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To:	CJon	Date	8-26-56
To:	Base metals	Date	8/27/56
To:	Op. Comm.	Date	11/19/56
To:	J.E. Johnson	Date	11-21-56
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J. A.
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Kiilsgaard
Lamb
Selfridge
Hyphen

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

NOV 23 1956

Mr. Karl Grau, President
Bluebonnet Uranium Corporation
2284 W. Holcombe Blvd.
Houston, Texas

Re: Docket No. DMEA-4416 (Copper)
Bluebonnet Uranium Corporation
Copper Chief Claims
Graham and Pinal Counties, Arizona

Dear Mr. Grau:

Your application for aid for an exploration project and other reports available to us in Washington concerning your application have been reviewed.

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

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

As requested, we are returning the report by Harold D. Maryott, Consulting Engineer.

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

Sincerely yours,

C. O. Mittendorf

Administrator

JWAlt/er/bjl/11/16 &20/56
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Pennington, USBM
Enclosure Mr. Kiilsgaard, USGS
Region III (2)
Chron.

R.C.L.

500

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

November 19, 1956

Memorandum

To: Administrator

From: Chief, Base Metals Division

Subject: Denial of application, Docket No. DMEA-4416, Bluebonnet Uranium Corporation, Copper Chief Claims (Copper), Graham and Pinal Counties, Arizona

The cited application was received by this office on August 9, 1956. It was referred to the Field Team on August 24 for consideration, a field examination if warranted, and recommendation.

The Applicant proposed to do 6,000 feet of diamond drilling to explore for copper mineralization, repair and maintain 12 miles of access road, construct roads to drill sites, rehabilitate an existing camp building, assaying, etc. The total estimated cost is $87,598.00.

The Field Team examined the property on October 10, 1956, and their report was received by this office on November 9.

Exploratory workings of the property consist of three adits, several open cuts, a pit and a 16-foot shaft. During the exploration from 1949 to 1956, inclusive, four shipments were made to the International Smelter at Miami, Arizona. A total of 48.65 tons of ore was shipped which averaged 5.9 per cent copper, 3.09 ounces silver, and 0.033 ounces gold per ton.

It is concluded by the examining team that surface exposures and present mine workings do not indicate that mineralization is extensive laterally, and perhaps vertically, along the fractures or in the brecciated limestone, and that exploratory drilling probably would not discover ore deposits of significant size or grade. The Applicant's exploration proposals are visionary and of a prospecting nature, and it appears that the vision has been stimulated by an attempt to project conditions at nearby and producing areas to this one. Under the prevailing geologic conditions and the limited extent of mineralization, the field examiners recommend that the application be denied without prejudice.

We concur with the recommendations of the Field Team and the commodity members of the USGS and the USBM that the application be denied.

W. R. GRISWOLD

File Copy
Surname
J. Alb

500

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

November 19, 1956

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W. R. GRISWOLD

JWAlt/bjl (11/19/56)

Copy to: Docket
Base Metals
Chron.

IN REPLY REFER TO:

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

RECEIVED NOV 15 1956 D.M.E.A.

November 14, 1956

Re: DMEA 4416
Bluebonnet Uranium Corp.
Copper Chief Claims
Graham and Pinal
Counties, Arizona
$87,598.00 - Copper

Memorandum

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

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

Subject: Reviews of Field Team Report

The applicant requested assistance in prospecting, by drilling, a limestone-rhyolite porphyry contact zone from small ore bodies in which small shipments of copper ore have been made. The ore mined occurred in brecciated limestone in fault zones.

The applicant proposed drilling the main contact zone, the inference being that ore bodies might be found. No definite target is offered. The applicant is doing work, none of which has indicated the existence of ore bodies larger than those already mined. The examiners conclude the proposed drilling is prospective and not likely to discover ore deposits of significant size or grade. They and the Field Team recommend that the application be denied without prejudice. I concur with the recommendation.

N. E. Nelson

N. E. Nelson

November 14, 1956

Re: DMEA 4416
Bluebonnet Uranium Corp.
Copper Chief Claims
Graham and Pinal
Counties, Arizona
$87,598.00 - Copper

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N. E. Nelson

N. E. Nelson

Copies to:
Director's reading, 4212
Branch reading - 4212
DMEA (3)
Docket file
Chrono
J. W. Pennington, 3623

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

RECEIVED NOV 15 1956

November 14, 1956

Memorandum

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

From: Commodity Specialist, Branch of Base Metals

Subject: Review of Examination Report, Docket No. DMEA 4416 (copper), Bluebonnet Uranium Corp., Copper Chief Claims, Graham and Pinal Counties, Arizona. $87,598.00

The applicant proposed to explore for copper mineralization by 6,000 feet of drilling at an estimated total cost of $87,598.00. Included in the cost were construction and maintenance of roads, rehabilitation work, and related items.

L. A. Stewart, Bureau of Mines, and W. L. Emerick, Geological Survey, found during their examination of the Copper Chief Claims that surface exposures and present workings do not indicate extensive mineralization, laterally and perhaps vertically, along the fractures or in the brecciated limestone. The examiners also believe that the applicant's proposal is visionary and of a prospecting nature.

As a result, the Field Team recommends that the application be denied without prejudice.

I concur with this recommendation.

J. W. Pennington

J. W. Pennington

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
F. D. Lamb
F i l e s

November 14, 1956

Memorandum

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

From: Commodity Specialist, Branch of Base Metals

Subject: Review of Examination Report, Docket No. DMEA 4416 (copper), Bluebonnet Uranium Corp., Copper Chief Claims, Graham and Pinal Counties, Arizona. $87,598.00

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As a result, the Field Team recommends that the application be denied without prejudice.

I concur with this recommendation.

J. W. Pennington

J. W. Pennington

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
F. D. Lamb
F i l e s

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

224 New Customhouse
Denver 2, Colorado

October 31, 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Joint Report of Examination, Docket DMEA-4416 (Copper)
Bluebonnet Uranium Corporation (Copper Chief Claims)
Graham and Pinal Counties, Arizona

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

The field examiners concur that the applicant's exploration proposals are visionary and of a prospecting nature. Because of the prevailing geologic conditions and limited extent of mineralization on the property, they recommend that the application be denied without prejudice. We concur in this recommendation.

DMEA Field Team, Region III

W. M. Traver

By W. M. Traver
Executive Officer

Encls.

Reviewed by
DMEA OPERATING COMMITTEE
11-9-56
(date)

TRANSMITTED OCT 31 1956

MINERAL DEPOSITS
RECEIVED
OCT 29 1956
GEOLOGICAL SURVEY
DENVER, COLORADO

Box 4126 University Station
Tucson, Arizona

DEPARTMENT OF THE INTERIOR

October 22, 1956

OCT 30 1956
REGION III
DENVER, COLORADO

MEMORANDUM

To: Executive Officer, DMEA Field Team, Region III

From: L. A. Stewart, U. S. Bureau of Mines
W. L. Emerick, U. S. Geological Survey

Through: W. R. Storms
E. N. Harshman

Subject: Docket DMEA 4416 (Copper), Bluebonnet Uranium Corporation (Copper Chief Claims), Graham and Pinal Counties, Arizona

Enclosed are the original and 8 copies of a joint field report on the above property, recommending denial of the application.

Lincoln A Stewart
L. A. Stewart
U. S. Bureau of Mines

W L Emerick
W. L. Emerick
U. S. Geological Survey

cc. W. M. Traver (8)
Mr. Shaw
Mr. Harshman
Mr. Storms

Reviewed by
DMEA OPERATING COMMITTEE
11-9-56

FOR UNITED STATES GOVERNMENT USE ONLY

TRANSMITTED
OCT 31 1956

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NOV 5 1956
D.M.E.A.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-4416 (Copper) Bluebonnet Uranium Corporation

Copper Chief group of Claims

Graham and Pinal Counties, Arizona

L. A. Stewart, Mining Engineer
U. S. Bureau of Mines

W. L. Emerick, Geologist
U. S. Geological Survey

October 23, 1956

Reviewed by
DMEA OPERATING COMMITTEE
11-9-56
(date)

RECEIVED
1956

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The Bluebonnet Uranium Corp. applied for Defense Minerals Exploration Administration assistance to explore their Copper Chief group of claims in sec. 36, T. 4 S., sec. 1, T. 5 S., R. 18 E., and sec. 6, T. 5 S., R. 19 E., Pinal and Graham Counties, Arizona, for copper.

The application proposed the drilling of a pattern of 3 holes from 3 or more sites adjacent to a limestone-rhyolite porphyry contact. The first 2 holes of each set were to determine the dip of the contact; the third hole of each set was to be drilled on the limestone side close and parallel to the contact. A total of 6,000 feet of diamond drilling was to be performed with attendant work involving repair and maintenance of 12 miles of access road, construction of roads to drill sites, rehabilitation of an existing camp building, assaying, etc., for a total estimated cost of $87,598.00.

Application for Government aid was received by the Defense Minerals Exploration Administration on August 9, 1956, forwarded to the Field Team on August 29, and received by the Tucson office September 4. A field investigation of the property was made on October 10, 1956, under docket DMEA-4416.

The group of 10 adjacent unpatented claims is owned by Armon and Myrtle Sanders, 7 of which were acquired by the Bluebonnet Corp. under a 10-year lease option agreement dated May 12, 1956. The applicant recently has secured a lease on the other 3 claims.

A total of 48 tons of ore in 4 shipments has been made since 1949, incidental to prospecting and exploration work. The average content of the ore was 5.9 percent copper, 3.09 ounces silver, and 0.033 ounces gold per ton.

In the area of the Copper Chief claims, limestone has been faulted against a downthrown mass of rhyolite porphyry on the northeast. The limestone has been folded by underlying intrusives into a dome whose axis trends N. 45° W. Several northwest trending rhyolite porphyry dikes cut through the limestone, and numerous short faults, some of which show copper mineralization, are present in the limestone. Slippage or movement, indicated by breccia and gouge, as well as by minor folding and crumbling, has taken place in the limestone beds.

Ore occurrences are confined to limited areas at and near the intersections of faults with brecciated limestone beds, as thin veins along the faults and as fillings between and around breccia fragments. No replacement of the limestone was apparent and the ore deposits fade laterally to uneconomic limits.

Ore minerals in the deposits are malachite, cuprite, some chalcopyrite, and minor amounts of silver and gold. Gangue minerals are barite and iron oxides.

The most extensive workings are in Adit No. 1, where earlier workers and the applicant mined and shipped small tonnages of ore. The dip of the limestone strata is such that the adit progressively cuts lower members in the stratigraphic section. Other work on the property consists of several shallow shafts and prospects on weakly mineralized copper veins.

No exploration has been done at the Limestone-rhyolite porphyry fault contact, and some recent wagon-drilling in various locations on the property gave negative results.

Applicant's proposed drilling of several horizontal and inclined holes at his own expense does not appear destined to discover significant bodies of mineralized material, unless productive deposits occur below those exposed in the mine workings, or unless geologic conditions change markedly.

No reserves were calculated owing to the smallness and discontinuity of the deposits.

It can be concluded that surface exposures and present mine workings do not indicate extensive mineralization laterally, and perhaps vertically, along the fractures or in the brecciated limestone, and that exploratory drilling probably would not discover ore deposits of significant size or grade, even in depth. Applicant's exploration proposals are visionary and of a prospecting nature. Under the prevailing geologic conditions and limited extent of mineralization on the property, it is therefore recommended that the application be denied without prejudice.

DMEA-4416 (COPPER) BLUEBONNET URANIUM CORPORATION
COPPER CHIEF GROUP OF CLAIMS
GRAHAM AND PINAL COUNTIES, ARIZONA

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ILLUSTRATIONS

Figure No.		
1	Location map	Following page 1
2	Claim map	" " 3
3	Geology of Copper Chief Claims Nos. 1, 2, and 3	In folder
4	Geology and Plan of Adit No. 1	" "

INTRODUCTION

The Bluebonnet Uranium Corp., a Delaware corporation with home office at 2284 West Holcombe Blvd., Houston, Texas, and field office at Box 2380, Globe, Arizona, applied for Defense Minerals Exploration Administration assistance under docket DMEA-4416, to explore their Copper Chief group of claims for copper. The property, consisting of 7 contiguous unpatented claims in Graham and Pinal Counties, Arizona, is in sec. 36, T. 4 S. and sec. 1, T. 5 S., R. 18 E.; and sec. 6, T. 5 S., R. 19 E. (fig. 1).

The proposed application primarily involves a total of 6,000 feet of diamond drilling in a pattern of 3 holes from 3 or more sites adjacent to a limestone-rhyolite porphyry contact. Attendant work involves repair and maintenance of 12 miles of access road, construction of roads to drill sites, rehabilitation of an existing building, assaying, etc. The total cost is estimated at $87,598.00.

Field examination of the property for the DMEA was made on October 10, 1956 by W. L. Emerick, geologist, U. S. Geological Survey, and Lincoln A. Stewart, mining engineer, U. S. Bureau of Mines. William W. Sorsen, resident engineer for the Bluebonnet Uranium Corp., accompanied the field team on their examination.

LOCATION AND ACCESSIBILITY

The Copper Chief group of claims is located in the northwest part of the Stanley mining district, on the southwest side of Rawhide Mountain. The claims are reached by traveling 49 road miles southeast from Globe, Arizona, according to the following log:

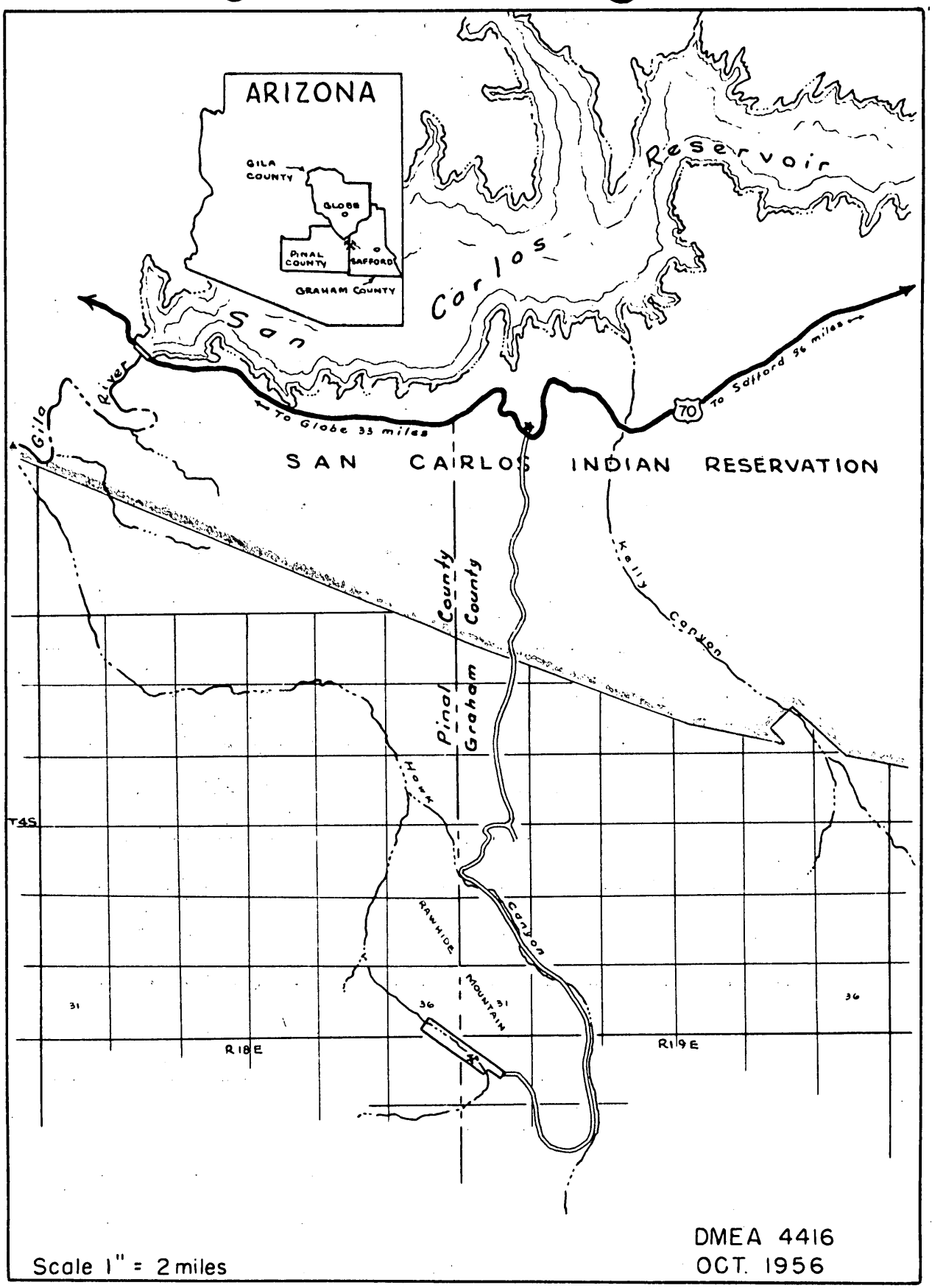


FIGURE - 1 - LOCATION MAP, BLUEBONNET URANIUM CORP.
PINAL AND GRAHAM COUNTIES, ARIZONA

0.0 Intersection U.S. Highways 60 and 70 on east side of Globe
32.5 Turn right off paved Highway 70 on dirt road signed Hawk Canyon
36.6 Keep straight ahead at gate
39.4 Keep straight ahead at road fork
42.0 Take left fork)
45.0 Take right fork) mostly up a dry wash
46.5 Take right fork out of wash
49.1 Arrive at camp.

If coming from Safford, follow U. S. Highway 70 northwest for 56 miles to the junction of the Hawk Canyon road.

The various mine workings are near the bottom of the steep slope of a high ridge, at an approximate altitude of 4,400 feet. Pilot roads go from the camp to the various workings.

The dirt road from the highway, in general, is narrow, crooked, and rough, with occasional stretches of steep gradient.

OWNERSHIP AND EXTENT OF PROPERTY

Listed in the docket are claims Copper Chief Nos. 1, 2, 3, 4, 5, 7, and 9, owned by Armon and Myrtle Sanders. A 10-year lease has been executed by the Bluebonnet Uranium Corp. under an agreement dated May 12, 1956. However, the Lease and Option Agreement specifically names claims Nos. 1 through 6, but states that any other claims located in the area by the lessee shall be in the name of the lessor and shall become subject to the terms of the agreement. Consequently, the disparity between the two instruments is of no importance.

The claim map accompanying the docket indicates a conflicting claim with prior rights (Hi Lonesome No. 1) in the center of the group. This difficulty has been resolved in the meanwhile: this and the other two Hi Lonesome claims endlining Copper Chief Nos. 1 and 2 to the southeast also have been leased from the Sanders'.

