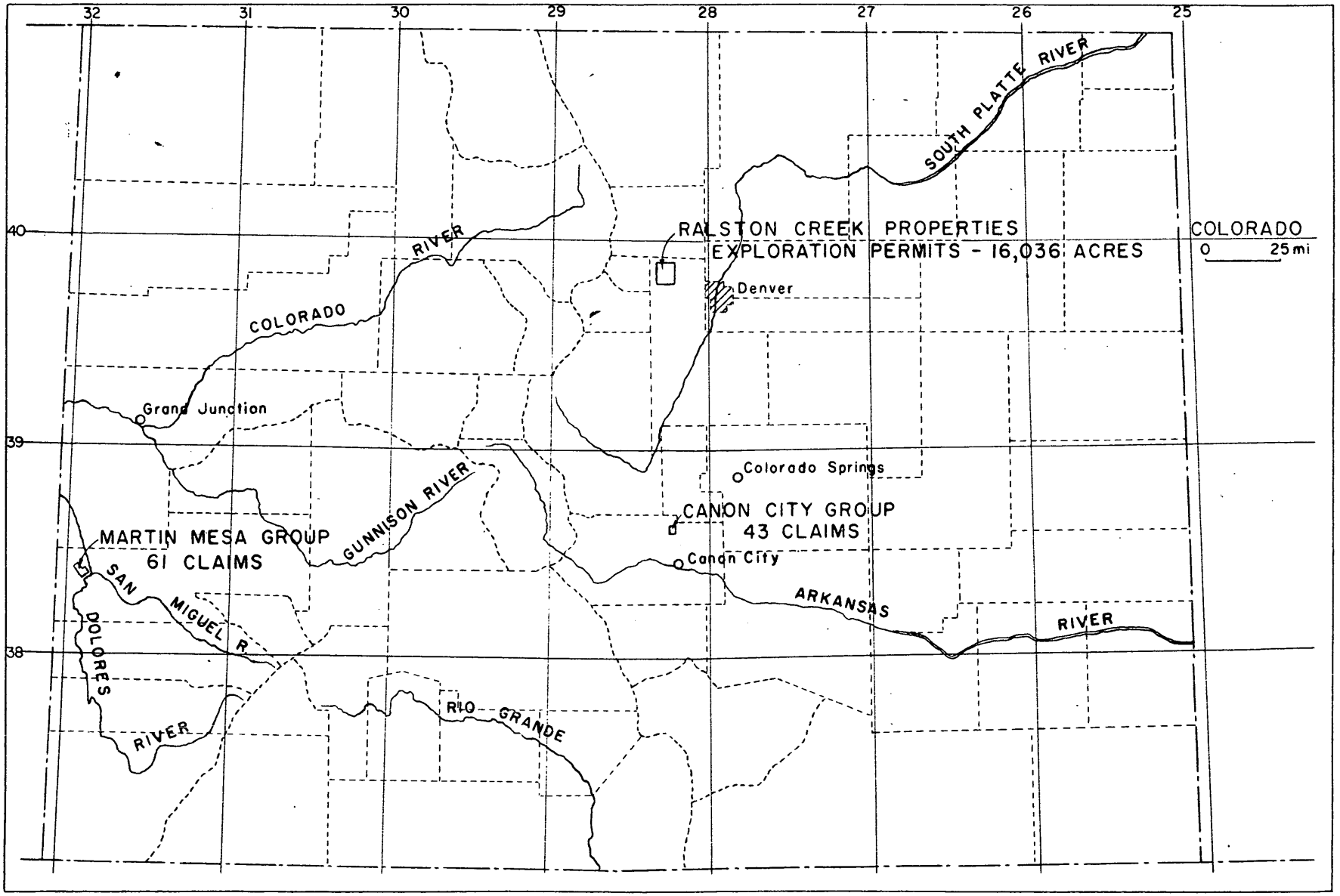
The Colorado Exploration Company holds options to lease the above listed mining tracts from the claim owners. Such options are to be executed upon validation of these claims or tracts under the provision of Atomic Energy Commission Circular 7. Notices of lease application covering these tracts have been recorded at the Court House in Montrose County, Montrose, Colorado. Lease applications have been prepared and submitted to the Atomic Energy Commission Regional Operations Office at Grand Junction, Colorado. The tracts are located on Martin Mesa, Montrose County, Colorado. The gathering of field data for use in preparing DMEA applications is now in progress.

Group V Fee Land

Ralston Creek Mining District

The Colorado Exploration Company has exploration permits, with an option to lease, covering 16,036 acres in Jefferson County, Colorado. This acreage is located within the boundaries of the U. S. Geological Survey Quadrangle known as Ralston Buttes. A limited amount of exploration mapping has been conducted in this area.

*-Three additional claims are under option from James A. Nibert. The document containing the claim names is in the possession of an agent of Colorado Exploration Company. Descriptions of these claims will be forwarded as soon as possible.


32
31
30
29
28
27
26
25
40
39
38
SOUTH PLATTE RIVER
RALSTON CREEK PROPERTIES
EXPLORATION PERMITS - 16,036 ACRES
COLORADO
0 25 mi
Denver
COLORADO RIVER
Grand Junction
Colorado Springs
GUNNISON RIVER
CANON CITY GROUP
43 CLAIMS
MARTIN MESA GROUP
61 CLAIMS
Canon City
SAN MIGUEL R
DOLORES RIVER
ARKANSAS RIVER
RIO GRANDE

w.a.s. E.A. J.A.

~~EXHIBIT "A" TO OPTION FOR MINING LEASE~~

MINING LEASE

w.a.s. RAH. E.A. J.A.

THIS INDENTURE, Made this ~~20th~~ 2nd day of ~~February~~ August A.D., 19 54, between ~~Everett Ayers and June Ayers~~, of ~~Nucla, Colorado~~, lessor, and COLORADO EXPLORATION COMPANY an unincorporated business, of Golden, Jefferson County, Colorado, lessee;

WITNESSETH: That the said lessor, for and in consideration of the royalties hereinafter reserved, and the covenants and agreements hereinafter expressed, and by the said lessee to be kept and performed, has granted, demised and let, and by these presents does grant, demise and let, unto the said lessee, all the following described mining property, situated in the County of Montrose, State of ~~Colorado~~, to-wit:

Certified Mining Claims recorded in Montrose County, Colo.

w.a.s. E.A. J.A. RAH.