The claim map, figure 2, therefore shows 10 claims under lease as of October 10, 1956, the date of examination.

HISTORY, PRODUCTION, AND GRADE

The date of location of the Copper Chief Nos. 1, 2 and 3 claims is unknown to the writers, but the Lease and Option Agreement indicates that Copper Chief Nos. 4, 5, and 6 were located by the Lessors on May 5, 1956.

The small production from the property has been incidental to exploration. Four shipments were made to the International Smelter at Miami, Arizona, as follows:

Date	Shipper	Tons	% Copper	ozs./ton Silver	ozs./ton Gold
March 1949	Sanders	11.603	6.59	4.03	0.04
March 1949	Sanders	9.067	7.52	3.63	.04
January 1950	Sanders	22.055	4.85	2.55	.033
July 1956	Bluebonnet	5.925	5.70	2.41	.01
Weighted Average		48.650	5.87	3.09	0.033

Several old cuts obscured by erosion indicate that prospecting antedated 1949.

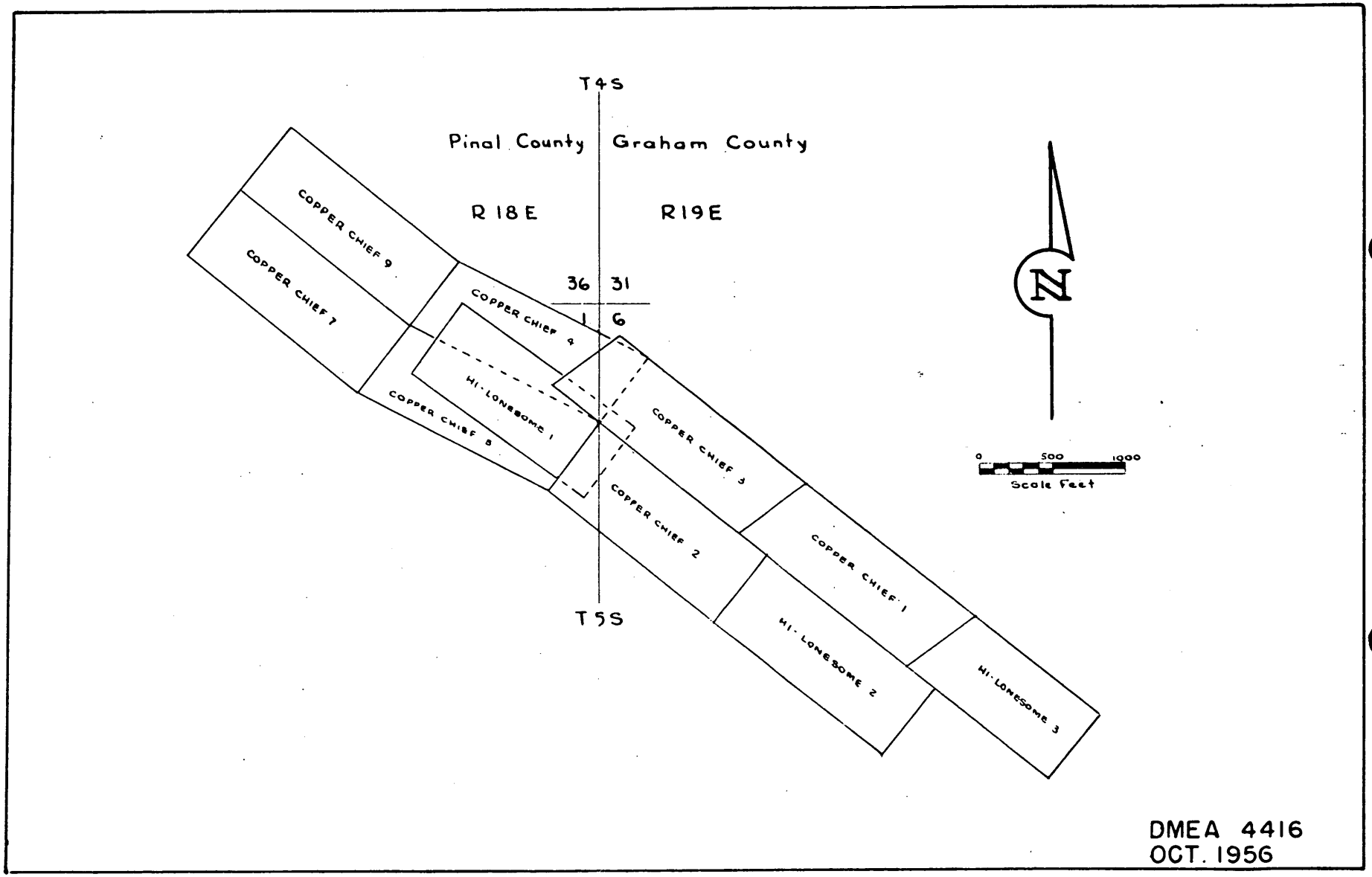


FIGURE - 2 - CLAIM MAP - BLUEBONNET URANIUM CORP.

PRESENT STATUS

The Bluebonnet Corp. currently employs 2 men who are driving an adit to intersect a mineralized area near the northeast corner of Copper Chief No. 2, from which the owner mined 22 tons of 7 percent copper ore in 1949.

In July 1956 the corporation did a small amount of drifting and raising in the No. 1 mine, shipping 6 tons of 5.7 percent copper ore from this operation.

There is a camp building equipped for 4-man occupancy; butane gas range, refrigerator, and water heater; small gasoline-driven light plant; 800 gallon water tank on hillside above camp. Equipment noted as follows:

4-wheel portable Chicago Pneumatic 365 cfm compressor (new); International TD-9 dozer (old) presently equipped with a 1 cu.yd. shovel lift; Gardner Denver 7½ H.P. 2-drum air hoist, cable, and small scraper; International 7-ton, R-190, dump truck; 2 mine cars, track, jackhammer and small tools.

GEOLOGY AND RESERVES

The Stanley mining region is underlain by rocks ranging from pre-Cambrian to Quaternary. Metamorphic rocks consist of schists, gneisses, and quartzite, and the stratified rocks of limestone, sandstone, shale, and conglomerate. The stratified rocks of the region are tilted, fractured, and folded. Batholithic intrusions of granite, quartz monzonite, and other igneous rocks of probable Tertiary age cover a large part of the region.

In the area of the Copper Chief mine (Fig. 3), limestone, probably the Naco of Pennsylvanian and Permian age, has been folded by underlying intrusives into a dome. Long axis of the dome trends about N. 45° W. The dips in the limestone average about 45° on the northeast flank of the dome and steepen in places to around 80° on the southwest flank. A northwestward trending fault brings the limestone against a mass of rhyolite porphyry on the northeast. The fault is covered but appears to be normal, with the rhyolite porphyry and overlying Cretaceous sediments to the northeast beyond the limits of the report area on the downthrown side. Several rhyolite porphyry dikes, trending northwest, cut through the limestone.

Numerous short faults are present in the limestone and in places there has been alteration of the limestone over a narrow zone adjacent to the faults. Some of these faults are probably tension faults produced during folding of the limestones, whereas others appear to be the result of later adjustments in the sediments. Weak displays of copper mineralization occur along the outcrop on some of these short faults, and some of the mineralized fractures roughly parallel the main fault contact of the limestone and rhyolite porphyry. Slippage or movement has taken place along the bedding of the limestones as indicated by brecciation of beds. Minor folding and crumbling within the beds occurs in places.

The mineralized solutions seem to have favored the brecciated limestone as loci of deposition, and ore occurrences are confined to limited areas at and near the intersection of faults with the brecciated beds. Deposition took place as thin veins along the faults and

as fillings between and around fragments of the breccia. No replacement of the limestone was apparent. Ore deposition appears to fade laterally over short distances to uneconomic limits. Vertical extent is unknown but may not be extensive. Post-mineral faults have cut off the ore in places, as for example, in Adit #1 (Fig. 4).

Ore minerals in the deposits are malachite, cuprite, and some chalcopyrite. Silver and gold are present as indicated in applicant's report. Barite and iron oxides form the gangue minerals. Secondary enrichment is minor and generally absent.

The best display of mineralization in the report area was seen in a 16-foot shaft at 'A' (Fig. 3), where two steeply-dipping faults, one striking N. 10° W. and the other N. 18° W., intersect a third steeply-dipping fault striking N. 45° W. Mineralization occurs along the faults and in brecciated limestone over a limited area at and near the intersections. Ore minerals are malachite and cuprite in a barite and iron oxide gangue as thin veins and as deposits along and around the breccia fragments. The shaft was dug in 1949 by previous prospectors, who shipped 22 tons of ore from it. Applicant is presently driving Adit 'B' (Fig. 3) to intersect the faults at depth.

Earlier operators drove Adit No. 1 ('C', Fig. 3) for 155 feet southwest, cutting copper mineralization in breccia at 25 feet and a mineralized vein of copper at 75 feet from the portal. Later in 1950, Sanders drove the crosscut from the copper mineralization 25 feet from the portal and intersected an extension of the mineralized fault zone that was originally cut at 75 feet in the adit. The crosscut was continued for a linear distance of about 300 feet through unmineralized

thin-bedded limestones and shales into massive, crystalline limestone. The crosscut was stopped after driving for about 50 feet through the barren, massive and crystalline limestone. The limestones dip about 45° NE. so the crosscut was driven down the stratigraphic section. Sanders mined and shipped 20 tons of ore from the mineralized fault zone in the adit, 75 feet from the portal and also at its intersection to the northwest with the crosscut. Applicant has driven a drift from the crosscut southeast along the mineralized fault zone, extended it beyond the adit (Fig. 4), and driven a 33-foot raise to the surface. An E-W fault offset the ore in the drift (Fig. 4). Ore minerals along the fault zone in the drift and raise are malachite, cuprite, and chalcopyrite in a barite and iron oxide gangue. A few widely scattered occurrences of galena with barite were found in the adit southwest of the copper zone. A shipment of 6 tons of ore was made by the applicant from the drift and raise, and inspection of the drift and raise suggests ore limits may have been reached.

Adit No. 2 ('D', Fig. 3) is 38 feet above and 80 feet to the south of Adit No. 1. It is 40 feet long, with copper mineralization for about 4 feet at the portal.

Adit No. 3 ('E', Fig. 3) is a 40-foot tunnel driven west to intersect a fault striking N. 40° W. and dipping 60° NE. that carries a thin vein of malachite and cuprite. A raise was driven 16 feet to the surface along the vein. The west wall of the raise was driven along the northeast contact of a rhyolite porphyry dike and the limestone, and the dike probably is responsible for the 5-foot zone of

alteration in the brecciated limestone exposed near the top of the raise. No minable ore was obtained from the workings.

At 'F' (Fig. 3) a 20-foot open cut exposes a thin vein of copper in brecciated limestone.

At 'G' (Fig. 3) another shallow open cut exposes some copper mineralization in a brecciated limestone bed.

At 'H' (Fig. 3) applicant reports a 30-inch ore zone in a pit 6 feet deep. No mining or further exploration has been done at the prospect. This prospect was not visited.

At 'J' (Fig. 3) a shallow pit shows copper mineralization with iron oxides in a brecciated limestone.

There was no visible evidence that any prospecting or exploration had been done anywhere in the report area at the limeston-rhyolite porphyry contact, although the cover over the contact is not thick.

Applicant recently drilled an unknown number of wagon drill holes at various locations in the report area, of which two locations were at 'E' and 'G' (Fig. 3). Overall results were negative.

Applicant stated that the company had contracted for 2,000 feet of diamond-drilling to be used for horizontal and inclined holes. Initial drilling under the contract will be approximately at Site X (Fig. 3), where one or more holes will be drilled to intersect at depth the same fault intersections to which Adit 'B' (Fig. 3) is being driven.

If any of these horizontal or inclined drill holes of the applicant go beyond the fault intersections in a deeper search for ore,

the Adit No. 1 mine shows part of the probable stratigraphic section the applicant may expect in his drilling. Inspection of the crosscut extension to the face, in the Adit No. 1 mine, was made during the field examination and found to be barren of any productive mineralization beyond the copper zone already mined. Beyond the copper zone 75 feet from the portal, the crosscut extension penetrated thin-bedded limestones and shales, and for about the last 50 feet was in massive, crystalline limestone. There were many bedding plane faults, indicating movement or slippage along those planes, but aside from hematitic gouge along some of the faults, no copper, or other, mineralization was present. Unless productive deposits occur in the sediments below those exposed in the mine workings, or unless geologic conditions change markedly, it does not appear that significant bodies of mineralized material could be anticipated by the applicant.

Owing to the smallness and discontinuity of the deposits presently exposed, it would be difficult to estimate reserves, but about 48 tons of ore have been produced and shipped from the property since 1949.

PROPOSED EXPLORATION AND COST

The exploration proposed by the applicant postulates zones of ore in favorable limestone beds adjacent to the rhyolite porphyry contact.

The project, estimated to cost $87,598.00, proposes the following:

A) Diamond drilling

From a point 50 feet from the limestone-intrusive contact, on the intrusive side, drill 2 holes at -20° and -50° to establish the dip of the contact. Move to the limestone side 30 feet from the contact and drill parallel to the contact for a distance of 500 to 1,000 feet or more.

Perform the same pattern of drilling at 2 other sites spaced 1,000 feet apart. Correlate information obtained, select additional drill sites for holes of varying length to make a total of 6,000 feet of drilling.

Drilling by contract, estimated at $9.00/foot		$54,000.00

B) Bulldozer work

Repair and maintain 12 miles of access road, 40 hrs. Construct drill access roads and drill sites, 40 hrs. 80 hours @ $14.00/hr.		1,120.00

C) Labor

Sampler (available 2 shifts) @ $20.00/day	$ 5,400.00	
Supervision and engineering @ $1,000.00/mo.	10,000.00	
Consulting geologist	1,000.00	16,400.00

D) Rental

Camp building (fully equipped) @ $50.00/mo.	$ 500.00	
Pickup, ½ ton @ $200.00/mo.	2,000.00	
Transit @ $45.00/mo.	450.00	
Core storage (in garage) @ $15.00/mo.	150.00	3,100.00

E) Rehabilitation and sampling equipment

"Winterizing" camp building	$ 360.00	
Equipment for sampling and sample drying	500.00	$ 860.00

F) Assaying and miscellaneous

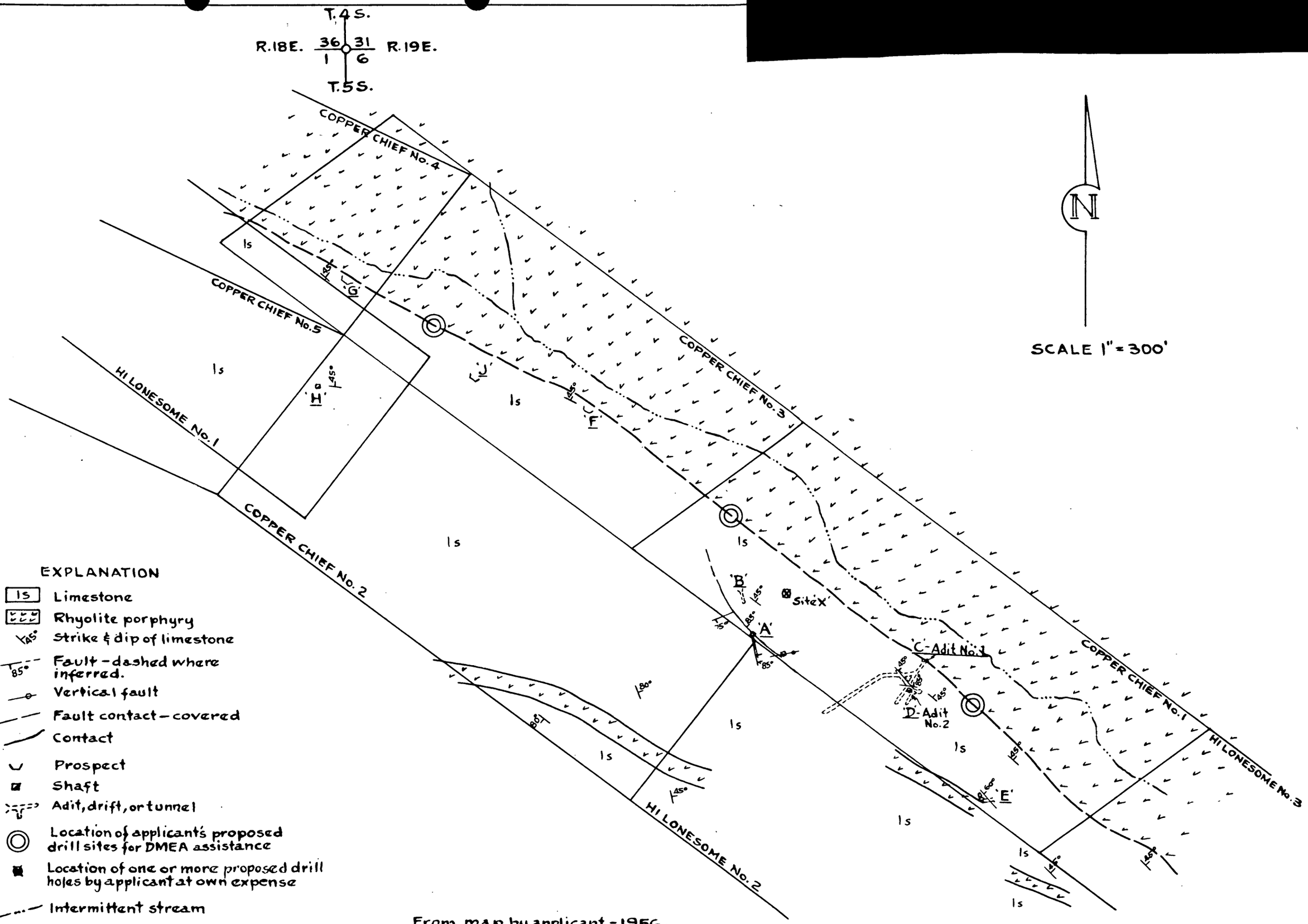
Assaying, estimated 600 samples, Cu, Au, Ag, @ $2.50 each	$ 1,500.00	
Spectrographic analyses, estimated 10 samples @ $15.00 each	150.00	
Accounting	500.00	
Payroll taxes, liability, compensation	1,968.00	4,118.00

G) Contingencies (10%)	8,000.00
Total estimated cost of project	$87,598.00
Cost per foot	$ 14.60

The above is calculated on a basis of 10 months work.