June Bug # 286513
June Bug No. 1. #286514 Sparky June Bug Fraction
June Bug No. 2. #286515
June Bug No. 3. #286516
~~Eve~~ # 285607 Billie Jean No. 1 #286501 J.A. E.A.

w.a.s.

all located in Section 26, Township 48 North, Range 18 West.

TO HAVE AND TO HOLD unto the said lessee for the term of 10 years and so long thereafter as ore is being produced from the said property, ~~[illegible]~~, unless sooner forfeited or terminated through the violation of any covenant herein contained.

And in consideration of the said demise the said lessee does covenant and agree with said lessor as follows, to-wit:

1. To enter upon said mine or premises, and work the same in the manner necessary to good and economical mining, so as to take out the greatest amount of ore possible, with due regard to the development and preservation of the said premises as a workable mine, and to the special covenants hereinafter contained, and to file such work affidavits as may be required by the A. E. C. and/or State mining laws.

2. To keep accurate accounts, and to render semi-annual statements to the lessor, his agent or attorney, showing the amount and character of the work done.

3. To pay to the lessor, his agent or attorney, a royalty of fifteen percent (15%) upon all ore taken and sold from the leased premises. All settlements to be made on the mill or sampler net assay values. The ore price upon which such settlement is made shall be understood to include bonuses and development allowance payments, and any additional premiums, bonuses or allowances as may be declared by the Atomic Energy Commission. The only exception to the above shall be haulage or transportation allowances which shall be kept by the lessee.

4. The lessee shall and hereby does assume all responsibility in case of accident to any of its employees, while in the normal pursuance of his assigned duties, in or about said property.

5. All taxes assessed against said demised premises for ores mined and shipped under this lease shall be paid by the lessee.

6. All bills and expenses incurred by the lessee or those in privity with it shall be promptly paid by the lessee and by said prompt payment said lessee shall prevent the filing of any and all liens of miners, mechanics or material men, against said demised premises; and, if by reason of failure of said lessee to pay such bills or expenses, any lien or liens shall be filed against said premises the said lessor may forthwith pay off and discharge the same, and the said lessee hereby agrees to pay to said lessor all sums so advanced or paid to clear said premises from liens which may be filed as aforesaid, and the said lessor may also at his election declare a forfeiture of this lease.

7. Said lessee further covenants that no person not in privity with the parties hereto shall be allowed to hold possession of said premises or any part thereof under any pretext whatever.

8. Further, that lessee will deliver to said lessor quiet and peaceable possession of said demised premises without demand or further notice, on the termination day of lease, A.D. 19?, at noon, or at any time previous thereto, upon demand for forfeiture, and it is mutually understood that all track, pipe, machinery and tools which may be placed upon said premises by the said lessee may be removed therefrom within thirty days after the termination of this lease; provided, however, that no such tools or machinery shall be so removed while the said lessee may be in any manner indebted to the said lessor under any obligation incurred under this lease.

9. If the lessee in its own judgment deems that any portion of the above described parcel of ground is unminable, it shall return that portion to the lessor at any time during the term of the contract.

10. Upon the violation of any covenant or condition herein contained, this lease shall, at the option of said lessor, expire and terminate, and the said premises shall become forfeited to the lessor, and the said lessor or agent may thereupon, after demand in writing for possession, enter upon said premises and dispossess all persons occupying the same, with or without force, and with or without process of law, or at the option of the lessor the said lessee and all persons found occupying said premises or any part thereof may be proceeded against as guilty of unlawful detainer.

Lode Location Certificates or some other procedure, the Lessors rights on those lands falling under the provisions of U. S. Atomic Energy Commission Circular 7 are in question. The Lessor, therefore, agrees that when a lease is granted to him under Circular 7 or when he elects to hold the lands under any other plan yet to be passed by the Legislature, this lease shall be deemed by both parties to have been in full effect retroactively to the date of this agreement.

IN WITNESS WHEREOF, the parties hereto for themselves, their heirs, executors, administrators, successors and assigns, have executed these presents this 3rd day of August, A. D. 1954.

MINING TRACT OWNER (S)

Everett Ayers

June Ayers

COLORADO EXPLORATION COMPANY

Walter Alan Stewart

STATE OF COLORADO }
COUNTY OF Montrose } ss.

The foregoing instrument was acknowledged before me this 3rd day of August, 1954, by Everett Ayers June Ayers and Walter Alan Stewart

Witness my hand and official seal.

My commission expires My Commission expires March 8, 1958

W. C. Huntley
Notary Public

ADDITIONAL COVENENTS TO ~~EXHIBIT "A" TO OPTION~~

~~FOR MINING LEASE~~ - MINING LEASE

W.A.S.
E.A.
J.A.

1. WHEREAS, the mining tract holder and the Colorado Exploration Company have entered into an agreement for said Company to operate an exploration and mining program on land in possession of the tract holder, the Colorado Exploration Company agrees to perform a minimum total of one thousand (1000) ft of exploration drilling per 600 x 1500 ft tract based on the total number of tracts described in "Mining Leases," but reserves the right to locate this drilling in any area it chooses within the limits of any lands held by the tract holder and described in such "Mining Leases" as may have been executed prior to this date. The Colorado Exploration Company agrees to complete this amount of drilling within one year following this 2nd day of August, 1954.

2. The Colorado Exploration Company further agrees to commence actual drilling within sixty (60) days after the date of "Mining Leases." The Company agrees to have one or more exploration drills, of a type to be designated by the Company, on the land which is included in the several tracts on the area known as Martin Mesa, which are leased to the company by the several tract holders on Martin Mesa.

IN WITNESS WHEREOF, the parties hereto for themselves, their heirs, executors, administrators, successors and assigns, have executed these presents the day and year first above written.

Walter Alan Stewart (SEAL)
D.B.A.
COLORADO EXPLORATION COMPANY

By _____

Everett Ayers (SEAL)

June Ayers (SEAL)

_____ (SEAL)
Mining Tract Owner (s)

STATE OF COLORADO
COUNTY OF Jefferson ss

The foregoing instrument was acknowledged before me this 16 day of July, 1954, by Walter Alan Stewart

Witness my hand and official seal.

My commission expires November 18, 1956.

Grace G. Burt
Notary Public

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SUPPLEMENTAL AGREEMENT

WHEREAS, on the 2nd day of August, 1954, Everett and June Ayers of Nucla, State of Colorado, hereinafter called "Owner," did make and enter into an agreement entitled "Option for Mining Lease," wherein and whereby certain rights and option was granted unto WALTER ALAN STEWART, doing business as COLORADO EXPLORATION COMPANY, an unincorporated business of Golden, Jefferson County, Colorado, hereinafter called "Company," pertaining to and covering the following described mining locations or claims, to-wit:

June Bug #286513
June Bug No. 1 #286514
June Bug No. 2 #286515
June Bug No 3 #286516
Billie Jean No. 1 #286501
Sparky
June Bug Fraction

AND WHEREAS, said lands and mining locations or claims are subject to the jurisdiction of the Atomic Energy Commission as being "Lands Affected by Federal Mineral Leasing Laws," pursuant to The Atomic Energy Act of 1946, as amended (60 Stat. 755-775; 67 Stat. 240; 42 U. S. C. 1801-1819), and rules of the Commission contained in Domestic Uranium Program Circular 7, and therefore, all exploration and development rights and privileges pertaining to said lands are subject to and contingent upon lease or leases being issued and granted to proper applicant or applicants, said Owner having timely filed application for lease or leases upon said lands, thereby claiming such rights and privileges as are available to applicants by virtue of said laws and said rules;

AND WHEREAS, said parties to said "Option for Mining Lease" desire to clarify their respective rights and position relative to said agreement.

NOW THEREFORE, in consideration of the premises, and such other good and sufficient consideration as may pass between the parties hereto, it is agreed as follows:

1. The terms "validation clause" and "validation," contained

in Paragraph 1 of said "Option for Mining Lease," are hereby declared and construed to have and bear the meaning and construction set forth hereinbelow, to-wit:

> "Validation Clause" shall be construed to signify those applicable provisions or paragraphs of said Domestic Uranium Program Circular 7 as relate to procedure for acquiring leases, eligibility of applicants, Commission decisions, and any other rules bearing upon, applying for and securing leases for uranium mining upon lands of the Public Domain.
>
> "Validation" shall mean the issuance or granting of lease or leases upon said lands or tracts by the Commission to Owner, and, in addition thereto, granting of approval by the Commission of assignment or conveyance of such lease or leases or the operating rights thereunder on the part of Owner unto Company (as is more fully set forth and agreed upon hereinbelow).

2. Owner hereby covenants and agrees, that in the event of the issuance or granting of lease or leases for uranium mining upon said lands by said Commissioner to Owner, and upon compliance with the terms of option by Company, set forth in said "Option for Mining Lease," Owner will upon request make, execute, and deliver unto Company such assignments, leases or other instruments, in such form and containing such terms and provisions as will satisfy the rules and requirements of said Commission, and as will transfer or convey unto Company all the right, title, and interest of Owner in and to said lands and leases, and containing such terms, provisions and reservation of royalty as Owner has heretofore adopted and agreed to in "Exhibit 'A' to Option for Mining Lease-Mining Lease," which are not inconsistent or contrary to said rules and regulations of said Commission, and it is hereby agreed that, if appropriate hereunder, said "Exhibit 'A' to Option for Mining Lease--Mining Lease," will be adopted and used for the purposes hereinabove mentioned to the fullest extent possible.

3. It is hereby agreed, that, if Company shall enter upon said lands and engage upon exploration work, including the drilling of test holes, prior to "validation" of said lands as hereinabove defined, that such exploration work or drilling shall be considered to be performance under the agreements expressed in instrument entitled "Additional Covenants to Exhibit 'A' to Option for Mining Lease--Mining Lease," previously adopted and agreed to by and between the parties hereto, and, that, if any responsibility or liability shall attach to or become placed upon either of the parties hereto by reason of any objection or claim on the part of the Atomic Energy Commission, the Bureau of Land Management of the Department of the Interior, or of any agency of the Federal Government, that such exploration or drilling is illegal or not privileged, neither of the parties hereto shall hold or attempt to hold the other party hereto responsible or liable in damages by reason of such exploration work or drilling, or any special damage arising out of the same.

4. It is mutually understood between the Lessor and Lessee that until the U. S. Atomic Energy Commission grants a Lease under its Circular 7 or new Legislative Acts permit the Lessors to locate lands falling under the provisions of Circular 7 with

Lode Location Certificates or some other procedure, the Lessors rights on those lands falling under the provisions of U. S. Atomic Energy Commission Circular 7 are in question. The Lessor, therefore, agrees that when a lease is granted to him under Circular 7 or when he elects to hold the lands under any other plan yet to be passed by the Legislature, this lease shall be deemed by both parties to have been in full effect retroactively to the date of this agreement.

IN WITNESS WHEREOF, the parties hereto for themselves, their heirs, executors, administrators, successors and assigns, have executed these presents this 3rd day of August, A. D. 1954.

MINING TRACT OWNER (S)

X Everett Ayers

X June Ayers

COLORADO EXPLORATION COMPANY

Walter Alan Stewart

STATE OF COLORADO)
COUNTY OF Montrose) ss.

The foregoing instrument was acknowledged before me this 3rd day of August, 1954, by Everett Ayers June Ayers and Walter Alan Stewart

Witness my hand and official seal.

My commissin expires My Commission expires March 8, 1958

W. C. Huntley
Notary Public

420 [illegible]