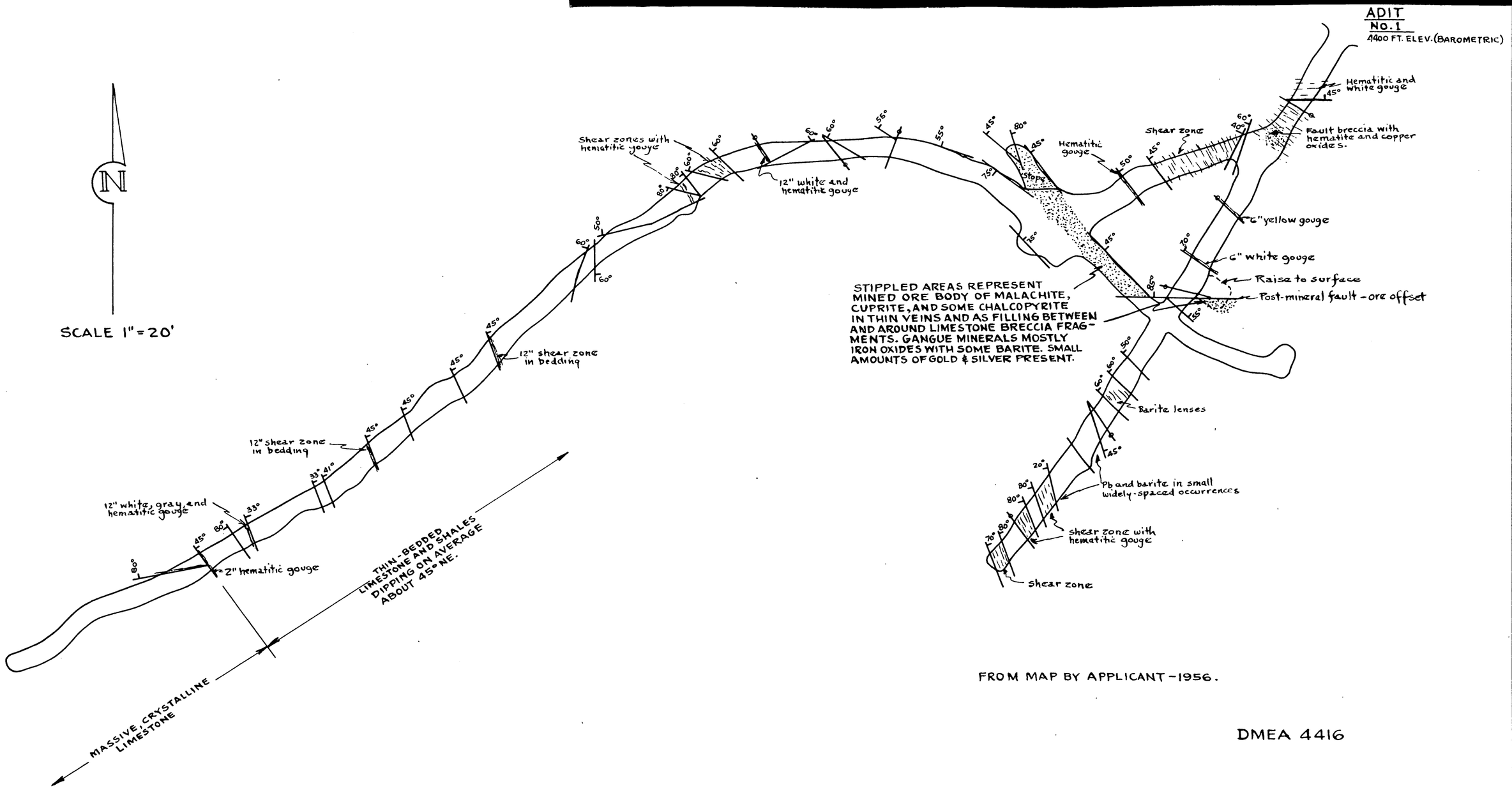
CONCLUSIONS AND RECOMMENDATIONS

It is concluded by the examining team that surface exposures and present mine workings do not indicate that mineralization is extensive laterally, and perhaps vertically, along the fractures or in the brecciated limestone, and that exploratory drilling probably would not discover ore deposits of significant size or grade. Applicant's exploration proposals are visionary and of a prospecting nature, and it appears that the vision has been stimulated by an attempt to project conditions at nearby and distant producing areas to this one. Under the prevailing geologic conditions and the limited extent of mineralization, the field examiners recommend that the application be denied without prejudice.



From map by applicant - 1956.

FIGURE 3. - GEOLOGY OF THE COPPER CHIEF CLAIMS Nos. 1, 2, & 3, BLUEBONNET URANIUM CORPORATION, GRAHAM AND PINAL COUNTIES, ARIZONA DMEA 4416



FROM MAP BY APPLICANT - 1956.

DMEA 4416

FIGURE 4.- GEOLOGY AND PLAN OF ADIT NO. 1, COPPER CHIEF CLAIMS, BLUEBONNET URANIUM CORPORATION, GRAHAM AND PINAL COUNTIES, ARIZONA.

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

224 New Customhouse
Denver 2, Colorado

October 31, 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Joint Report of Examination, Docket DMEA-4416 (Copper)
Bluebonnet Uranium Corporation (Copper Chief Claims)
Graham and Pinal Counties, Arizona

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

The field examiners concur that the applicant's exploration proposals are visionary and of a prospecting nature. Because of the prevailing geologic conditions and limited extent of mineralization on the property, they recommend that the application be denied without prejudice. We concur in this recommendation.

DMEA Field Team, Region III

Original signed by
W M TRAVER

By W. M. Traver
Executive Officer

Encls.

Reviewed by
DMEA OPERATING COMMITTEE
11/9/56
(date)

TRANSMITTED OCT 31 1956

MINERAL DEPOSITS
DMEA
RECEIVED
OCT 29 1956

GEOLOGICAL SURVEY
DENVER, COLORADO

Box 4126 University Station
Tucson, Arizona

DEPARTMENT OF THE INTERIOR October 22, 1956

OCT 30 1956
REGION III
DENVER, COLORADO

MEMORANDUM

To: Executive Officer, DMEA Field Team, Region III

From: L. A. Stewart, U. S. Bureau of Mines
W. L. Emerick, U. S. Geological Survey

Through: W. R. Storms
E. N. Harshman

Subject: Docket DMEA 4416 (Copper), Bluebonnet Uranium Corporation (Copper Chief Claims), Graham and Pinal Counties, Arizona

Enclosed are the original and 8 copies of a joint field report on the above property, recommending denial of the application.

Lincoln A. Stewart
L. A. Stewart
U. S. Bureau of Mines

W L Emerick
W. L. Emerick
U. S. Geological Survey

cc. W. M. Traver (8)
Mr. Shaw
Mr. Harshman
Mr. Storms

Reviewed by
DMEA OPERATING COMMITTEE

(date)

TRANSMITTED
OCT 31 1956

FOR UNITED STATES GOVERNMENT USE ONLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-4416 (Copper) Bluebonnet Uranium Corporation

Copper Chief Group of Claims

Graham and Pinal Counties, Arizona

L. A. Stewart, Mining Engineer
U. S. Bureau of Mines

W. L. Emerick, Geologist
U. S. Geological Survey

October 23, 1956

Reviewed by
DMEA OPERATING COMMITTEE
(Date)

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The Bluebonnet Uranium Corp. applied for Defense Minerals Exploration Administration assistance to explore their Copper Chief group of claims in sec. 36, T. 4 S., sec. 1, T. 5 S., R. 18 E., and sec. 6, T. 5 S., R. 19 E., Pinal and Graham Counties, Arizona, for copper.

The application proposed the drilling of a pattern of 3 holes from 3 or more sites adjacent to a limestone-rhyolite porphyry contact. The first 2 holes of each set were to determine the dip of the contact; the third hole of each set was to be drilled on the limestone side close and parallel to the contact. A total of 6,000 feet of diamond drilling was to be performed with attendant work involving repair and maintenance of 12 miles of access road, construction of roads to drill sites, rehabilitation of an existing camp building, assaying, etc., for a total estimated cost of $87,598.00.

Application for Government aid was received by the Defense Minerals Exploration Administration on August 9, 1956, forwarded to the Field Team on August 29, and received by the Tucson office September 4. A field investigation of the property was made on October 10, 1956, under docket DMEA-4416.

The group of 10 adjacent unpatented claims is owned by Armon and Myrtle Sanders, 7 of which were acquired by the Bluebonnet Corp. under a 10-year lease option agreement dated May 12, 1956. The applicant recently has secured a lease on the other 3 claims.

A total of 48 tons of ore in 4 shipments has been made since 1949, incidental to prospecting and exploration work. The average content of the ore was 5.9 percent copper, 3.09 ounces silver, and 0.033 ounces gold per ton.

In the area of the Copper Chief claims, limestone has been faulted against a downthrown mass of rhyolite porphyry on the northeast. The limestone has been folded by underlying intrusives into a dome whose axis trends N. 45° W. Several northwest trending rhyolite porphyry dikes cut through the limestone, and numerous short faults, some of which show copper mineralization, are present in the limestone. Slippage or movement, indicated by breccia and gouge, as well as by minor folding and crumbling, has taken place in the limestone beds.

Ore occurrences are confined to limited areas at and near the intersections of faults with brecciated limestone beds, as thin veins along the faults and as fillings between and around breccia fragments. No replacement of the limestone was apparent and the ore deposits fade laterally to uneconomic limits.

Ore minerals in the deposits are malachite, cuprite, some chalcopyrite, and minor amounts of silver and gold. Gangue minerals are barite and iron oxides.

The most extensive workings are in Adit No. 1, where earlier workers and the applicant mined and shipped small tonnages of ore. The dip of the limestone strata is such that the adit progressively cuts lower members in the stratigraphic section. Other work on the property consists of several shallow shafts and prospects on weakly mineralized copper veins.

No exploration has been done at the Limestone-rhyolite porphyry fault contact, and some recent wagon-drilling in various locations on the property gave negative results.

Applicant's proposed drilling of several horizontal and inclined holes at his own expense does not appear destined to discover significant bodies of mineralized material, unless productive deposits occur below those exposed in the mine workings, or unless geologic conditions change markedly.

No reserves were calculated owing to the smallness and discontinuity of the deposits.

It can be concluded that surface exposures and present mine workings do not indicate extensive mineralization laterally, and perhaps vertically, along the fractures or in the brecciated limestone, and that exploratory drilling probably would not discover ore deposits of significant size or grade, even in depth. Applicant's exploration proposals are visionary and of a prospecting nature. Under the prevailing geologic conditions and limited extent of mineralization on the property, it is therefore recommended that the application be denied without prejudice.

DMEA-4416 (COPPER) BLUEBONNET URANIUM CORPORATION
COPPER CHIEF GROUP OF CLAIMS
GRAHAM AND PINAL COUNTIES, ARIZONA

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ILLUSTRATIONS

Figure No.		
1	Location map	Following page 1
2	Claim map	" " 3
3	Geology of Copper Chief Claims Nos. 1, 2, and 3	In folder
4	Geology and Plan of Adit No. 1	" "

INTRODUCTION

The Bluebonnet Uranium Corp., a Delaware corporation with home office at 2284 West Holcombe Blvd., Houston, Texas, and field office at Box 2380, Globe, Arizona, applied for Defense Minerals Exploration Administration assistance under docket DMEA-4416, to explore their Copper Chief group of claims for copper. The property, consisting of 7 contiguous unpatented claims in Graham and Pinal Counties, Arizona, is in sec. 36, T. 4 S. and sec, 1, T. 5 S., R. 18 E.; and sec. 6, T. 5 S., R. 19 E. (fig. 1).

The proposed application primarily involves a total of 6,000 feet of diamond drilling in a pattern of 3 holes from 3 or more sites adjacent to a limestone-rhyolite porphyry contact. Attendant work involves repair and maintenance of 12 miles of access road, construction of roads to drill sites, rehabilitation of an existing building, assaying, etc. The total cost is estimated at $87,598.00.

Field examination of the property for the DMEA was made on October 10, 1956 by W. L. Emerick, geologist, U. S. Geological Survey, and Lincoln A. Stewart, mining engineer, U. S. Bureau of Mines. William W. Sorsen, resident engineer for the Bluebonnet Uranium Corp., accompanied the field team on their examination.

LOCATION AND ACCESSIBILITY

The Copper Chief group of claims is located in the northwest part of the Stanley mining district, on the southwest side of Rawhide Mountain. The claims are reached by traveling 49 road miles southeast from Globe, Arizona, according to the following log:

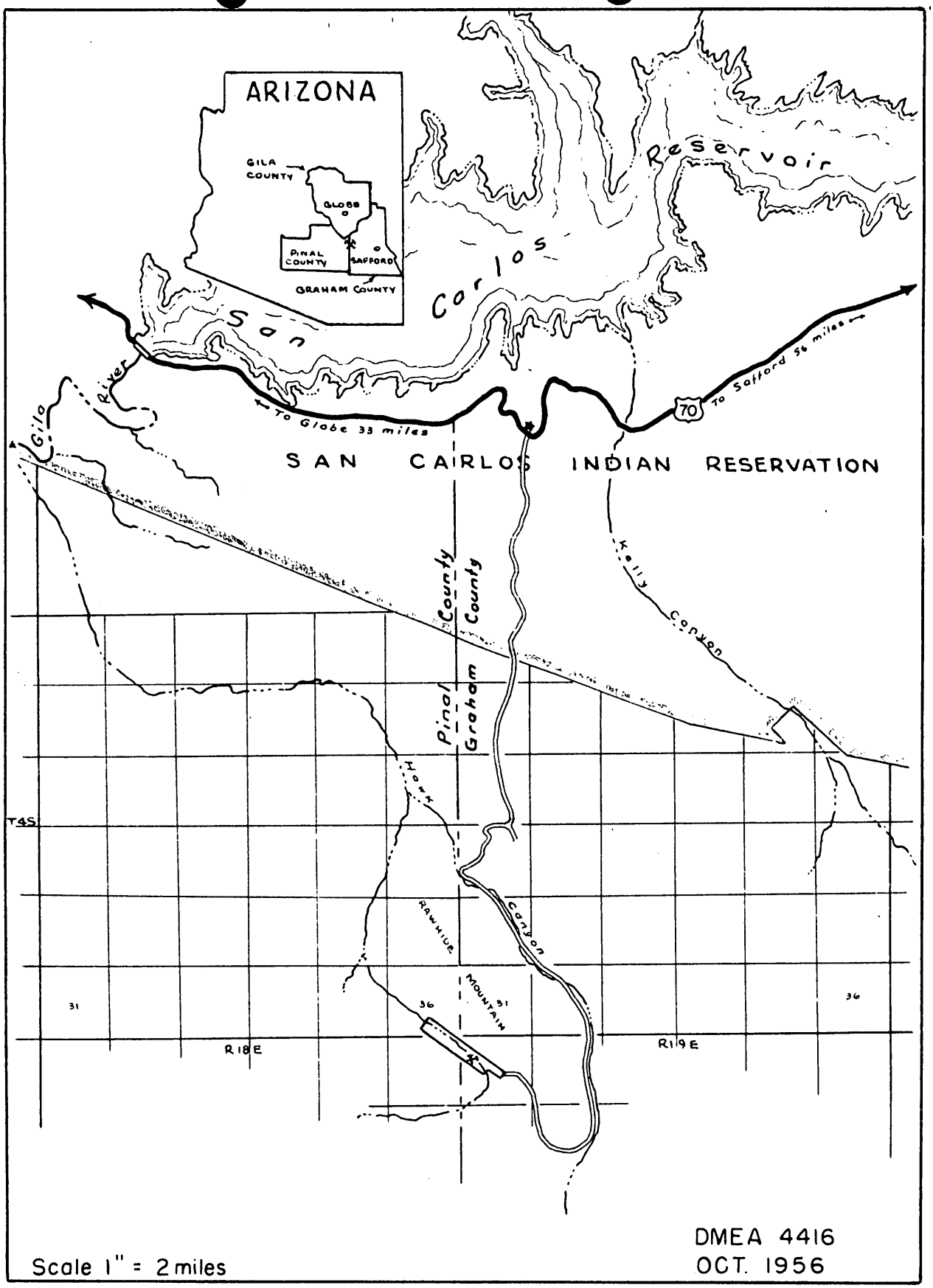

FIGURE - 1 - LOCATION MAP, BLUEBONNET URANIUM CORP.
PINAL AND GRAHAM COUNTIES, ARIZONA

0.0 Intersection U.S. Highways 60 and 70 on east side of Globe
32.5 Turn right off paved Highway 70 on dirt road signed Hawk Canyon
36.6 Keep straight ahead at gate
39.4 Keep straight ahead at road fork
42.0 Take left fork)
45.0 Take right fork) mostly up a dry wash
46.5 Take right fork out of wash
49.1 Arrive at camp.

If coming from Safford, follow U. S. Highway 70 northwest for 56 miles to the junction of the Hawk Canyon road.

The various mine workings are near the bottom of the steep slope of a high ridge, at an approximate altitude of 4,400 feet. Pilot roads go from the camp to the various workings.

The dirt road from the highway, in general, is narrow, crooked, and rough, with occasional stretches of steep gradient.

OWNERSHIP AND EXTENT OF PROPERTY

Listed in the docket are claims Copper Chief Nos. 1, 2, 3, 4, 5, 7, and 9, owned by Armon and Myrtle Sanders. A 10-year lease has been executed by the Bluebonnet Uranium Corp. under an agreement dated May 12, 1956. However, the Lease and Option Agreement specifically names claims Nos. 1 through 6, but states that any other claims located in the area by the lessee shall be in the name of the lessor and shall become subject to the terms of the agreement. Consequently, the disparity between the two instruments is of no importance.

The claim map accompanying the docket indicates a conflicting claim with prior rights (Hi Lonesome No. 1) in the center of the group. This difficulty has been resolved in the meanwhile: this and the other two Hi Lonesome claims endlining Copper Chief Nos. 1 and 2 to the southeast also have been leased from the Sanders'.

The claim map, figure 2, therefore shows 10 claims under lease as of October 10, 1956, the date of examination.

HISTORY, PRODUCTION, AND GRADE

The date of location of the Copper Chief Nos. 1, 2 and 3 claims is unknown to the writers, but the Lease and Option Agreement indicates that Copper Chief Nos. 4, 5, and 6 were located by the Lessors on May 5, 1956.

The small production from the property has been incidental to exploration. Four shipments were made to the International Smelter at Miami, Arizona, as follows:

Date	Shipper	Tons	% Copper	ozs./ton Silver	ozs./ton Gold
March 1949	Sanders	11.603	6.59	4.03	0.04
March 1949	Sanders	9.067	7.52	3.63	.04
January 1950	Sanders	22.055	4.85	2.55	.033
July 1956	Bluebonnet	5.925	5.70	2.41	.01
Weighted Average		48.650	5.87	3.09	0.033

Several old cuts obscured by erosion indicate that prospecting antedated 1949.