[illegible] California

OFFICIAL BUSINESS

FIRST CLASS

AIR MAIL

THE DEFENSE MINERALS EXPLORATION ADMINISTRATION

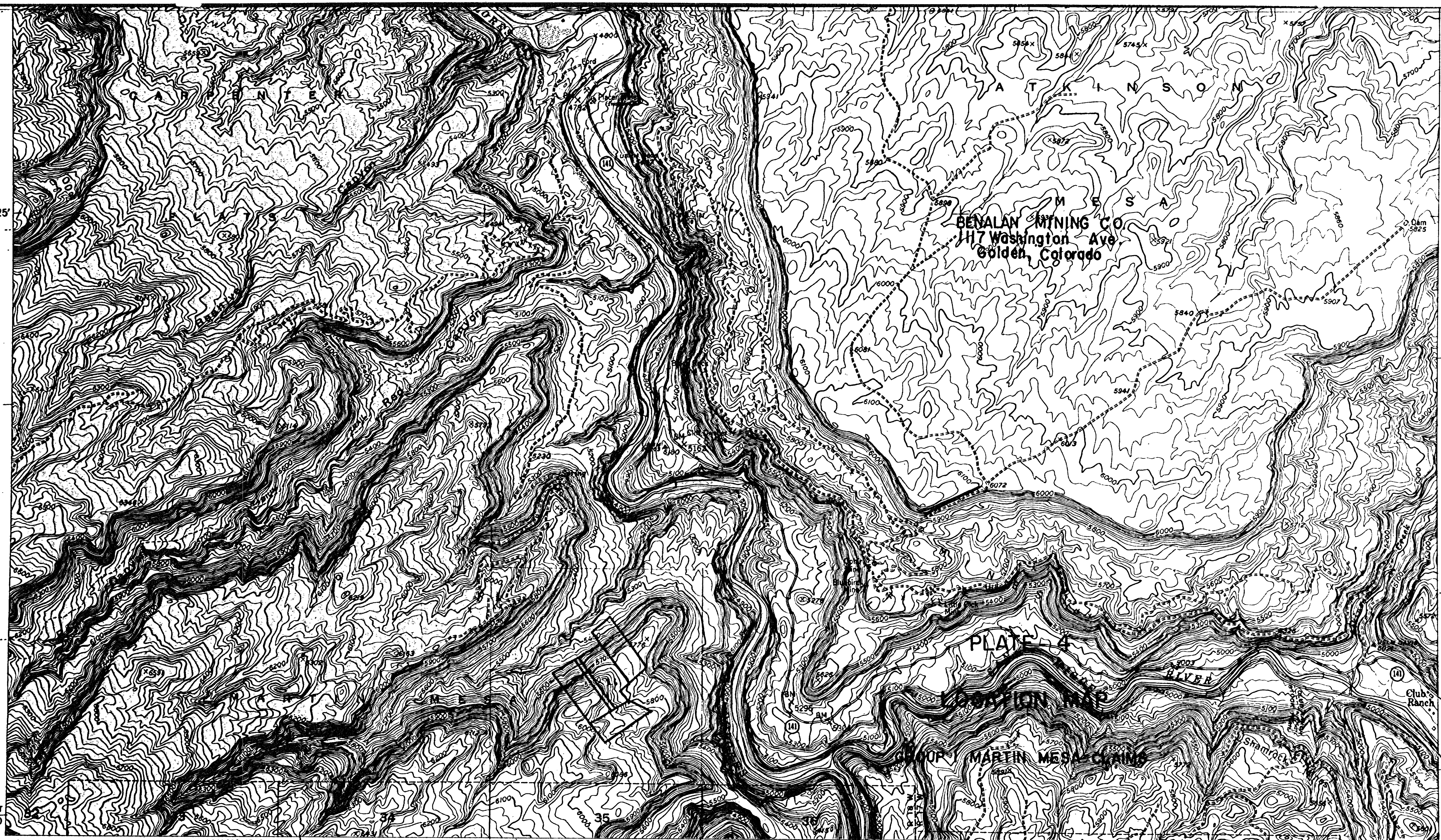
INTERIOR BUILDING

WASHINGTON 25, D. C.

AIR MAIL

FIRST CLASS

AIR MAIL



Mapped, edited, and published by the Geological Survey

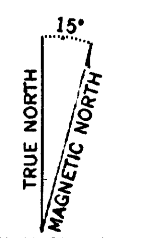
Control by USGS and USC&GS

Topography from aerial photographs by multiplex methods
Aerial photographs taken September 1947. Field check 1949

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

Dashed land lines indicate approximate location
Land lines unsurveyed in part of T. 49 N.-R. 18 W.
Land lines omitted in part of T. 48 N.-R. 17 W., and T. 48 N.-R. 18 W., because of insufficient data

Unchecked elevations shown in brown



APPROXIMATE MEAN DECLINATION, 1949

SCALE 1:24 000

1 — ½ — 0 — 1 MILE

1000 — 0 — 1000 — 2000 — 3000 — 4000 — 5000 — 6000 — 7000 FEET

1 — .5 — 0 — 1 KILOMETER

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

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

ROAD CLASSIFICATION

HARD-SURFACE ALL WEATHER ROADS — DRY WEATHER ROADS

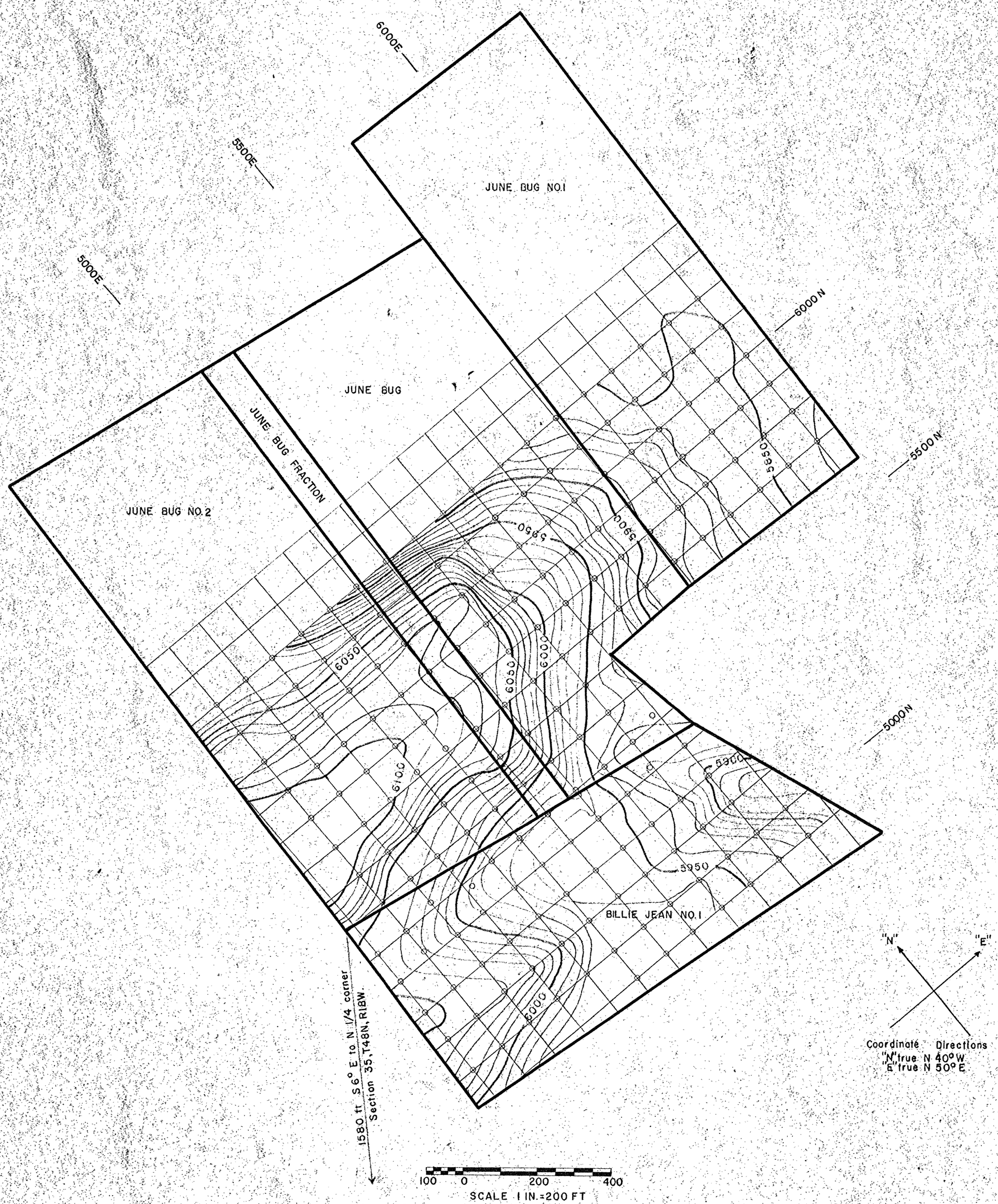
Heavy-duty — 4 LANE | 6 LANE — Improved dirt
Medium-duty — 4 LANE | 6 LANE — Unimproved dirt
Loose-surface, graded, or narrow hard-surface
U. S. Route — State Route