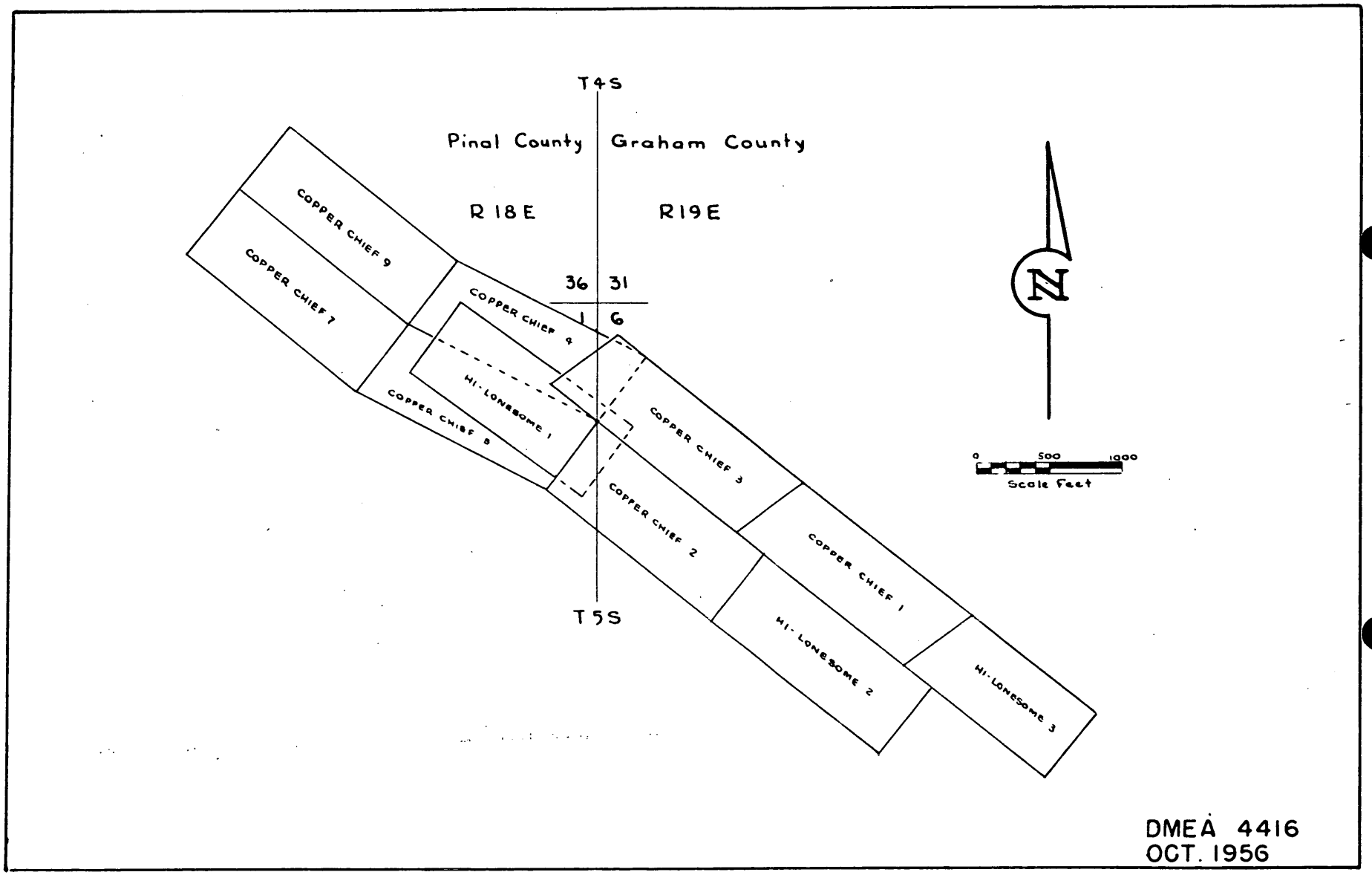

FIGURE-2-CLAIM MAP-BLUEBONNET URANIUM CORP.

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PRESENT STATUS

The Bluebonnet Corp. currently employs 2 men who are driving an adit to intersect a mineralized area near the northeast corner of Copper Chief No. 2, from which the owner mined 22 tons of 7 percent copper ore in 1949.

In July 1956 the corporation did a small amount of drifting and raising in the No. 1 mine, shipping 6 tons of 5.7 percent copper ore from this operation.

There is a camp building equipped for 4-man occupancy; butane gas range, refrigerator, and water heater; small gasoline-driven light plant; 800 gallon watef tank on hillside above camp. Equipment noted as follows:

4-wheel portable Chicago Pneumatic 365 cfm compressor (new); International TD-9 dozer (old) presently equipped with a 1 cu.yd. shovel lift; Gardner Denver 7½ H.P. 2-drum air hoist, cable, and small scraper; International 7-ton, R-190, dump truck; 2 mine cars, track, jackhammer and small tools.

GEOLOGY AND RESERVES

The Stanley mining region is underlain by rocks ranging from pre-Cambrian to Quaternary. Metamorphic rocks consist of schists, gneisses, and quartzite, and the stratified rocks of limestone, sandstone, shale, and conglomerate. The stratified rocks of the region are tilted, fractured, and folded. Batholithic intrusions of granite, quartz monzonite, and other igneous rocks of probable Tertiary age cover a large part of the region.

In the area of the Copper Chief mine (Fig. 3), limestone, probably the Naco of Pennsylvanian and Permian age, has been folded by underlying intrusives into a dome. Long axis of the dome trends about N. 45° W. The dips in the limestone average about 45° on the northeast flank of the dome and steepen in places to around 80° on the southwest flank. A northwestward trending fault brings the limestone against a mass of rhyolite porphyry on the northeast. The fault is covered but appears to be normal, with the rhyolite porphyry and overlying Cretaceous sediments to the northeast beyond the limits of the report area on the downthrown side. Several rhyolite porphyry dikes, trending northwest, cut through the limestone.

Numerous short faults are present in the limestone and in places there has been alteration of the limestone over a narrow zone adjacent to the faults. Some of these faults are probably tension faults produced during folding of the limestones, whereas others appear to be the result of later adjustments in the sediments. Weak displays of copper mineralization occur along the outcrop on some of these short faults, and some of the mineralized fractures roughly parallel the main fault contact of the limestone and rhyolite porphyry. Slippage or movement has taken place along the bedding of the limestones as indicated by brecciation of beds. Minor folding and crumbling within the beds occurs in places.

The mineralized solutions seem to have favored the brecciated limestone as loci of deposition, and ore occurrences are confined to limited areas at and near the intersection of faults with the brecciated beds. Deposition took place as thin veins along the faults and

as fillings between and around fragments of the breccia. No replacement of the limestone was apparent. Ore deposition appears to fade laterally over short distances to uneconomic limits. Vertical extent is unknown but may not be extensive. Post-mineral faults have cut off the ore in places, as for example, in Adit #1 (Fig. 4).

Ore minerals in the deposits are malachite, cuprite, and some chalcopyrite. Silver and gold are present as indicated in applicant's report. Barite and iron oxides form the gangue minerals. Secondary enrichment is minor and generally absent.

The best display of mineralization in the report area was seen in a 16-foot shaft at 'A' (Fig. 3), where two steeply-dipping faults, one striking N. 10° W. and the other N. 18° W., intersect a third steeply-dipping fault striking N. 45° W. Mineralization occurs along the faults and in brecciated limestone over a limited area at and near the intersections. Ore minerals are malachite and cuprite in a barite and iron oxide gangue as thin veins and as deposits along and around the breccia fragments. The shaft was dug in 1949 by previous prospectors, who shipped 22 tons of ore from it. Applicant is presently driving Adit 'B' (Fig. 3) to intersect the faults at depth.

Earlier operators drove Adit No. 1 ('C', Fig. 3) for 155 feet southwest, cutting copper mineralization in breccia at 25 feet and a mineralized vein of copper at 75 feet from the portal. Later in 1950, Sanders drove the crosscut from the copper mineralization 25 feet from the portal and intersected an extension of the mineralized fault zone that was originally cut at 75 feet in the adit. The crosscut was continued for a linear distance of about 300 feet through unmineralized

thin-bedded limestones and shales into massive, crystalline limestone. The crosscut was stopped after driving for about 50 feet through the barren, massive and crystalline limestone. The limestones dip about 45° NE. so the crosscut was driven down the stratigraphic section. Sanders mined and shipped 20 tons of ore from the mineralized fault zone in the adit, 75 feet from the portal and also at its intersection to the northwest with the crosscut. Applicant has driven a drift from the crosscut southeast along the mineralized fault zone, extended it beyond the adit (Fig. 4), and driven a 33-foot raise to the surface. An E-W fault offset the ore in the drift (Fig. 4). Ore minerals along the fault zone in the drift and raise are malachite, cuprite, and chalcopyrite in a barite and iron oxide gangue. A few widely scattered occurrences of galena with barite were found in the adit southwest of the copper zone. A shipment of 6 tons of ore was made by the applicant from the drift and raise, and inspection of the drift and raise suggests ore limits may have been reached.

Adit No. 2 ('D', Fig. 3) is 38 feet above and 80 feet to the south of Adit No. 1. It is 40 feet long, with copper mineralization for about 4 feet at the portal.

Adit No. 3 ('E', Fig. 3) is a 40-foot tunnel driven west to intersect a fault striking N. 40° W. and dipping 60° NE. that carries a thin vein of malachite and cuprite. A raise was driven 16 feet to the surface along the vein. The west wall of the raise was driven along the northeast contact of a rhyolite porphyry dike and the limestone, and the dike probably is responsible for the 5-foot zone of

alteration in the brecciated limestone exposed near the top of the raise. No minable ore was obtained from the workings.

At 'F' (Fig. 3) a 20-foot open cut exposes a thin vein of copper in brecciated limestone.

At 'G' (Fig. 3) another shallow open cut exposes some copper mineralization in a brecciated limestone bed.

At 'H' (Fig. 3) applicant reports a 30-inch ore zone in a pit 6 feet deep. No mining or further exploration has been done at the prospect. This prospect was not visited.

At 'J' (Fig. 3) a shallow pit shows copper mineralization with iron oxides in a brecciated limestone.

There was no visible evidence that any prospecting or exploration had been done anywhere in the report area at the limeston-rhyolite porphyry contact, although the cover over the contact is not thick.

Applicant recently drilled an unknown number of wagon drill holes at various locations in the report area, of which two locations were at 'E' and 'G' (Fig. 3). Overall results were negative.

Applicant stated that the company had contracted for 2,000 feet of diamond-drilling to be used for horizontal and inclined holes. Initial drilling under the contract will be approximately at Site X (Fig. 3), where one or more holes will be drilled to intersect at depth the same fault intersections to which Adit 'B' (Fig. 3) is being driven.

If any of these horizontal or inclined drill holes of the applicant go beyond the fault intersections in a deeper search for ore,

the Adit No. 1 mine shows part of the probable stratigraphic section the applicant may expect in his drilling. Inspection of the crosscut extension to the face, in the Adit No. 1 mine, was made during the field examination and found to be barren of any productive mineralization beyond the copper zone already mined. Beyond the copper zone 75 feet from the portal, the crosscut extension penetrated thin-bedded limestones and shales, and for about the last 50 feet was in massive, crystalline limestone. There were many bedding plane faults, indicating movement or slippage along those planes, but aside from hematitic gouge along some of the faults, no copper, or other, mineralization was present. Unless productive deposits occur in the sediments below those exposed in the mine workings, or unless geologic conditions change markedly, it does not appear that significant bodies of mineralized material could be anticipated by the applicant.

Owing to the smallness and discontinuity of the deposits presently exposed, it would be difficult to estimate reserves, but about 48 tons of ore have been produced and shipped from the property since 1949.

PROPOSED EXPLORATION AND COST

The exploration proposed by the applicant postulates zones of ore in favorable limestone beds adjacent to the rhyolite porphyry contact.

The project, estimated to cost $87,596.00, proposes the following:

A) Diamond drilling

From a point 50 feet from the limestone-intrusive contact, on the intrusive side, drill 2 holes at -20° and -50° to establish the dip of the contact. Move to the limestone side 30 feet from the contact and drill parallel to the contact for a distance of 500 to 1,000 feet or more.

Perform the same pattern of drilling at 2 other sites spaced 1,000 feet apart. Correlate information obtained, select additional drill sites for holes of varying length to make a total of 6,000 feet of drilling.

Drilling by contract, estimated at $9.00/foot		$54,000.00

B) Bulldozer work

Repair and maintain 12 miles of access road, 40 hrs.		
Construct drill access roads and drill sites, 40 hrs.		
80 hours @ $14.00/hr.		1,120.00

C) Labor

Sampler (available 2 shifts) @ $20.00/day	$ 5,400.00	
Supervision and engineering @ $1,000.00/mo.	10,000.00	
Consulting geologist	1,000.00	16,400.00

D) Rental

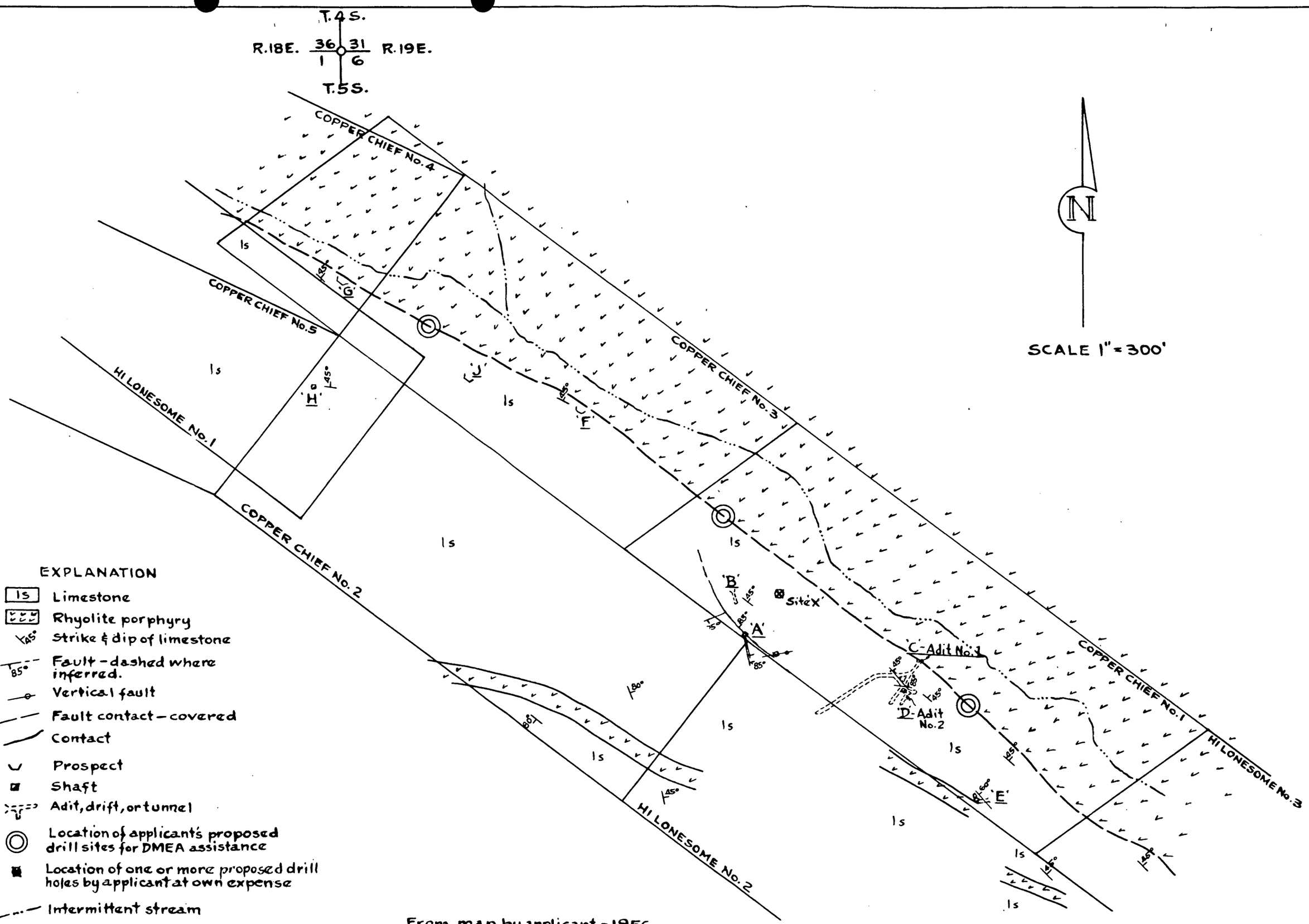
Camp building (fully equipped) @ $50.00/mo.	$ 500.00	
Pickup, ½ ton @ $200.00/mo.	2,000.00	
Transit @ $45.00/mo.	450.00	
Core storage (in garage) @ $15.00/mo.	150.00	3,100.00

E) Rehabilitation and sampling equipment		
"Winterizing" camp building	$ 360.00	
Equipment for sampling and sample drying	500.00	$ 860.00
F) Assaying and miscellaneous		
Assaying, estimated 600 samples, Cu, Au, Ag, @ $2.50 each	$ 1,500.00	
Spectrographic analyses, estimated 10 samples @ $15.00 each	150.00	
Accounting	500.00	
Payroll taxes, liability, compensation	1,968.00	4,118.00
G) Contingencies (10%)		8,000.00
Total estimated cost of project		$87,598.00
Cost per foot		$ 14.60

The above is calculated on a basis of 10 months work.

CONCLUSIONS AND RECOMMENDATIONS

It is concluded by the examining team that surface exposures and present mine workings do not indicate that mineralization is extensive laterally, and perhaps vertically, along the fractures or in the brecciated limestone, and that exploratory drilling probably would not discover ore deposits of significant size or grade. Applicant's exploration proposals are visionary and of a prospecting nature, and it appears that the vision has been stimulated by an attempt to project conditions at nearby and distant producing areas to this one. Under the prevailing geologic conditions and the limited extent of mineralization, the field examiners recommend that the application be denied without prejudice.



From map by applicant - 1956.

FIGURE 3. - GEOLOGY OF THE COPPER CHIEF CLAIMS Nos. 1, 2, & 3, BLUEBONNET URANIUM CORPORATION, GRAHAM AND PINAL COUNTIES, ARIZONA DMEA 4416

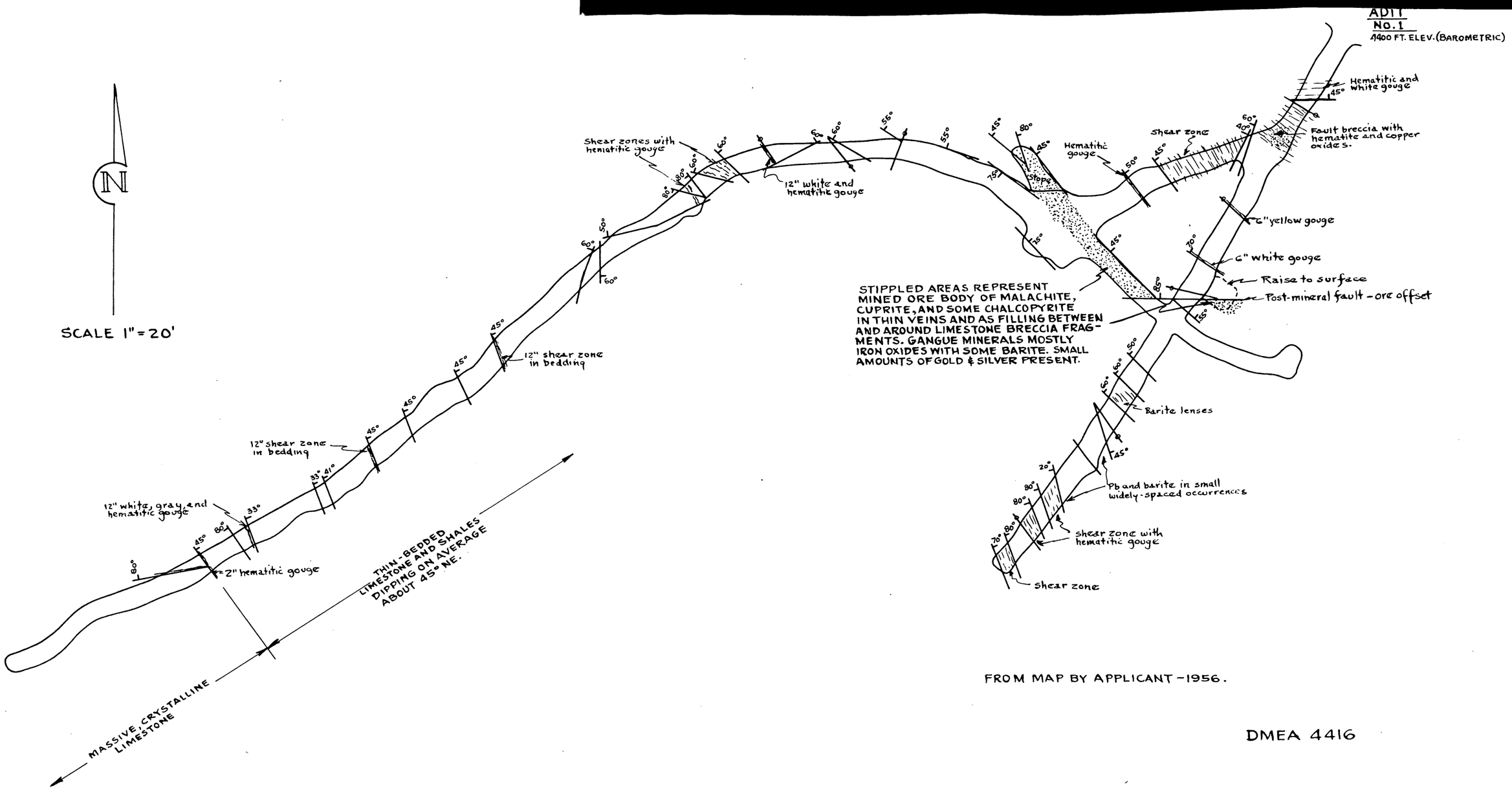


FIGURE 4.- GEOLOGY AND PLAN OF ADIT NO. 1, COPPER CHIEF CLAIMS, BLUEBONNET URANIUM CORPORATION, GRAHAM AND PINAL COUNTIES, ARIZONA.

DMEA
DEPARTMENT OF THE INTERIOR

AUG 31 1956

REGION III
DENVER, COLORADO

RECEIVED
SEP - 7 1956

August 31, 1956

Docket

Memorandum

To: W. R. Storms

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4416 (Copper) Bluebonnet Uranium Corp., (Copper Chief claims), Graham and Pinal Counties, Ariz.

Enclosed is the application for Bluebonnet Uranium Corp., Docket DMEA 4416, in the amount of $87,598.00.

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

W. E. KING

W. E. King

Enclosures

cc: W. M. Traver (3)
E. N. Harshman
W. L. Emerick
Sec. of Com (2)

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

RECEIVED
SEP - 4 1956

August 30, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

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

From: Field Team, Region III

Subject: Docket DMEA 4416 (Copper) Bluebonnet Uranium Corp. (Copper Chief Claims) Graham and Pinal Counties, Arizona

Enclosed are copies of the subject copper exploration application in the amount of $87,598.00, transmittal letter from the Chairman of the Operating Committee, and memoranda of review by J. W. Pennington, USBM, and N. E. Nelson, USGS. Your attention is directed to the USBM reviewer and the Chairman's reference to the apparent excessively high cost estimates by the Applicant. Also the USGS reviewer considers the Applicant's theory somewhat visionary and that his proposal verges on prospecting.

If approval of a project is indicated, we should be advised at as early a date as possible in order that we may request the required Consent to Lien forms from the owners.

The usual field examination and suitable covering reports are required and return of the brochure with the report is requested.

DMEA Field Team, Region III

W. M. TRAVER,

By W. M. Traver
Executive Officer

WMT:ab
cc: Chair. Op. Comm. (2)
Harshman
Docket 4416
Chron.

File Copy
Surname
J. Ceed
Selfridge
Fagnan

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

500

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

Re: Docket No. DMEA-4416 (Copper)
Bluebonnet Uranium Corp.
Copper Chief Claims
Graham & Pinal Counties, Arizona

Dear Mr. Traver:

The cited application for exploration assistance is being referred to your office for consideration, a field examination if warranted, and recommendations.

The Applicant's estimated costs for the proposed work appear to be excessively high and should be carefully studied by the Field Team.

In the event that you should consider this application favorably, the Applicant should be requested to obtain a Consent to Lien from the owners of this property.

Copies of memoranda, dated August 10 and August 15, 1956, by N. E. Nelson, Geological Survey, and J. W. Pennington, Bureau of Mines, respectively, relating to the project, are enclosed for your information.

Also enclosed is an extra copy of the application for the use of the Field Team.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

JWAlt/er 8/22/56
Copy to: Docket
Admr & File
Op. Committee
Base Metals
Mr. Pennington, USBM
Mr. Kiilsgaard, USGS
Chron.

APPROVED:

FRANK D. LAMB
Member, Bureau of Mines

N. E. Nelson
Member, Geological Survey

File Copy
Surname
J. All
Nicholson
Nelson
Lamb
Selfridge
Hill

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

AUG 24 1956

Mr. Karl Grau, President
Bluebonnet Uranium Corporation
2284 W. Holcombe Blvd.
Houston, Texas

Re: Docket No. DMEA-4416 (Copper)
Bluebonnet Uranium Corp.
Copper Chief Claims
Graham and Pinal Counties, Arizona

Dear Mr. Grau:

Your application for Government assistance to explore the cited property has been reviewed by the Base Metals Division of the Defense Minerals Exploration Administration and is being referred to:

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

If additional information concerning your application is needed, the Field Team will get in touch with you at an early date.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

JWAlt/er 8/22/56
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Pennington, USBM
Mr. Hillsgaard, USGS
Region III (2)
Chron.

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

RECEIVED
AUG 15 1956

August 15, 1956

Memorandum

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

From: Commodity Specialist, Branch of Base Metals

Subject: Review of application, Docket No. DMEA 4416 (copper) Bluebonnet Uranium Corporation, Copper Chief Claims, Graham and Pinal Counties, Arizona. $87,598.00

The applicant proposes to explore for copper mineralization at and near the limestone-intrusive contact by 6000 feet of diamond drilling at an estimated cost of $87,598.00.

Exploration of the contact zone may be warranted as indicated by the data in the application. However, the estimated costs appear excessive, especially the items under 6. (B), Labor.

Referral of the application to the Field Team for evaluation and examination is recommended.

The application is returned herewith.

J. W. Pennington

J. W. Pennington

Attachment

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
R. W. Geehan
F i l e s

August 15, 1956

Memorandum

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

From: Commodity Specialist, Branch of Base Metals

Subject: Review of application, Docket No. DMEA 4416 (copper) Bluebonnet Uranium Corporation, Copper Chief Claims, Graham and Pinal Counties, Arizona. $87,598.00

The applicant proposes to explore for copper mineralization at and near the limestone-intrusive contact by 6000 feet of diamond drilling at an estimated cost of $87,598.00.

Exploration of the contact zone may be warranted as indicated by the data in the application. However, the estimated costs appear excessive, especially the items under 6. (B), Labor.

Referral of the application to the Field Team for evaluation and examination is recommended.

The application is returned herewith.

J. W. Pennington

J. W. Pennington

Attachment

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Killagaard, U.S.G.S.
R. W. Seehan
F i l e s

IN REPLY REFER TO:

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

RECEIVED
AUG 13 1956

August 10, 1956

Memorandum

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

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

Subject: Review of application, Docket No. DMEA 4416, Bluebonnet Uranium Corporation, Copper Chief Group, Graham and Pinal Counties, Arizona. $87,598 - Copper

The applicant requests assistance in prospecting a granite-limestone contact zone for possible copper ore bodies. Some copper ore has been mined from small scattered occurrences in the near surface limestone, southwest of the contact, but it is assumed by the applicant that deep drilling along the contact may locate larger replacement ore bodies in flat or low dipping limestone beds which abut the assumed steeply dipping mass of granite.

The edges and ends of the limestone beds are assumed to have been torn and brecciated as they were severed by a fault of large displacement. The post fault granitic mass now occupies the fault and adjacent volumes and, as postulated, so altered the severed beds as to make them amenable to replacement by copper ore.

The concept is not too unreasonable but hypothetical factors are involved and the proposed work looks very much like prospecting. Perhaps visible on-the-ground evidence tends to make the project less visionary than it now appears.

Referral of the application to the Field Team for appropriate action is recommended.

N. E. Nelson

N. E. Nelson

August 9, 1956

Bluebonnet Uranium Corp.
2284 W. Holcombe Blvd.
Houston, Texas

Subject: DMEA-4416
Re: Exploration Assistance
Copper Chief Mining
Claims

Gentlemen

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

Your application has been assigned Docket Number DMEA-4416 and referred to the Base 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

BLUE BONNET URANIUM CORPORATION

2284 W. HOLCOMBE BLVD.
HOUSTON 25, TEXAS

AUGUST 1, 1956

P. O. BOX 2380
GLOBE, ARIZONA

RECEIVED
AUG - 3 1956

MR. C. O. MITTENDORF, ADMINISTRATOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
DEPARTMENT OF THE INTERIOR
WASHINGTON 25, D. C.

DEAR SIR:

WE WISH TO SUBMIT AN APPLICATION FOR DMEA ASSISTANCE FOR A COPPER EXPLORATION PROGRAM.

WE ENCLOSE THE FOLLOWING:

1. 4 COPIES OF FORM MF-103 WITH ATTACHED SHEETS 1 THRU 8.
2. 4 COPIES OF ILLUSTRATIVE DRAWINGS FIGS. 1 THRU 6.
3. 4 COPIES OF CORPORATION RESOLUTION AUTHORIZING APPLICATION.
4. 4 COPIES OF MINING LEASE
5. ONE ENGINEER'S REPORT. (TO BE RETURNED)

THE SUBJECT PROPERTY IS NOW BEING EXPLORED ON A SMALL SCALE BY THE APPLICANT. IT HAS BEEN ASCERTAINED THAT A DIAMOND DRILLING PROGRAM WOULD BE THE MOST ECONOMICAL AND EFFECTIVE METHOD OF EXPLORING THIS PROPERTY.

BLUEBONNET URANIUM CORP. HEAS BEEN ACTIVELY ENGAGED IN MINE EXPLORATION WORK IN GILA COUNTY FOR THE PAST TWO YEARS, AND HAS ESTABLISHED A REPUTATION FOR RELIABILITY.

WE FEEL THAT A DMEA LOAN WOULD BE JUSTIFIED BY THE AMPLE GEOLOGIC EVIDENCE OF A COPPER OREBODY. NO DEEP EXPLORATION HAS EVER BEEN DONE IN THIS AREA, AND A SUCCESSFUL EXPLORATION PROJECT WOULD CERTAINLY ATTRACT OTHER OPERATORS WITH PRIVATE CAPITAL TO DEVELOP AND EXPLORE THE SURROUNDING COUNTRY.

RESPECTFULLY SUBMITTED,

Wm. W. Sorsen

WM. W. SORSEN
P. O. BOX 2380
GLOBE, ARIZONA

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED
AUG - 9 1956

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

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

Not to be filled in by applicant

Docket No. 4416
Metal or Mineral Copper
Date Received 8-9-56
Estimated Cost $87,598
Participation (Government %)

NOTE: ALL QUESTIONS ANSWERED ON ATTACHED SHEETS PAGES 1 TO 8

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: BLUEBONNET URANIUM CORPORATION (ADDRESS INQUIRIES TO
2284 W. HOLCOMBE BLVD. P. O. BOX 2380
HOUSTON, TEXAS GLOBE, ARIZONA)

(*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

(*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?

☐ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated ....., 195__

BLUEBONNET URANIUM CORPORATION
(Applicant)

By Karl M. Gray PRES.

Kenneth L. Jones SEC. TREAS.

Wm. M. Jorsen MGR. ENG'R.

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

BLUEBONNET URANIUM CORP.
2284 W. HOLCOMBE BLVD.
HOUSTON, TEXAS

1. (A) NAME OF APPLICANT BLUEBONNET URANIUM CORP. (HOME OFFICE)
2284 W. HOLCOMBE BLVD.
HOUSTON, TEXAS

ADDRESS INQUIRIES TO BLUEBONNET URANIUM CORP. (MINE OFFICE)
BOX 2380
GLOBE, ARIZONA

(B) A CORPORATION, INCORPORATED IN THE STATE OF DELAWARE.

(C) PRESIDENT- KARL GRAU, 2284 W. HOLCOMBE BLVD., HOUSTON, TEXAS.

SEC. TREAS.-ERNEST E. GARRETT, 2284 W. HOLCOMBE BLVD. HOUSTON, TEXAS.

2. NOT APPLICABLE.

3. (A) UNPATENTED MINING CLAIMS KNOWN AS: COPPER CHIEF NOS. 1, 2, 3, 4, 5, 7, AND 9, LOCATED IN GRAHAM AND PINAL COUNTIES, IN SEC. 36, T4S, R18E, AND SEC. 1, T5S, R18E, AND SEC. 6, T5S, R19E. GLOBE AND SALT RIVER BASE AND MERIDIAN.

(B) COPPER CHIEF.

(C) LESSEE.

(D) COPY OF LEASE ENCLOSED.

(E) NONE

(F) RECORDED IN OFFICE OF GRAHAM COUNTY RECORDER, SAFFORD, ARIZONA

NAME	DOCKET	PAGE
COPPER CHIEF 1	26	306
2	26	307
3	26	308

RECORDED IN OFFICE OF PINAL COUNTY RECORDER, FLORENCE, ARIZONA

NAME	DOCKET	PAGE
COPPER CHIEF 4	152	420
5	152	421
7	152	422
9	152	424

NOTE: CLAIMS NUMBER 4 AND 5 ARE FRACTIONAL

BLUE BONNET URANIUM CORP.
2284 W. HOLCOMBE BLVD.
HOUSTON, TEXAS

4. (A) ALL OF THE PAST AND CURRENT EXPLORATION WORK HAS BEEN DONE ON COPPER CHIEF NUMBERS 1 AND 3 (SEE MAP FIG.3 AND 5). AT ADIT NUMBER 1, A TUNNEL WAS DRIVEN 155 FEET SW SHOWING COPPER MINERALIZATION AT 25 FEET IN AN OXIDIZED SHEAR ZONE, AND ALSO AT 75 FEET AS DRAG ON A POST-MINERAL E-W FAULT. LATER WORK SHOWS COMMERCIAL ORE TO THE EAST AND WEST OF THE DRIFT INTERSECTION WITH THE FAULT. (SEE FIG. 5)

IN 1950, SANDERS AND PEARSON DROVE A CROSSCUT TO THE WEST AT THE COPPER SHOWING 25 FEET SW OF THE PORTAL OF ADIT NUMBER 1. AT 50 FEET, THEY INTERSECTED A 48" ORE ZONE STRIKING N45W, AND DIPPING 45 DEGREES NE. THEY STOPED 22 TONS FROM THIS SITE AND SHIPPED THE ORE TO THE INTERNATIONAL SMELTER IN MIAMI. THE ORE ASSAYED 2.55 OZ. SILVER, .033 OZ. GOLD, AND 4.85% COPPER. POST MINERAL FAULTING CUT OFF THE ORE ON THE BOTT. THEY CONTINUED THIS CROSSCUT A TOTAL DISTANCE OF 350 FEET.

NUMBER 2 ADIT IS 38 FEET ABOVE ADIT NUMBER 1, AND 80 FEET TO THE SOUTH. AN EARLIER OPERATOR REMOVED SOME ORE FROM THE OUTCROP OF THIS VEIN, AND DROVE A 40 FOOT ADIT TO THE SOUTH. THE PORTAL AND WALLS SHOW COPPER MINERALIZATION FOR FOUR FEET.

BLUEBONNET URANIUM CORP. IS CURRENTLY DRIFTING SE ALONG THE VEIN AT PORTAL NUMBER 1, AND DROVE A 33 FOOT RAISE TO THE SURFACE. SIX TONS OF ORE FROM THIS WORK WAS SHIPPED TO THE INTERNATIONAL SMELTER AT MIAMI. THE ORE ASSAYED 2.41 OZ. SILVER, .01 OZ. GOLD, AND 5.70% COPPER.

AT ADIT NUMBER 3, A 40 FOOT TUNNEL WAS DRIVEN TO THE W. TO INTERSECT A N-S COPPER VEIN DIPPING 60E. A RAISE WAS DRIVEN TO THE SURFACE 16 FEET ALONG THE VEIN. THE W. SIDE OF THIS RAISE CUTS A N60W QUARTZ PORPHYRY DIKE. A 48" CHANNEL SAMPLE OF THE VEIN ASSAYED 6.41% COPPER.

A 16 FOOT SHAFT WAS DUG AT NUMBER 4 (FIG. 3) IN 1949 BY SANDERS AND PEARSON, EXPOSING AN INTERSECTION OF TWO STEEPLY DIPPING VEINS STRIKING N45W AND S30W. THEY SHIPPED 22 TONS OF ORE FROM THIS HOLE THAT ASSAYED (AVERAGE 2 SHIPMENTS) 3.90 OZ. SILVER, .04 OZ. GOLD, AND 7.05% COPPER.