RED CANYON, COLO.
N3822.5—W10845/7.5

EDITION OF 1950

BENALAN MINING CO.
1117 Washington Ave.
Golden, Colorado

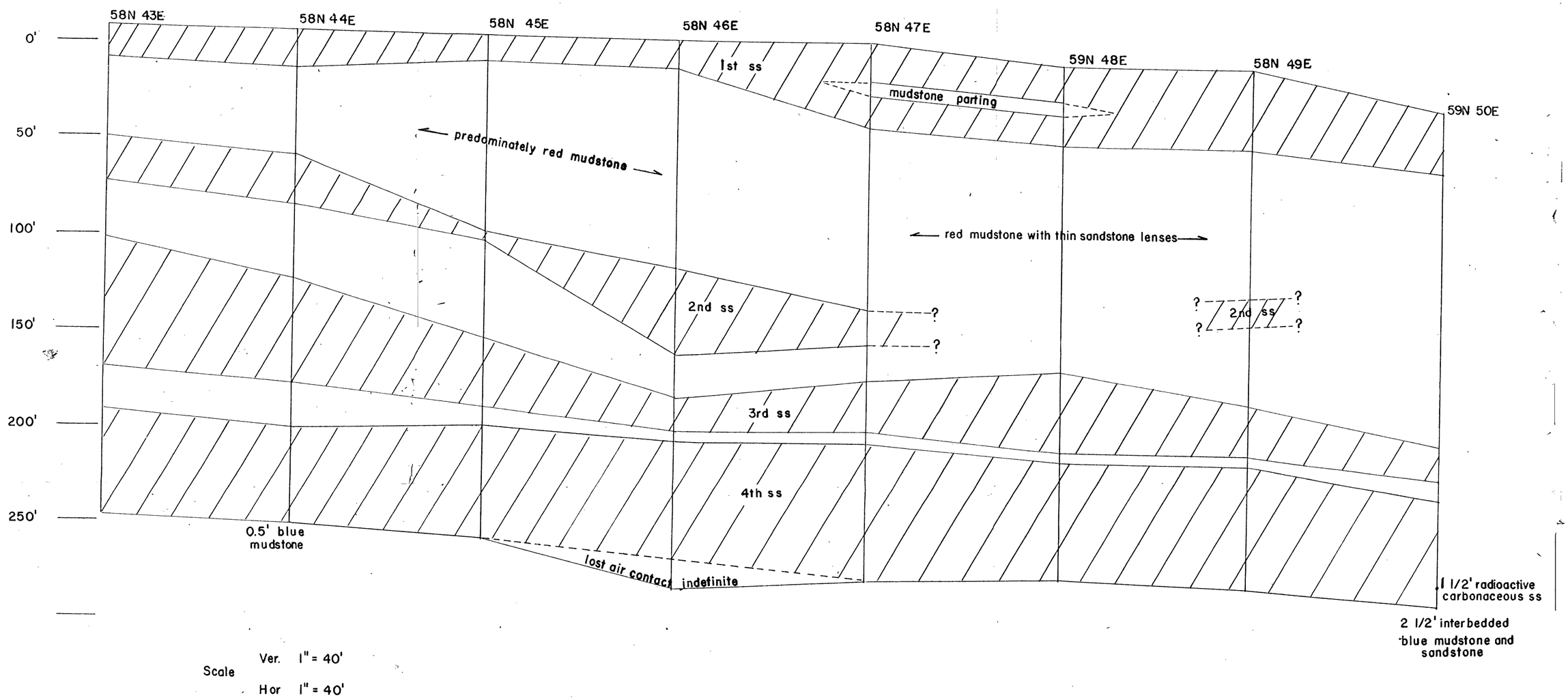
PLATE 2



CONTOUR INTERVAL 10 FT
datum sea level

TOPOGRAPHIC CONTOUR MAP
of
GROUP I MARTIN MESA CLAIMS
URAVAN AREA MONTROSE CO., COLORADO
prepared by
COLORADO EXPLORATION COMPANY