AT NUMBER 5 (FIG. 3), AN OPEN CUT 20 FEET LONG WAS EXCAVATED SHOWING A THIN SULFID COPPER VEIN IN THE BEDDING STRIKING NW AND DIPPING 45E. A SAMPLE OF THE THIN DGE OF THIS VEIN ASSAYED 7.76% COPPER.

AT NUMBER 6 (FIG. 3), WERE FOUND COPPER AND SILVER ORE MINERALS ON DUMPS, HOWEVER OLD WORKINGS WERE OBSCURED BY EROSION.

AT NUMBER 7 (FIG. 3), A 30" ORE ZONE WAS EXPOSED IN A SIX FOOT PIT. AN ASSAY OF THIS VEIN SHOWED 2.63% COPPER.

4. (A) CONT'D.

BLUEBONNET URANIUM CORP. BUILT AN ACCESS ROAD TO CONNECT THE HAWK CANYON ROAD WITH THE MINE, A DISTANCE OF 3 MILES IN JUNE 1956. A CAMP WITH FACILITIES FOR FOUR MEN WAS ERECTED AT THE MINE, AND EXPLORATION WORK WAS STARTED AT ADIT NUMBER 1.

THE PROPERTY IS ACCESSIBLE FROM GLOBE VIA U. S. HIGHWAY 70 32 MILES EAST TO THE HAWK CANYON ROAD, THENCE 16 MILES SOUTH ON UNIMPROVED DIRT ROAD TO THE MINE.

(B) THE PROPERTY HAS NEVER BEEN IN PRODUCTION, HOWEVER DEVELOPMENT HAS PRODUCED SOME ORE, ALL OF WHICH WAS SHIPPED TO THE INTERNATIONAL SMELTER AT MIAMI, ARIZONA, AS FOLLOWS

DATE	LOT	SHIPPER	WEIGHT LBS.	SILVER OZ/TON	GOLD OZ/TON	COPPER %
3/49	2848	SANDERS PEARSON	23,206	4.03	.04	6.59
3/49	2873	" "	18,135	3.63	.04	7.52
1/50	3634	" "	44,111	2.55	.033	4.85
7/56	1238	BLUEBONNET	11,851	2.41	.01	5.70

THERE ARE NO RECORDS OF SHIPMENTS PRIOR TO THE ABOVE, HOWEVER DUMPS INDICATE SOME ORE WAS PRODUCED FROM SITES 3 AND 6 (FIG. 3).

ORE RESERVES CANNOT BE COMPUTED FROM THE INFORMATION NOW AVAILABLE.

(C) GEOLOGY

MUCH INFORMATION WAS OBTAINED FROM U. S. G. S. BULLETIN NUMBER 763 OF THE ARIVAIPA AND STANLEY MINING DISTRICTS, GRAHAM COUNTY, ARIZONA, BY CLYDE P. ROSS, 1925. THIS BULLETIN HAS BEEN OF GREAT HELP IN THE PRELIMINARY RECONNAISSANCE OF THE GEOLOGICAL FEATURES OF THIS PROPERTY.

THE COPPER CHIEF MINE IS IN THE NORTHWEST PORTION OF THE STANLEY MINING DISRICT ON THE NORTHERN RIM OF THE DEER CREEK SYNCLINAL BASIN. THE MINERAL DEPOSITS ARE IN A THICK SERIES OF PALEOZOIC LIMESTONES WHICH HAVE BEEN FOLDED AND FAULTED, PRODUCING LARGE ROLL STRUCTURES AND EXPOSING BLOCKS WHEREIN THE LIMESTONE STANDS VERTICALLY. THE UNFOLDED MAIN BODY OF LIMESTONE DIPS TO THE SW TOWARD THE DEER CREEK BASIN. OVERLYING THE LIMESTONES WITH SLIGHT DISCORDANCE IS A THICK SERIES OF INTERBEDDED CRETACEOUS LAVAS, WITH SANDSTONE, CONGLOMERATE, SHALE, AND COAL BEDS OF COLORADO AGE. A QUARTZ PORPHYRY STOCK HAS INTRUDED THE LIMESTONES AND VOLCANICS. THE COPPER CHIEF FAULT CUTS NORTHWESTWARD THRU THE LIMESTONES. THE NORTHERN PART OF THE AREA HAS BEEN DEPRESSED, BRINGING THE CRETACEOUS ROCKS IN CONTACT WITH THE LIMESTONES ON THE SOUTH SIDE OF THE FAULT, SEPARATED IN THE FAULT ZONE BY THE QUARTZ PORPHYRY STOCK. THE ORE BODIES APPEAR TO BE REPLACEMENTS OF CERTAIN FAVORABLE LIMESTONE BEDS AND FRACTURE CHANNELS BY COPPER MINERALS AND OCCUR CLOSE TO THE LIMESTONE-QUARTZ PORPHYRY CONTACTS. SEVERAL DIKES BRANCHING FROM THE MAIN

4. (c) CONT'D.
STOCK CUT THE LIMESTONE, AND POSSIBLY HAVE SOME EFFECT ON ORE DEPOSITION. ALL OF THE KNOWN ORE OCCURRENCES ARE IN THE UPTHRUST BLOCK, SOUTH OF THE COPPER CHIEF FAULT. A CONSIDERATION OF THE POSSIBLE THICKNESS OF THE LIMESTONES HERE WOULD DETERMINE TO SOME EXTENT THE ORE POTENTIAL IN THIS AREA. C. D. WALCOTT HAS IDENTIFIED DEVONIAN, MISSISSIPIAN, AND PENNSYLVANIAN FOSSILS IN THE LIMESTONES EXPOSED IN THE FAULT BLOCKS NORTH OF THE COAL FIELDS. HE MENTIONS A THICKNESS OF 100 FEET OF DEVONIAN UNDERLYING THE MISSISSIPIAN. HE HAS CORRELLATED SOME OF THE MISSISSIPIAN FOSSILS WITH UPPER MISSISSIPIAN. HE MENTIONS AN ESTIMATED THICKNESS OF 1200 FEET FOR THE CARBONACEOUS LIMESTONES. HE DOES NOT ESTIMATE THE THICKNESS OF THE PENNSYLVANIAN, BUT INCLUDES IT WITH THE MISSISSIPIAN. AT THE COPPER CHIEF PROPERTY, THE UPPER LIMESTONE BEDS THAT ARE EXPOSED APPEAR TO BE UPPER MISSISSIPIAN. NO STRATIGRAPHIC STUDY HAS BEEN MADE TO DATE AT THE COPPER CHIEF, HOWEVER, IT SHOULD BE POINTED OUT THAT THE GEOLOGICAL AGE AND STRUCTURES PRESENT AT THE COPPER CHIEF ARE PRACTICALLY IDENTICAL WITH CONDITIONS AT THE CHRISTMAS COPPER MINE 10 MILES TO THE WEST.

IN U. S. G. S. BULLETIN 1027-H, GEOLOGY OF THE CHRISTMAS COPPER MINE, GILA COUNTY, ARIZONA, BY NELS PETERSON AND ROGER W. SWANSON, PETERSON IDENTIFIES THREE PRODUCTIVE ORE HORIZONS. THE NACO OF PENNSYLVANIAN AGE, THE ESCABROSA OF MISSISSIPIAN AGE, AND THE O'CARROLL BED AT THE BASE OF THE MARTIN OF DEVONIAN AGE. THIS WOULD INDICATE AN EXPLORATION TARGET AT THE COPPER CHIEF CONSISTING OF A ZONE 600 FEET WIDE PARALLELING THE INTRUSIVE CONTACT ON THE SOUTH SIDE TO THE FULL DEPTH OF THE LIMESTONES, OR APPROXIMATELY 1200 FEET. ON THE NORTH SIDE OF THE INTRUSIVE CONTACT, THE SAME CONDITIONS MIGHT BE DUPLICATED IN THE LIMESTONES FROM A DEPTH OF APPROXIMATELY 1000 FEET TO 2200 FEET. THE INVESTIGATION ON THE NORTH SIDE OF THE INTRUSIVE COULD BE MOST ECONOMICALLY PERSUED BY DRILLING FROM FUTURE UNDERGROUND DEVELOPMENT ON THE SOUTH SIDE OF THE INTRUSIVE.

THE FOLDED LIMESTONES AT THE INTRUSIVE CONTACT GIVE RISE TO EXCELLENT CONDITIONS FOR ORE DEPOSITION. THE FOLDED AND BROKEN BEDS HAVE PROVIDED INNUMERABLE CHANNELS FOR THE INJECTION OF ORE SOLUTIONS INTO THE LIMESTONES. THE GRANITIC INTRUSION IN THE FAULT ZONE HAS PROVIDED A CONTACT CHANNEL FOR PASSAGE OF ORE BEARING FLUIDS FROM THE MAIN IGNEOUS SOURCE. A SET OF CONDITIONS EXISTS AT THE COPPER CHIEF WHICH MAY BE EVALUATED TO SOME EXTENT BY CRITERIA ESTABLISHED BY OTHER PYROMETASOMATIC OR CONTACT METAMORPHIC DEPOSITS IN ARIZONA. THE MINE AT CHRISTMAS IS PROBABLY THE CLOSEST EXAMPLE OF THE CONDITIONS FOUND AT THE COPPER CHIEF.

4. (C) CONT'D.

THE MINERALIZATION EXPOSED AT THE COPPER CHIEF CLAIMS IS FOUND AS REPLACEMENT IN BEDDING PLANES AS WELL AS CROSS-FRACTURE ORE OCCURRENCES. SOME OF THE ORE OCCURRENCES ARE BRECCIATED ZONES IN THE BEDDING WHICH APPEAR TO BE HYPO-~~THERMAL~~ GENE, LACKING ANY OF THE PRIMARY HIGH TEMPERATURE MINERALS. OTHER ORE OCCURRENCES SHOW CHALCOPYRITE, MAGNETITE, SPECULARITE, ACTINOLITE AND GARNET. THESE LATTER EXPOSURES INDICATE CONTACT METAMORPHISM. THE MINERALIZATION WAS UNDOUBTEDLY POST-INTRUSIVE. MOST OF THE ORE OCCURRENCES ARE NEAR INTRUSIVE CONTACTS IN ALTERED LIMESTONE SHOWING LARGE AMOUNTS OF HEMATITE AND LIMONITE, AND PARTIAL SILICIFICATION.

A LOGICAL PROCEEDURE FOR EXPLORING THIS TYPE OF ORE BODY WOULD CONSIST OF DIAMOND DRILLING INCLINED HOLES TO INTERSECT THE LIMESTONE-INTRUSIVE CONTACT AT A POINT NEAR SURFACE AND ALSO AT A LOWER ELEVATION TO DETERMINE THE DIP OF THE CONTACT. AFTER THE DIP IS ESTABLISHED AT A GIVEN SITE, A HOLE SHOULD BE COLLARED ABOUT 30 FEET ON THE SOUTH SIDE OF THE CONTACT IN THE LIMESTONE, AND INCLINED TO DRILL PARALLEL WITH THE DIP, SO AS TO PENETRATE AS MANY HORIZONS OF THE LIMESTONE AS POSSIBLE WITH EACH HOLE. THREE SITES SPACED 1000 FEET APART ALONG THE LIMESTONE-INTRUSIVE CONTACT SHOULD BE TREATED IN THIS MANNER, AND THE RESULTING INFORMATION USED TO SELECT ADDITIONAL HOLES TO GIVE THE NECESSARY INFORMATION FOR ESTIMATING FUTURE REQUIREMENTS. AFTER ORE ZONES ARE FOUND, ADDITIONAL INFORMATION TO DETERMINE ATTITUDE, GRADE AND EXTENT IS NECESSARY TO ASSURE A WELL PLANNED DEVELOPMENT PROGRAM.

(D) THE PROJECT IS ACCESSIBLE FROM GLOBE VIA U. S. HIGHWAY 70 EAST FOR 32 MILES, THENCE SOUTH VIA HAWK CANYON DIRT ROAD 16 MILES TO THE PROPERTY.

GLOBE IS THE SUPPLY CENTER FOR SHIPPING, SUPPLIES, AND LABOR. A PERMANENT CAMP HAS BEEN CONSTRUCTED TO HOUSE FOUR MEN.

(E) MANPOWER, MATERIALS, AND EQUIPMENT ARE AVAILABLE AND IN GOOD SUPPLY AT GLOBE.
WATER FOR MINING IS HAULED THREE MILES FROM A SPRING IN HAWK CANYON. DRINKING WATER IS HAULED FROM GLOBE.
ALL POWER IS SUPPLIED BY DIESEL OR GASOLINE ENGINES.

5. (A) COPPER, GOLD SILVER, LEAD, BARITE.

5. (B) THE EXPLORATION PROJECT: (SEE FIG. 3)

1. SELECT 3 SITES APPROXIMATELY 1000 FEET APART ALONG THE LIMESTONE-INTRUSIVE CONTACT.
2. (AT EACH SITE)
   COLLAR ONE HOLE 50 FEET NE OF FAULT CONTACT, INCLINE HOLE 20 DEGREES FROM HORIZONTAL AND DRILL SW 75 FEET OR MORE TO INTERSECT LIMESTONE-INTRUSIVE CONTACT.
3. (AT EACH SITE)
   COLLAR SECOND HOLE BELOW FIRST HOLE AND INCLINE 50 DEGREES FROM HORIZONTAL, AND DRILL SW 125 FEET OR MORE TO INTERSECT LIMESTONE-INTRUSIVE CONTACT, THEREBY ESTABLISHING DIP OF CONTACT.
4. (AT EACH SITE)
   MOVE DRILL TO POINT 30 FEET SOUTH OF FAULT PLANE PROJECTED TO THE SURFACE. COLLAR HOLE IN LIMESTONE AND DRILL PARALLEL TO LIMESTONE-INTRUSIVE CONTACT, DEPTH OF HOLE DEPENDING ON INFORMATION OBTAINED FROM CORE. (500 TO 1000 FEET OR MORE)

AFTER THIS PROCEEDURE HAS BEEN REPEATED AT EACH OF THREE SITES, INFORMATION MAY BE CORRELATED TO SELECT ADDITIONAL DRILL SITES FOR HOLES OF VARYING LENGTH AND DIRECTION TO MAKE A TOTAL OF 6000 FEET OF DRILL HOLE.

(C) THE WORK WILL START WITHIN 60 DAYS AND BE COMPLETED WITHIN 10 MONTHS AFTER THE DATE OF THE CONTRACT.

(D) THE DIAMOND DRILLING WILL BE DONE BY R. S. MCCLINTOCK CO., LONGYEAR, BOYLES BROS. OR EQUAL. ON A CONTRACT.

THE WORK WILL BE SUPERVISED BY WM. W. SORSEN, A REGISTERED MINING ENGINEER, WHO HAS SUPERVISED DIAMOND AND CHURN DRILL EXPLORATION FOR COPPER AT CASTLE DOME COPPER CO., ALSO COAL DRILLING FOR DUNREATH COAL CO. IN KNOXVILLE, IOWA, TACONITE IRON DRILLING FOR RESERVE MINING CO. IN BABBITT, MINNESOTA, AND URANIUM EXPLORATION DRILLING IN GILA COUNTY, ARIZONA.

6. (A) INDEPENDANT CONTRACTS:

DIAMOND DRILLING-6000 FEET OF CORE DRILLING @ $9.00/FOOT
INCLUDES WATER HAUL. $54,000.00

BULLDOZER WORK.-REPAIR AND MAINTAIN 12 MILES OF ACCESS ROAD. 40 HOURS
PREPARE AND CONNECT DRILL SITES WITH PRESENT ROADS. 40 HOURS
TOTAL-80 HOURS @ $14.00/HOUR 1,120.00

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HOUSTON, TEXAS

6.	(B) LABOR:	
	SAMPLER (AVAILABLE 2 SHIFTS) @ $20.00/DAY	$5400.00
	SUPERVISION AND ENGINEERING @ $1000.00/MO.	10000.00
	CONSULTING GEOLOGIST TO EVALUATE PROGRESS	1000.00
	(C) OPERATING MATERIALS AND SUPPLIES:	
	NONE	
	(D) FULLY EQUIPPED CAMP WITH ELECTRICITY, PLUMBING, GAS REFRIGERATOR AND STOVE. $50.00/MO. RENTAL	500.00
	1956 CHEV. ½ TON PICKUP-$200.00/MO. PLUS $0.10/MILE. RENTAL	2000.00
	SURVEYORS TRANSIT. $45.00/MO. RENTAL	450.00
	CORE STORAGE (GARAGE) $15.00/MO. RENTAL	150.00
	(E) REHABILITATION AND REPAIRS	
	CAMP BUILDING WILL REQUIRE WINTERIZING CONSISTING OF 480 SQ. FT. OF CEILING AND ENCLOSING FOUNDATION 270 SQ. FT. EST. COST	280.00
	INSTALL HOT WATER HEATER-30 GAL.	80.00
	INSTALL GAS HOT PLATE TO DRY SAMPLES, AND BUILD 10X12 SHED FOR TOOLS AND STORAGE.	250.00
	(F) SHED COVERED IN (E)	
	(G) ASSAYING- 600 SAMPLES @ $2.50/CU, AU, AG	1500.00
	SPECTROGRAPHIC ANALYSES 10 @ $15.00	150.00
	SAMPLING EQUIPMENT	250.00
	ACCOUNTING	500.00
	PAYROLL TAXES, LIAB., COMPENSATION @ 12.78%	1968.00
	(H) CONTINGENCIES: WEATHER AFFECTS ROAD IN SAND WASH. LOSS, DAMAGE, OR EXCESSIVE MAINTENANCE PROBABLE. DRILLING SUBJECT TO GROUND CONDITIONS WITH FLEXIBLE CONTRACT ALLOWING FOR EXTRA COST. 10%	8000.00
	TOTAL ESTIMATED COST	$87598.00
	COST PER FOOT	$14.60

BLUEBONNET URANIUM CORP.
2284 W. HOLCOMBE BLVD.
HOUSTON, TEXAS

7. (A) BLUEBONNET URANIUM CORP. IS PREPARED TO SHARE ITS PORTION OF THE COST.

(B) BLUEBONNET WILL PAY FOR ALL WORK AS IT PROGRESSES ON A MONTHLY BASIS. AT THE END OF EACH MONTH, THE WORK WILL BE MEASURED AND A MONTHLY REPORT EXECUTED, ALSO A PAYMENT VOUCHER ACCORDING TO THE NUMBER OF UNITS OF WORK PERFORMED UNDER THE CONTRACT.

A UNIT COST CONTRACT COULD BE WORKED OUT IN CONSIDERABLE DETAIL BASED ON THE HISTORY OF EACH FOOT OF DRILL HOLE WITH A BREAKDOWN FOR DEPTH, SIZE OF HOLE, REAMING, CASING, OVER REAMING, CEMENTING, STANDBY TIME, DELAYS, MOVING, ETC., OR A UNIT COST BASED ON THE ABOVE ESTIMATE PLUS AN ALLOWANCE FOR CONTIGENCIES TO COVER THE BLANKET COST OF THE PROJECT.