June, 1954



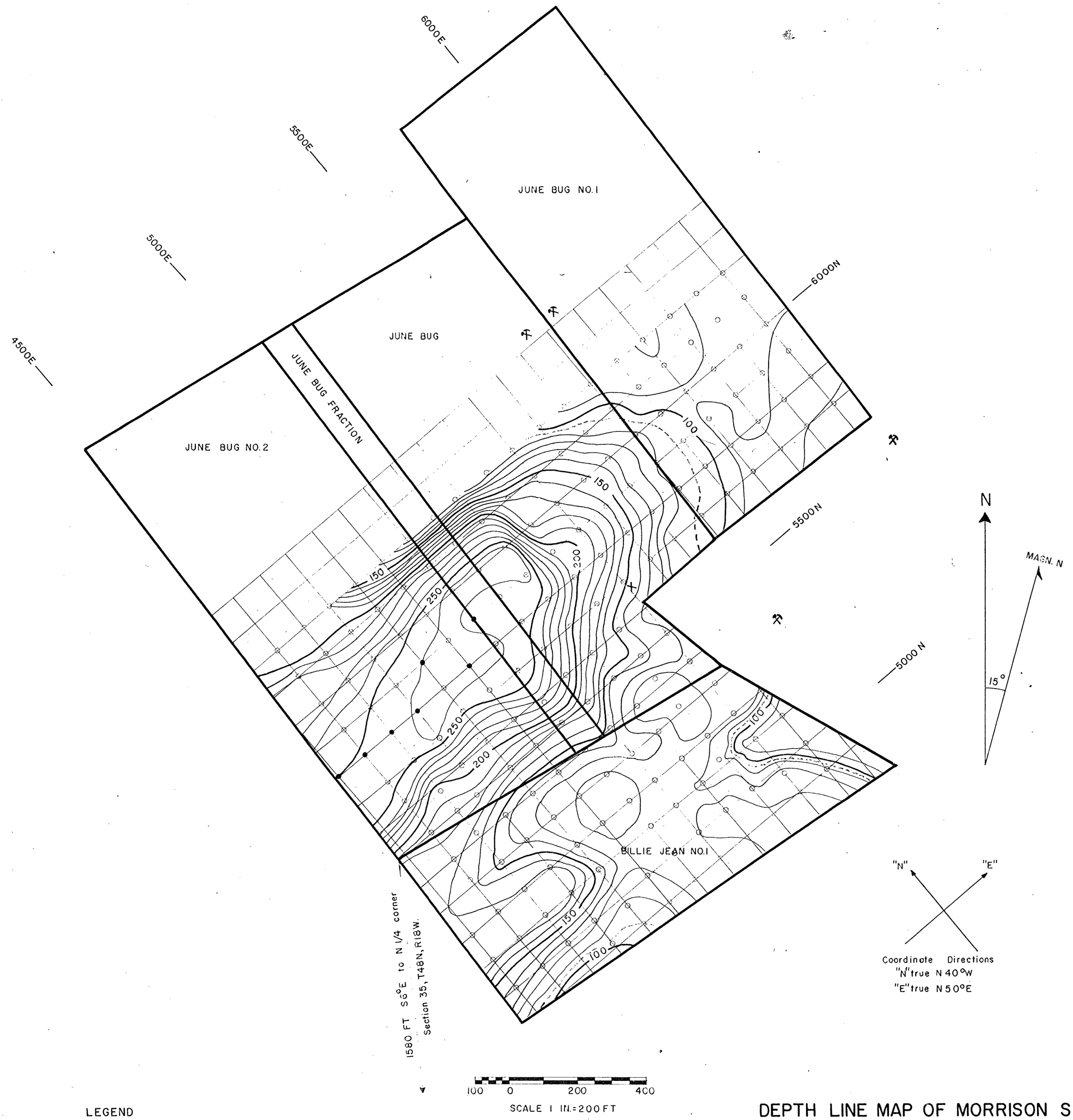
Scale Ver. 1" = 40'
Hor 1" = 40'

PLATE 5
Cross Section of Drilled Holes
June Bug No. 2 Claim
October 1954

BENALAN MINING CO.
1117 Washington Ave.
Golden, Colorado

BENALAN MINING CO.
1117 Washington Ave.
Golden, Colorado

PLATE 3



CONTOUR INTERVAL 10 FT

datum is top of basal shale member of the Morrison fm.

LEGEND

- ● drilled location
- ○ proposed drill site
- depth contour
- approximate contact of the 1st and 2nd Morrison ss. rims
- X mineralized outcrop
- ⚒ prospect or old mine working

DEPTH LINE MAP OF MORRISON SS

of

GROUP I MARTIN MESA CLAIMS

URAVAN AREA, MONTROSE CO., COLORADO

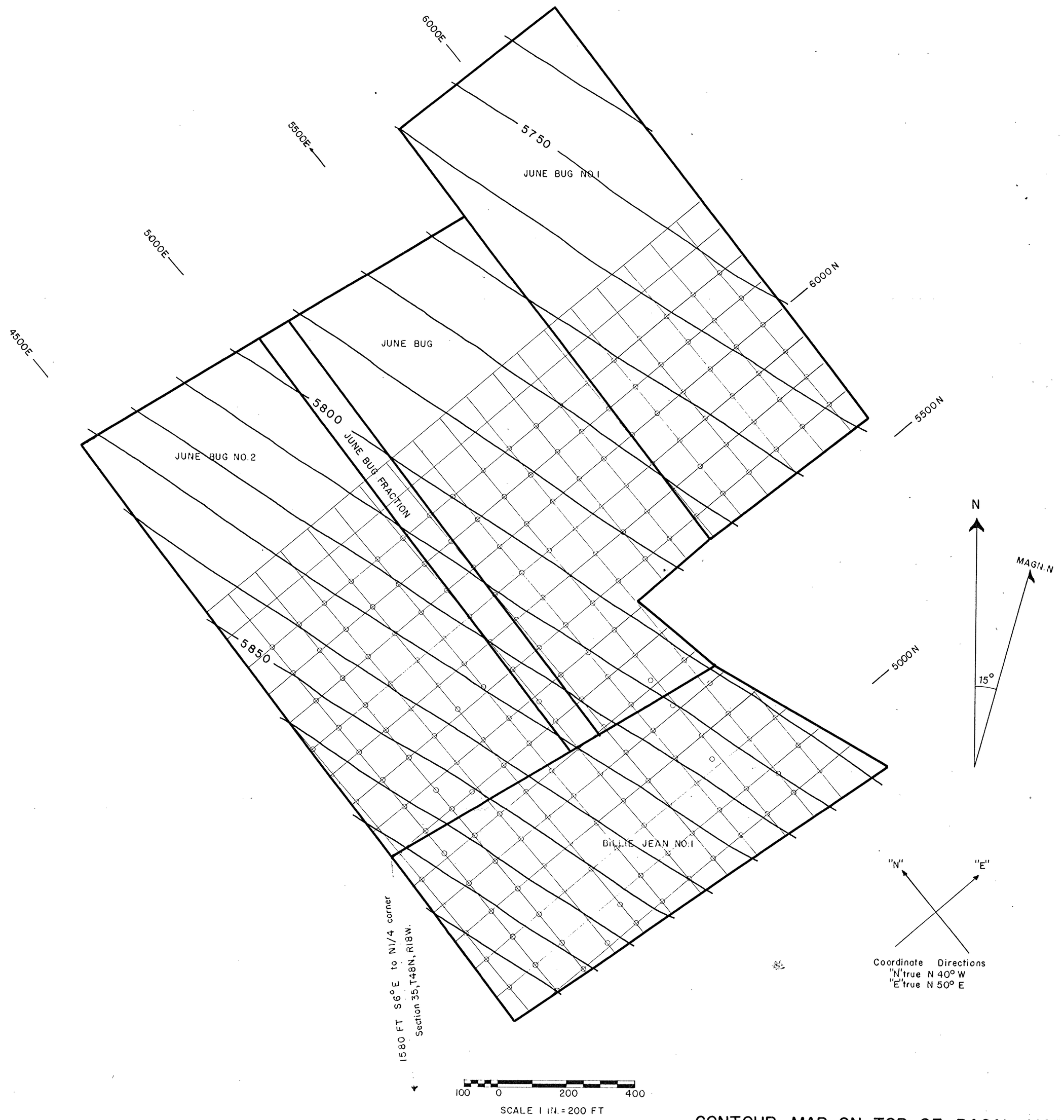
prepared by

COLORADO EXPLORATION COMPANY

June, 1954

BENALAN MINING CO.
1117 Washington Ave.
Golden, Colorado

PLATE I



CONTOUR MAP ON TOP OF BASAL MORRISON SH.