A TWO SHIFT OPERATION IS ANTICIPATED WITH AN AVERAGE ADVANCE OF 15 FEET PER SHIFT, HOWEVER, GROUND CONDITIONS COULD THROW THIS ESTIMATE OFF CONSIDERABLY.

RESOLUTION

BLUE BONNET URANIUM CORPORATION

RESOLVED, That the Board of Directors hereby authorize the Executive Committee to apply for a loan from DEFENSE MINERALS EXPLORATION ADMINISTRATION for an exploration contract not to exceed One Hundred Thousand Dollars ($100,000.00), if and when in their judgment it may be used advantageously in the Company's operations.

I, Ernest E. Garrett, Secretary of the BLUE BONNET URANIUM CORPORATION, herby certify that the above resolution was passed by the Board of Directors of the Corporation in a regularly called meeting held on February 16, 1956.

I further certify that the Executive Committee of the Corporation, in a special meeting duly called August 2, 1956, authorized the filing of the attached application.

Ernest E. Garrett
Secretary

Seal

LEASE AND OPTION

This lease made this 9th day of May, 1956, between ARMON SANDERS and MYRTLE SANDERS, husband and wife of Gila County, Arizona hereinafter called the Lessor and BLUE BONNET URANIUM CORPORATION, a corporation, of Houston, Texas, hereinafter called the Lessee.

W I T N E S S E T H :

That the lessor in consideration of One and No/100 Dollars ($1.00), the receipt of which is acknowledged, hereby leases to the lessee for the term of ten (10) years, dating from the execution of this agreement, the following unpatented mining claims, located in the Stanley Butte Mining District, Graham County, Arizona, of record in the office of the County Recorder of Graham County, at the page and docket hereinafter set forth:

NAME OF CLAIM	DOCKET	PAGE
Copper Chief No. 1	26	306
Copper Chief No. 2	26	307
Copper Chief No. 3	26	308
Copper Chief No. 4	39	250
Copper Chief No. 5	39	251
Copper Chief No. 6	39	252

In consideration whereof lessee agrees as follows:

1. Lessee shall work said leased premises in mine fashion in manner necessary to good and economical mining.

2. Lessee shall allow the lessors or their agents from time to time to enter upon the leased premises for the purpose of inspection, survey or taking samples therefrom and lessors shall have access to all drilling and assay reports and are entitled to access to the property for inspection purposes.

3. Lessee agrees to pay and allow the lessor as royalty upon all ores mined, shipped or sold from said premises, as follows, to-wit: Ten per cent (10%) of the net mill or smelter returns, after deduction of smelter charges and freight received from the sale of ore from said premises.

4. The Lessee agrees to assume all responsibility in case of

ROBERT L McGHEE
ATTORNEY AT LAW
GUY L. DRUMMOND BUILDING
10 SOUTH MAIN STREET
GILA, ARIZONA
TELEPHONE 10

accident, injury to or disability to any and all employees in or about the property, during the term of this lease.

5. The lessee shall comply with all provisions of the Federal Wage and Hour law and shall make all payments due or to become due under the Federal and State Social Security Laws and under the Unemployment Compensation law, tax laws or any other laws now in force or that may be enacted hereafter, affecting the employees of the lessee, wages paid the employees of lessee, and the products removed from said premises, during the term of this lease.

6. Lessee shall save harmless the lessor and the said property from any and all liens. The lessee further agrees to record and to post on the premises, prior to the commencing of any operations thereon, and keep posted at its own expense, a notice as provided by law that the said lessee is responsible for all claims and demands in connection with the operation of said property, and that the lessor and said property are not liable for any liens or claims resulting from said operations, during the term of this lease.

7. Lessee shall at its own expense perform all annual assessment work necessary upon said claim and shall file an affidavit thereof with the County Recorder of Gila County, Arizona, at least sixty (60) days prior to the time said work is required to be done each year, starting in the mining year beginning July 1, 1956

8. Should the lessee be in violation of any condition or in default of any payment required by this contract, the lessor may deliver to lessee in writing a notice to remedy such default, and if lessee does not thereafter within thirty (30) days remedy such default, this lease shall at the option of said lessor expire, and terminate, and said mining claim shall become forfeited to the Lessor and the said lessor or his agents may thereupon enter upon said mining claims 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

ROBERT L. MOORE
ATTORNEY AT LAW
CITY & MUNICIPAL BUILDING
120 SOUTH BEELINE HIGHWAY
GLOBE, ARIZONA
TELEPHONE 120

occupying said leased premises or any part thereof may be proceeded against as guilty of unlawful detainer.

9. This agreement shall be binding upon the heirs, administrators, executors and assignes of the parties hereto.

10. During the period of this lease, the Lessee shall carry and maintain liability insurance under the Workman's Compensation Law and under the Occupational Disease Law of Arizona, satisfactory to the Industrial Commission of Arizona, and shall comply with all the terms of the Arizona Workman's Compensation Law and the Arizona Occupational Disease Law.

11. All machinery, equipment and personal property which may be placed on the said mining property by and at the expense of the Lessee, may be removed by it within sixty (60) days after termination of this agreement; provided that no such property of the Lessee shall be removed at any time while the Lessee may be in default under any of the terms and provisions of this lease; and provided further that the removal of such property shall be effected in such a manner as to avoid injury or damage to the mine and improvements that are to remain thereon.

12. All notices under the lease or in connection therewith shall be deemed served upon the Lessor or the Lessee when mailed to the Lessors at Pleasant Valley Route, Globe, Arizona, and the Lessee at Box 2280, Globe, Arizona.

13. It is a condition of this lease that the lessee shall perform at least Six Thousand Dollars ($6,000.00) worth of mining work upon the above mentioned claims during each and every three month period from the date of this agreement.

14. Lessee may terminate this agreement at any time by written notice mailed to Lessors and may remove within sixty days any equipment placed on the mining property upon the conditions set forth in paragraph 11.

15. Lessors agree that the Lessee may apply to the Defense

ROBERT E. MACHIE
ATTORNEY AT LAW
CURTIS, MCHARGUE, DUNLAVEY
100 SOUTH BROAD STREET
GLOBE, ARIZONA
TELEPHONE 100

Minerals Exploration Administration for a exploration project contract not to exceed the sum of One Hundred Thousand Dollars ($100,000.00) and that they will sign the required consent to such project contract.

16. In consideration of the mutual agreements of the parties, the lessee agrees to do the necessary location work on the Copper Chief No. 4, Copper Chief No. 5, and Copper Chief No. 6 claims, and upon any other mining claims which may be located by it in the name of the Lessors. Lessee agrees that any and all mining claims or fractions of claims which it may locate in the area adjacent to the above-described group of claims shall be located in the name of the Lessors. Lessors further agree that any such claims located by either the lessee or the lessors in the area adjacent to the above-described group of claims shall become subject to the terms of this agreement..

17. PROVIDED ALWAYS, NEVERTHELESS, that if said lessee at any time during said term, shall be minded to purchase the leased premises for the sum of Five Hundred Thousand Dollars ($500,000.00) and shall tender said amount to the escrow agent hereafter named, then said lease is, by said tender, terminated, and the escrow agent shall on the same day make and deliver to the said lessee a mining deed signed by the lessors conveying their right, title and possession to said mining property. Lessors further agree that, in case additional mining claims are hereafter located and become a part of this agreement, they will execute mining deeds to said claims and will deliver said deeds to the escrow agent to become a part of said escrow.

18. It is understood and agreed that all royalties which may be paid by the lessee to the lessor shall be credited on the purchase price only when the option is exercised and a sufficient balance is tendered, which together with the royalty payments, will amount to the sum of Five Hundred Thousand Dollars ($500,000.00).

ROBERT E. McGHEE
ATTORNEY AT LAW
SUITE 5, MICHAELSON BUILDING
149 SOUTH BROAD STREET
GLOBE, ARIZONA
TELEPHONE 100

If royalty payments shall equal the sum of $500,000.00, said les shall be entitled to thereupon exercise said option upon demand without payment.

19. In the event of the termination of the lease hereinabove granted, the option herein granted shall likewise terminate forthwith.

20. It is agreed that the Lessors will forthwith execute a good and sufficient deed conveying all of the above described mining claims to the Lessee, said deed to be placed in escrow with the Gila County Abstract Company, Globe, Arizona, to be delivered to Lessee upon payment to the Lessors, their heirs or assigns, of the amount of the purchase price. The escrow agent shall be authorized to withhold from the final payment the cost of the United States Internal Revenue stamps. Lessee agrees to pay the necessary fee for opening the escrow.

21. It is understood and agreed by the parties hereto that the said Copper Chief Nos. 4, 5, and 6 were located by the Lessors on the 5th day of May, 1956, and that the location work thereon has not been completed at the date hereof. That said last named mining claims or portions thereof may conflict with prior mining locations and the said Lessors do not warrant title to said last named mining claims.

IN WITNESS WHEREOF, the Lessors have hereunto set their signatures and the Lessee has caused these presents to be signed by its president and its corporate seal to be hereunto affixed and attested by its secretary.

Arnor Sanders
LESSOR

Myrtle Sanders
LESSOR

BLUE BONNET URANIUM CORPORATION

By Karl M. Graus
President

ATTEST:

Secretary, Blue Bonnet
Uranium Corporation.

ROBERT E. McGHEE
ATTORNEY AT LAW
CURTIS B. McMAHON BUILDING
120 SOUTH BROAD STREET
GLOBE, ARIZONA
TELEPHONE 108

STATE OF ARIZONA }
COUNTY OF GILA } ss.

On this the 10th day of May, 1956, before me ROBERT E. McGHEE, the undersigned officer, personally appeared ARMON SANDERS and MYRTLE SANDERS, known to me to be the persons whose names are subscribed to the within instrument and acknowledged that they have duly executed the same for the purpose therein contained.

In witness whereof I hereunto set my hand and official seal.

Robert E. McGhee
Notary Public.

My Commission Expires:
September 30, 1959.

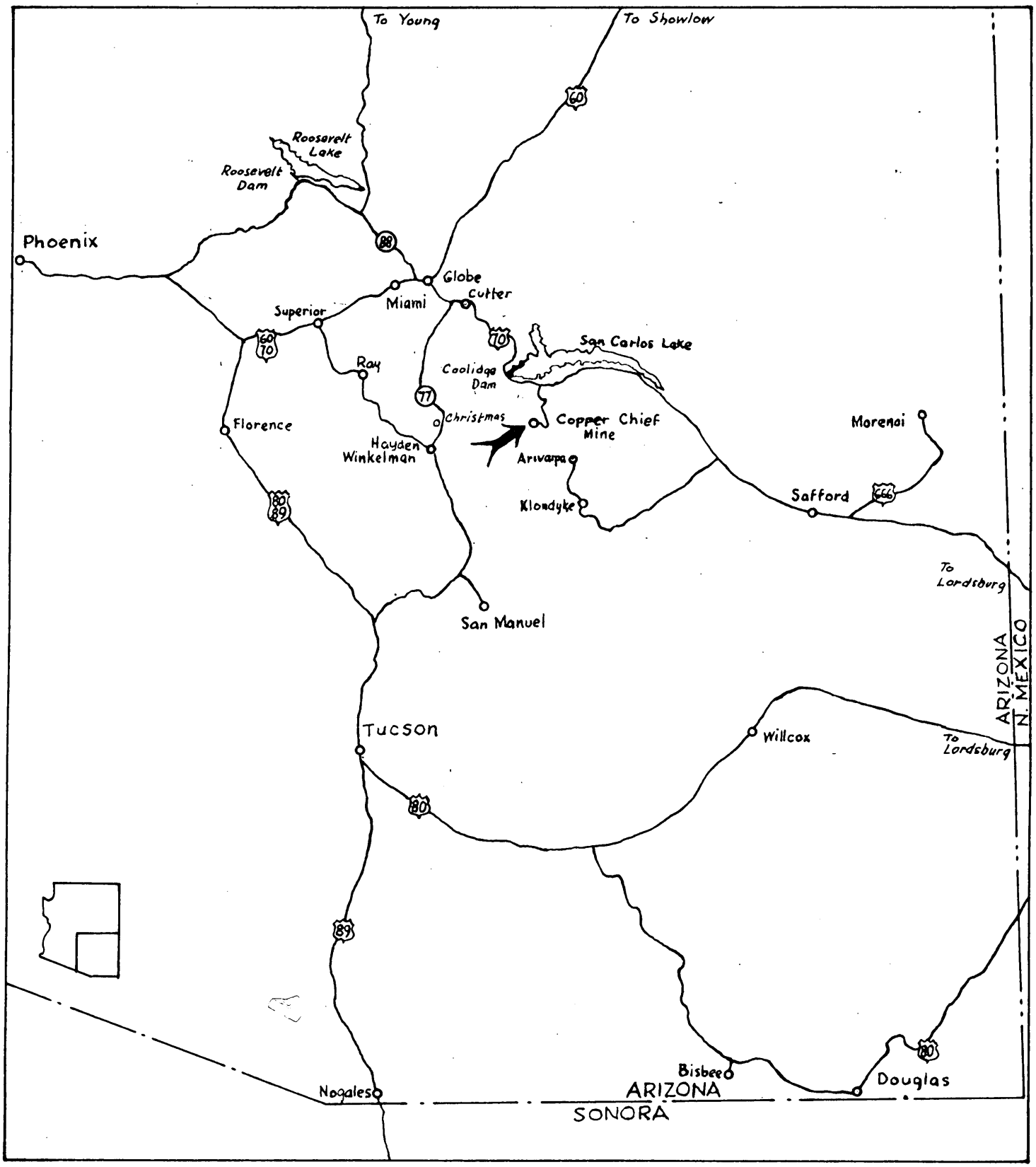
STATE OF TEXAS }
COUNTY OF Harris } ss.

On this the 12th day of May, 1956, before me, R. A. Garrett, the undersigned officer, personally appeared KARL GRAU, who acknowledged himself to be the President of Blue Bonnet Uranium Corporation, a corporation, and that he, as such President being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as President.

R. A. Garrett
Notary Public

My Commission Expires:
6-1-57.