of

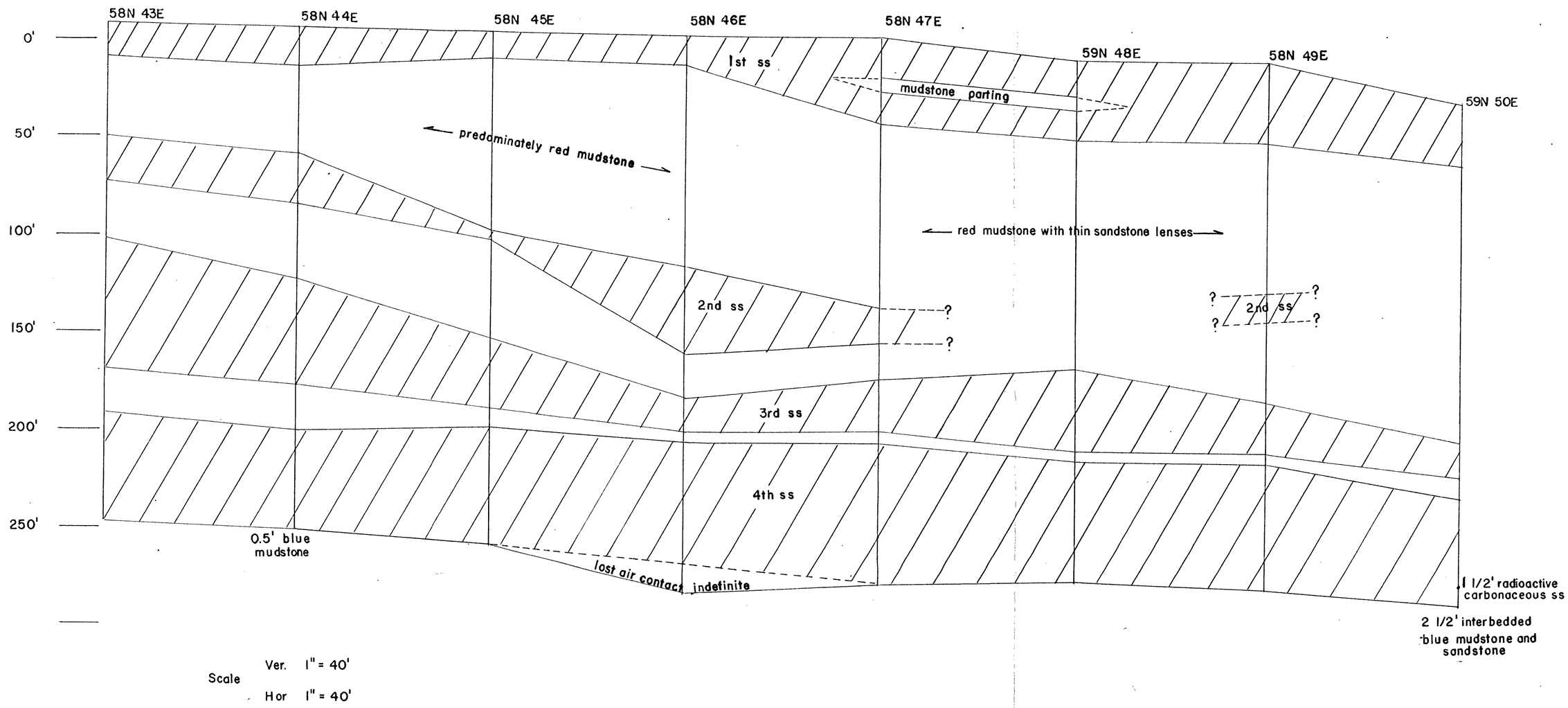
GROUP I MARTIN MESA CLAIMS

URAVAN AREA, MONTROSE CO., COLORADO

prepared by

COLORADO EXPLORATION COMPANY

June, 1954



Scale Ver. 1" = 40'
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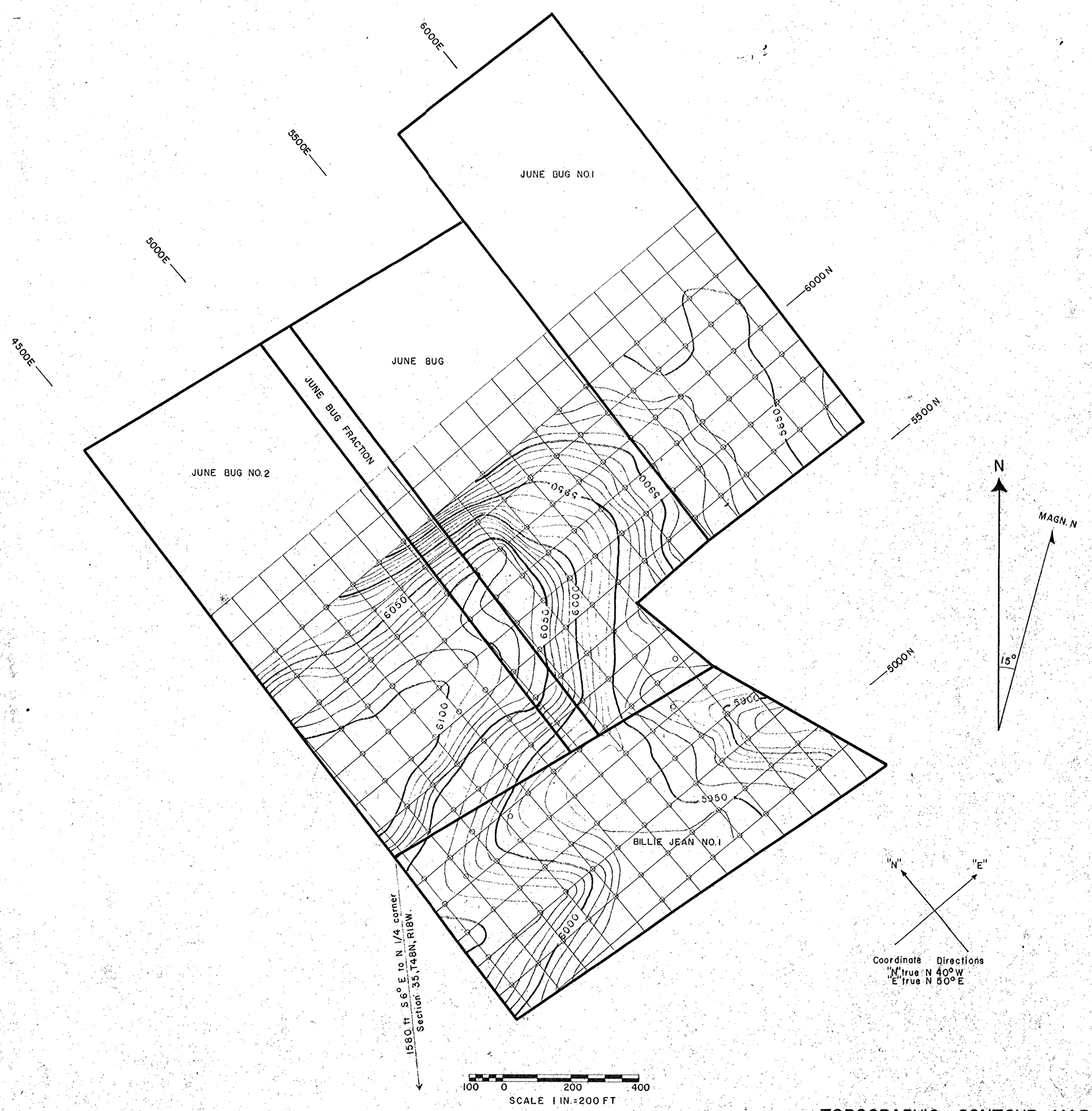

CONTOUR INTERVAL 10FT
datum sea level

TOPOGRAPHIC CONTOUR MAP
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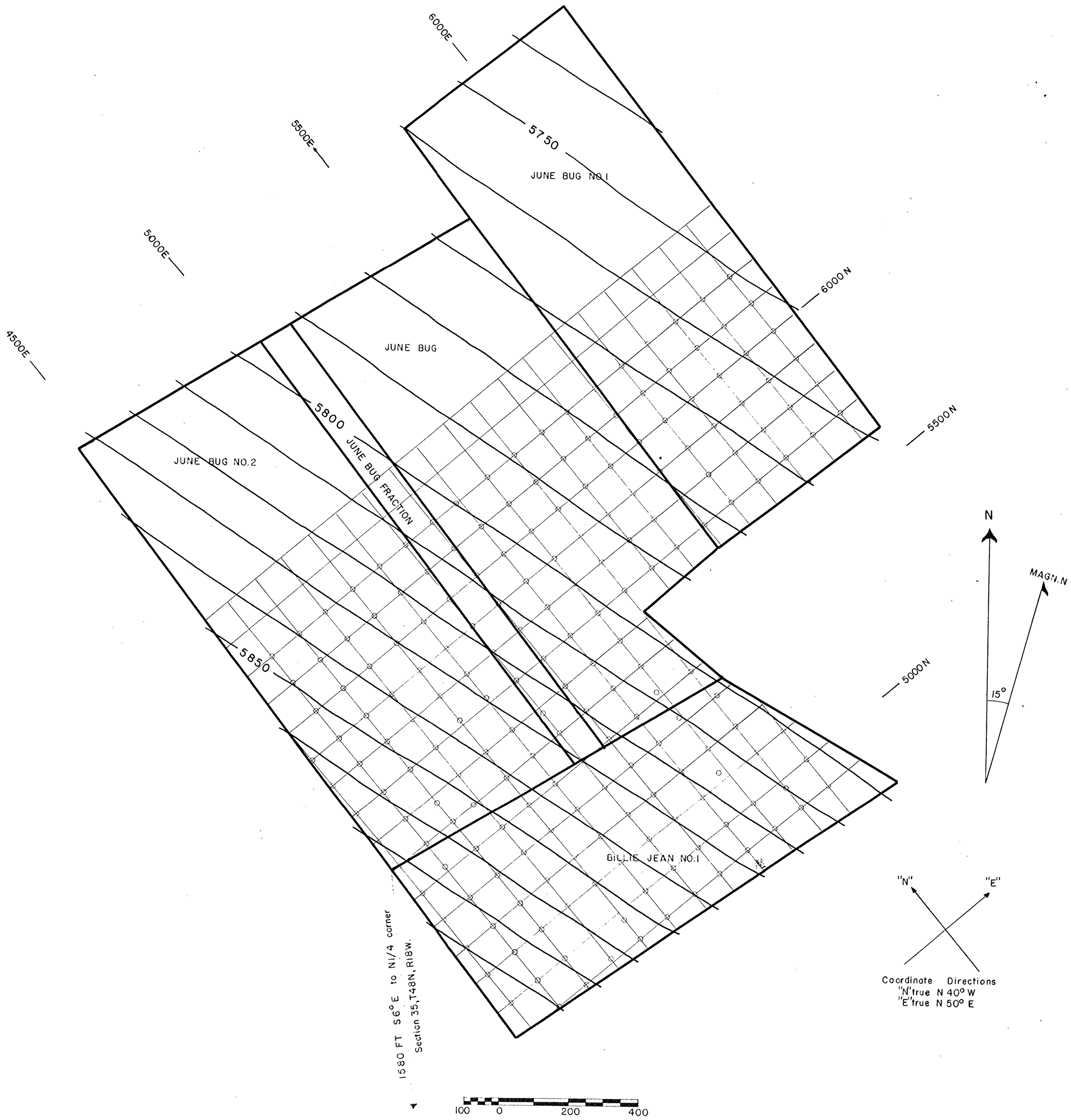

CONTOUR INTERVAL 10 FT
datum sea level

CONTOUR MAP ON TOP OF BASAL MORRISON SH.

of

GROUP I MARTIN MESA CLAIMS

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