ROBERT E. McGHEE
ATTORNEY AT LAW
CITY & WASHINGTON BUILDING
100 SOUTH DRAKE STREET
GLOBE, ARIZONA
TELEPHONE 100



MAP SHOWING LOCATION OF COPPER CHIEF MINE AND PRINCIPAL COPPER CENTERS OF ARIZONA

Scale: 0 5 10 20 30 40 miles

FIG. 1

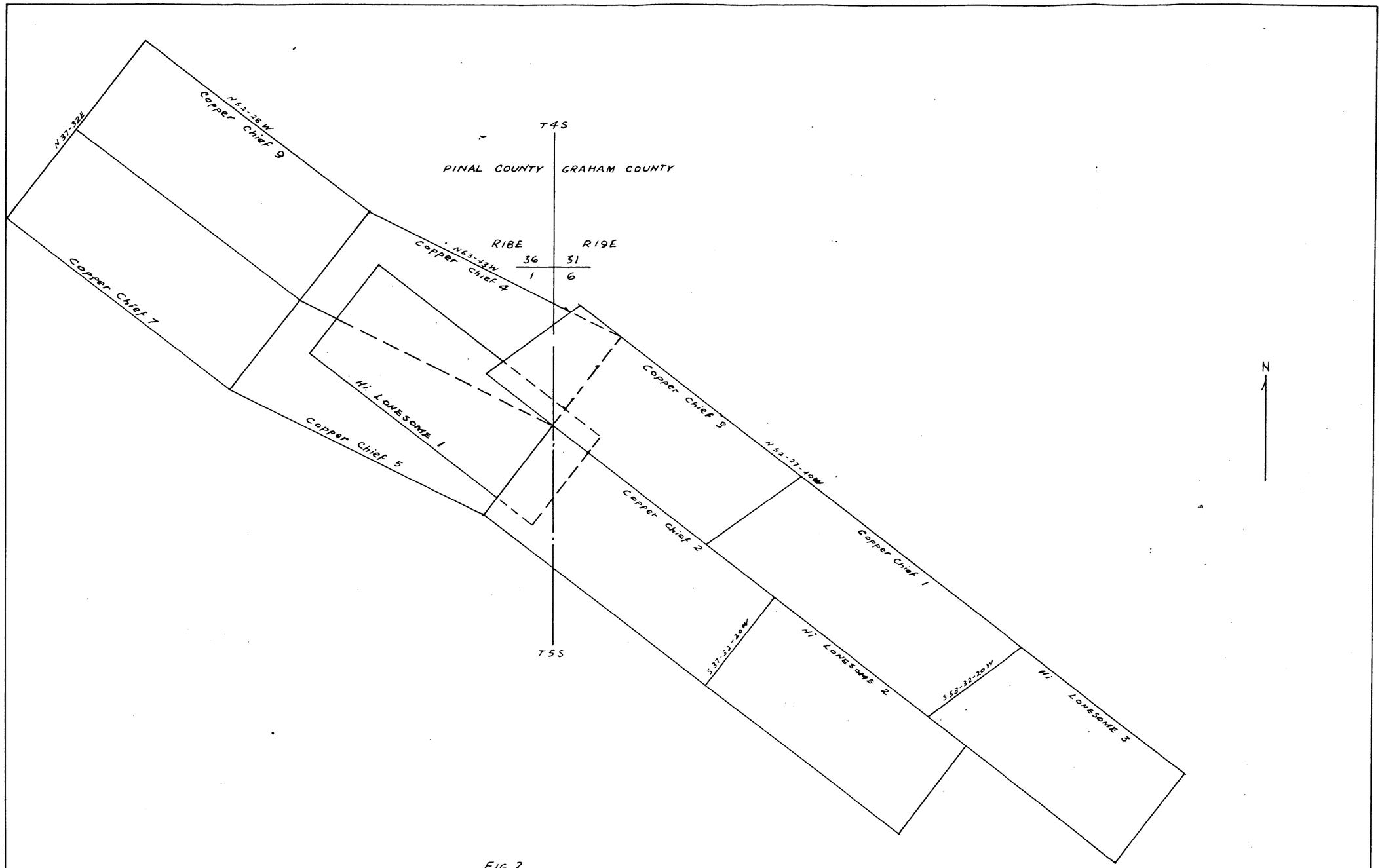


FIG. 2
CLAIM MAP SHOWING
COPPER CHIEF AND Hi LONESOME CLAIMS
SCALE 1"=500' JULY 1956

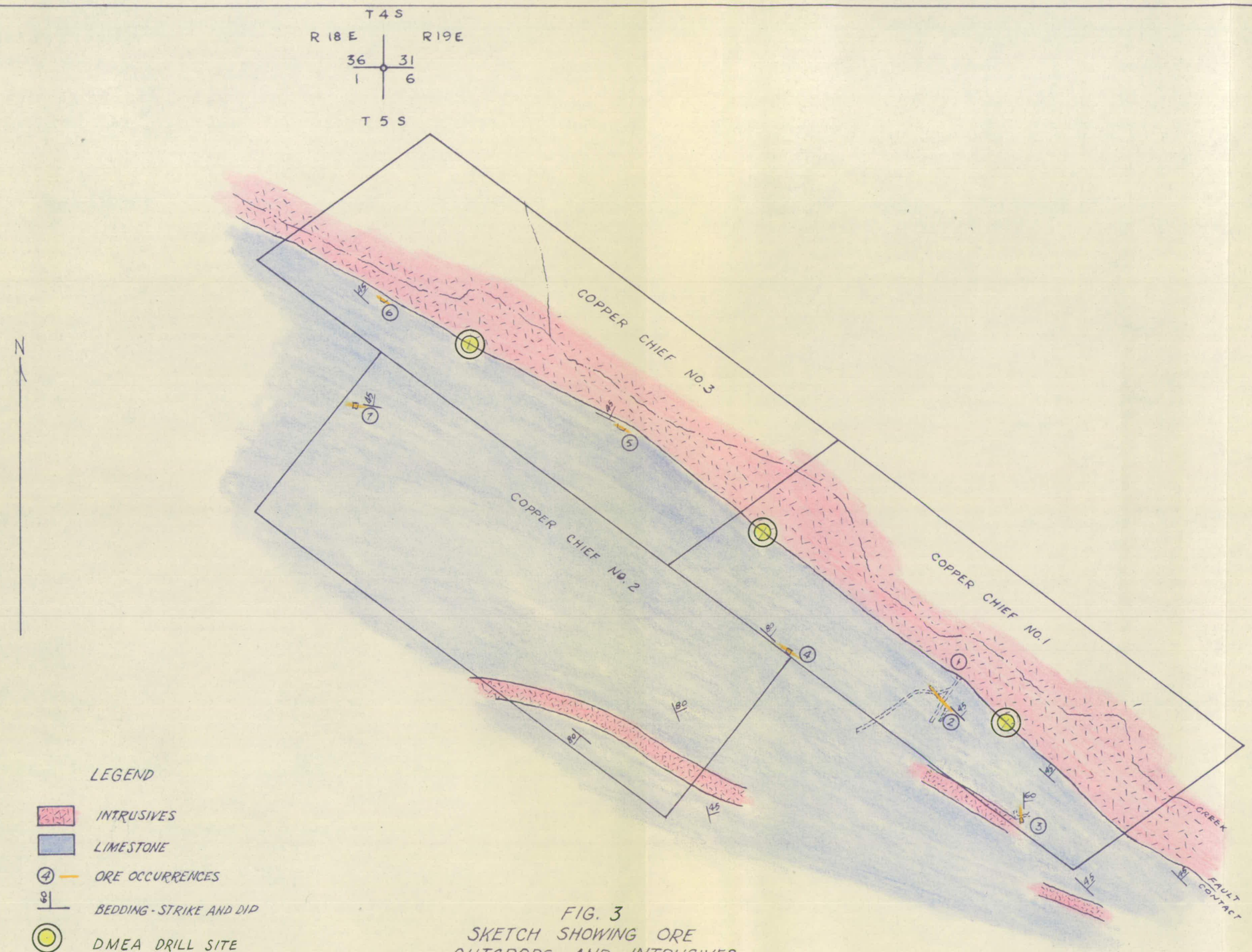


FIG. 3
SKETCH SHOWING ORE OUTCROPS AND INTRUSIVES
COPPER CHIEF JULY, 1956
SCALE 1" = 300'

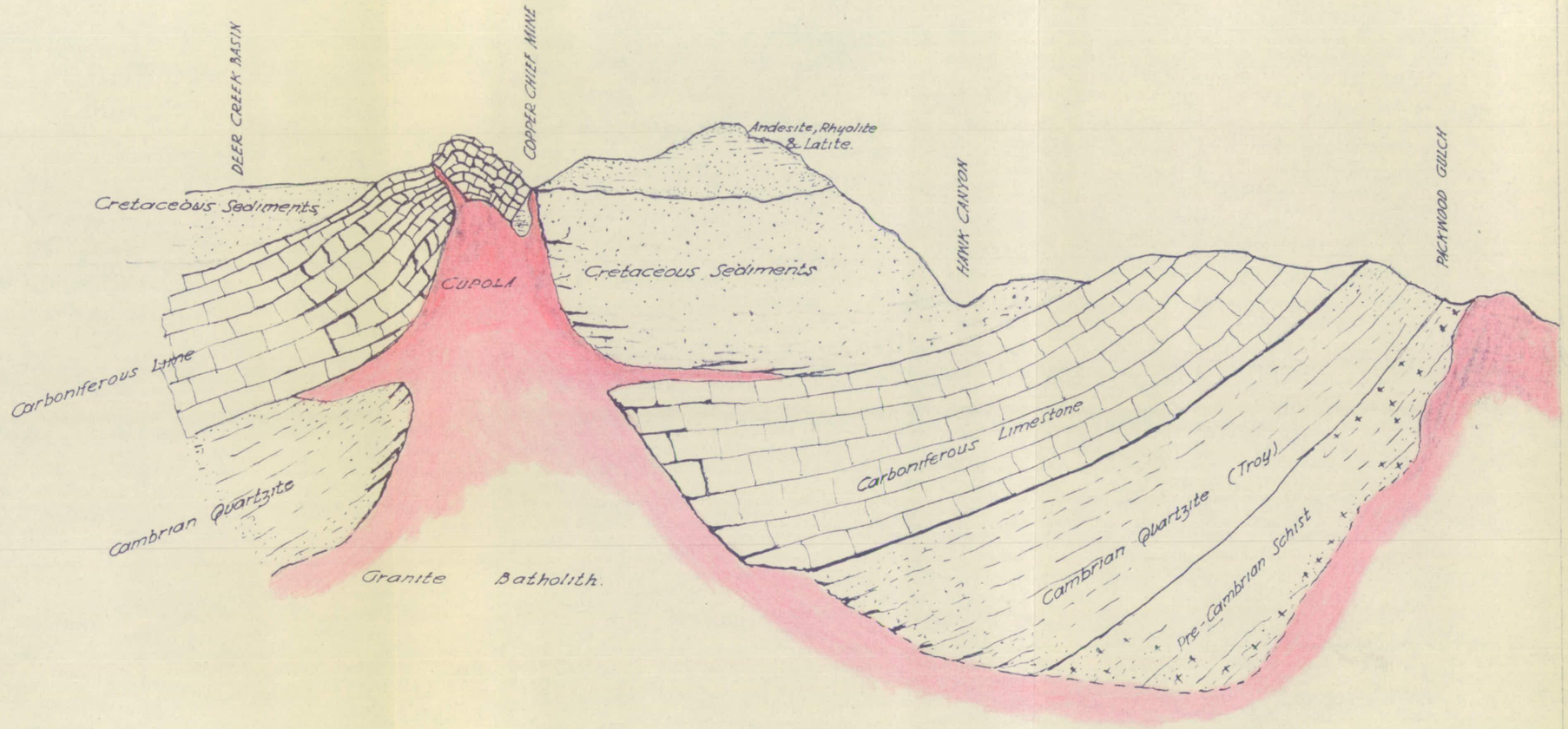
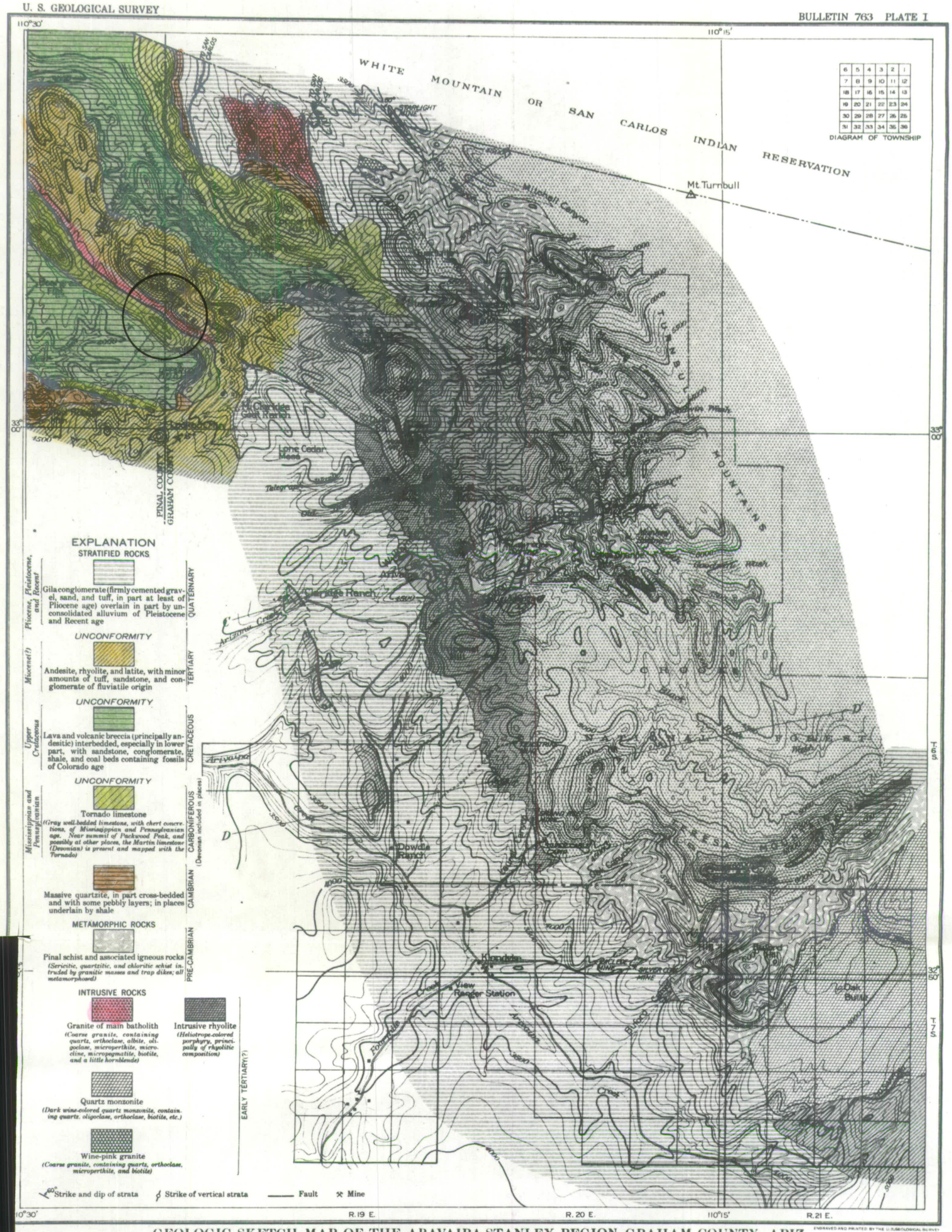


Fig. 4 Sketch Showing Main Geologic Features in the vicinity of Copper Chief Mine July 1956



GEOLOGIC SKETCH MAP OF THE ARAVAIPA-STANLEY REGION, GRAHAM COUNTY, ARIZ.

Scale $\frac{1}{125,000}$

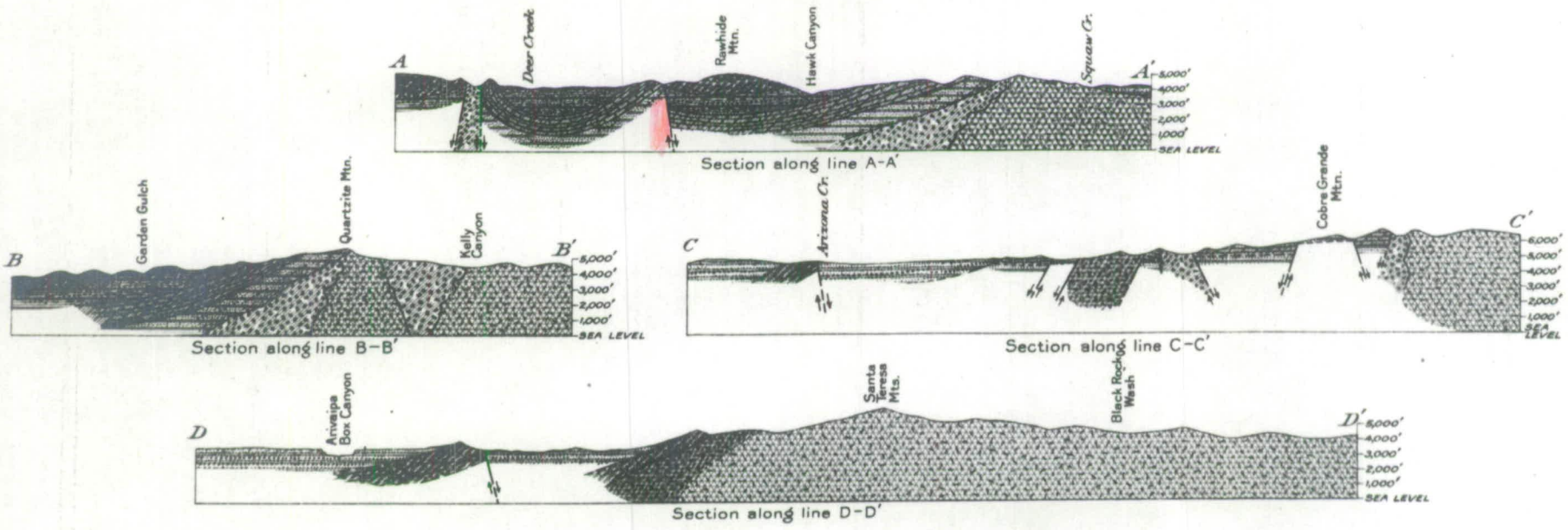
1 0 1 2 3 4 5

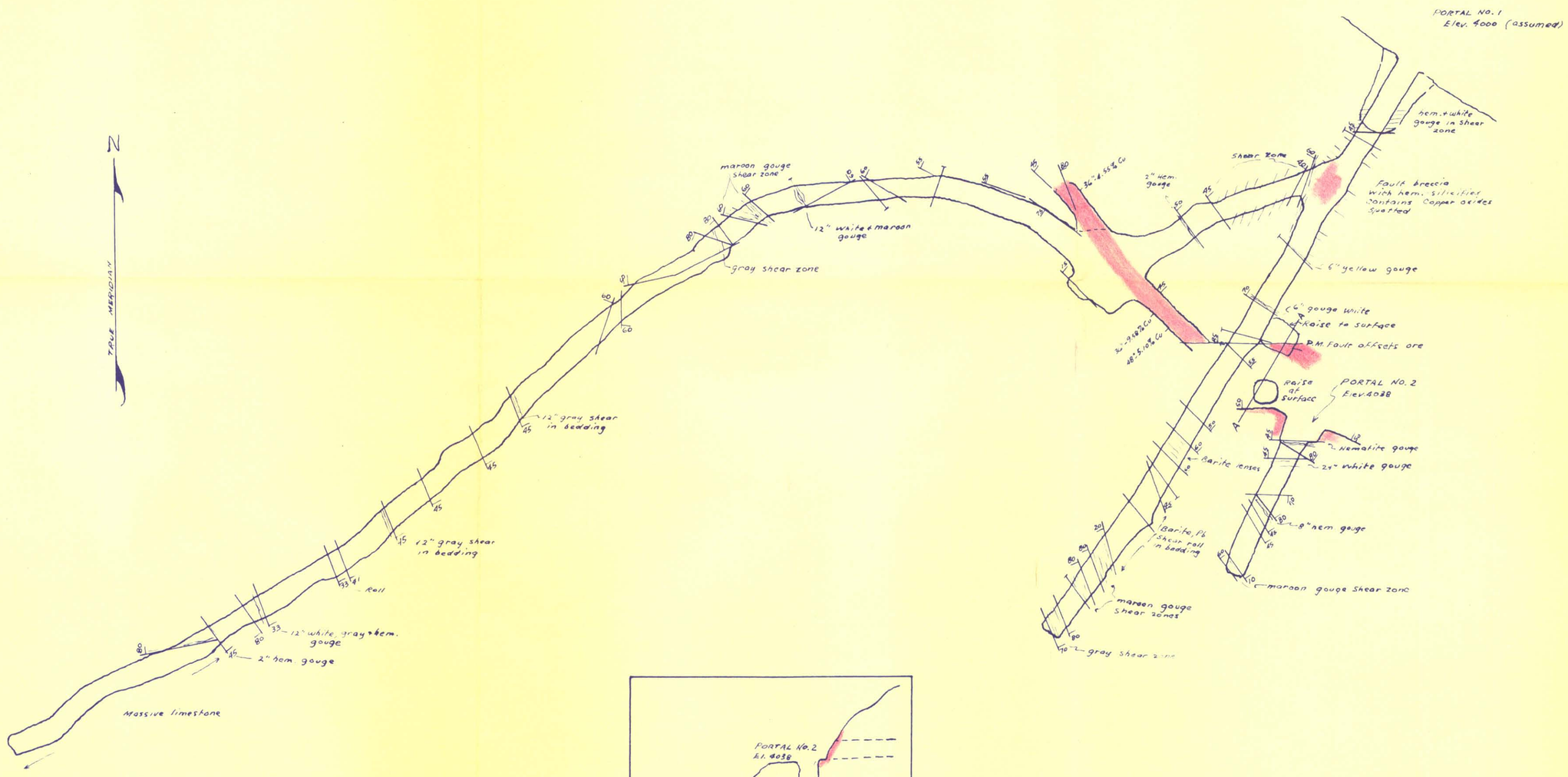
Contour interval 100 feet

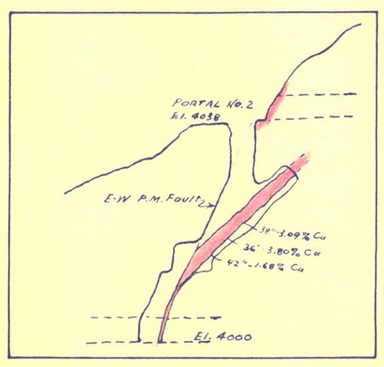
Datum is mean sea level

1924

Geology and topography by Clyde P. Ross, 1922







A-A SECTION SHOWING RAISE
EAST ELEVATION

FIG. 5

GEOLOGICAL AND ASSAY MAP OF
COPPER CHIEF MINE
BLUEBONNET URANIUM CORP.
GRAHAM COUNTY, ARIZ.

SCALE · 1" = 20' JULY, 1956