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

700

Mr. Albert J. Leach and
Mrs. Francis Ivan Leach
P. O. Bin U
Lordsburg, New Mexico

Re: Docket DMEA-1294 (Uranium)
"California", "Utah", and
"Floyd Collins" Claims
Grant County, New Mexico

Dear Mr. and Mrs. Leach:

Your application for aid in an exploration project docketed as per the above captioned number has been thoroughly reviewed by this Agency.

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

A careful study of your proposal reveals that the probability of disclosing mineable reserves is not considered sufficiently promising to justify Government participation.

We regret that under these circumstances your application for exploration aid to the extent of 90% of $250,000.00 must be denied.

If future work at your property reveals evidence which could materially alter this opinion, please be assured we will be glad to consider a new application.

Sincerely yours,

(signed) FRANK E. JOHNSON

Acting Administrator

W.M.K.

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

FSSchmidt/jem
7/1/52
cc to: Adm. Reading File
Docket
Messrs. AJKauffman-1347
APButler-3206 GSA
Ellis Schmidt
Opr. Committee
Field Team, Region IV (2)

224, New Customhouse
Denver 2, Colorado

June 23, 1952

Memorandum

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

From: Field Team, Region IV

Subject: Final Report, DMA Docket 1294, (Uranium) A. A. and F. I. Leach, Grant County, New Mexico

Enclosed are the original and three copies of the report pertaining to the above application. The brochure is also enclosed.

We recommend that the application for exploration assistance be denied because the claims the applicant proposes to explore are not considered sufficiently promising to justify Government participation.

H. H. King

H. H. Koschmann

Hmc.
HMC:oc

Encl.

cc: WRStorms w/copy of final report
CAAnderson w/copy of final report
AHKoschmann w/copy of final report
Mining Div. w/copy of final report
LEPage w/copy of final report
Chas. Towle w/copy of final report
DMA Final Report
Subject, Chron.
Koschmann (2)

February 14, 1952

Memorandum

To: A. H. Koschmann

From: Executive Officer, Region IV

Subject: DMEA Dockets

Will you please ascertain the status of the following dockets which our reports indicate are pending reports by the Survey:

DMEA-1294, Albert A. and Francis T. Leach, Grant County, New Mexico

DMEA-1957, Ellihill Mining Company, San Juan County, Utah

DMEA-2046, The Barite Corporation, Juab County, Utah

DMEA-2165, Silver Bell Mines Company, San Miguel County, Colorado

DMEA-2304, Larson and Plummer (Vasco Mines), Boulder County, Colorado.

W.H.K.

J. H. East, Jr.

JHE:ftm

JFA

WLD

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

JUN 27 1951
OFFICE OF MINES
DENVER, COLORADO

June 21, 1951

Mr. Albert [illegible]
[illegible]
Lordsburg, New Mexico

Dear Mr. [illegible]:

Your application docket [illegible] for exploration project in the amount of $[illegible] has been received by the Minor and Strategic Metals Branch of the Supply Division.

Before a decision can be reached on your request we find it is necessary to obtain additional information on your property. Your application therefore is being referred to the office of the executive officer of [illegible] Field Team IV, Mr. W. H. [illegible], Mr. [illegible] Customhouse Building, Denver 2, Colorado, with the request that the needed information be supplied to us.

Yours very truly,

For Lyon, Director
Supply Division

Wbourret/ah
cc: Adm. Sec. File
Strobel
Lyon
Field Team IV
Bourret
Files

DMP
Pi

Norton

224 New Customhouse
Denver, Colorado

June 28, 1951

Memorandum

To: W. R. Storms

(Through Chief, Mining Division)

Charles Anderson (with brochure)

From: DMA Field Team, Region IV

Subject: DMA 1294, Albert A. Leach and Francis I. Leach, Lordsburg, New Mexico

Herewith is the brochure on the above docket, together with a review by the Washington office, DMA. You will note that they request certain information, which you should be careful to obtain in making the field examination.

Since this is the first exploration request on uranium, your attention is called to Procedural Instruction No. 5, a copy of which is attached.

Please make the necessary examination and report.

P. T. Allsman, Alternate

A. H. Koschmann

Attachments
PTA/al cc-Dmt files, Koschmann

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

[redacted]
[redacted]

June 23, 1952

[redacted]

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

From: Field Team, Region IV

Subject: Final Report, [redacted] (Uranium) A. A. and F. I. Leach, Grant County, New Mexico

Enclosed are the original and three copies of the report pertaining to the above application. The brochure is also enclosed.

We recommend that the application for exploration assistance be denied because the claims the applicant proposes to explore are not considered sufficiently promising to justify Government participation.

W. H. King
[redacted]

A. H. Koschmann
[redacted]

Enc.

cc: WEStorms w/copy of final report
CAAnderson w/copy of final report
AHKoschmann w/copy of final report
Mining Div. w/copy of final report
LKPage w/copy of final report
Chas. Towle w/copy of final report
DMA Final Report

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

June 19, 1952

Memorandum

To : DMEA Field Team, Region IV

From : A. H. Koschmann

Subject: DMA Docket 1294, Floyd Collins, Utah and California Claims (Uranium), A. A. and F. I. Leach, Applicants, Grant County, New Mexico.

Enclosed are the original and 10 copies of the above report by A. F. Shride of the Geological Survey.

It has been recommended that the loan be denied.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (11)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O.Box 4126, University Station
Tucson, Arizona

June 17, 1952

Memorandum

To: Field Team, Region IV, Denver, Colorado
Through: Mr. A. H. Koschmann

From: A. F. Shride, Tucson, Arizona

Subject: Final Report, DMA 1294, Floyd Collins, Utah and California Claims (Uranium), A. A. and F. I. Leach, Applicants, Grant County, New Mexico

Enclosed are the original and 10 copies of the above report by A. F. Shride of the Geological Survey.

It is recommended that an exploration loan be denied because (1) the potential ore will probably be in small amounts and sub-commercial in grade, and (2) if geologic factors were favorable it would not be possible to negotiate a technically feasible exploration program.

The brochure is enclosed. Enclosed also is a confidential appraisal of the applicants.

A. F. Shride

A. F. Shride
Acting District Supervisor
Arizona-New Mexico

Enclosures 12

FLOYD COLLINS, UTAH AND CALIFORNIA CLAIMS
A. A. AND F. I. LEASH
GRANT COUNTY, NEW MEXICO
DMA 1294

URANIUM

Geology

By
A. F. Shride
Geologist, U. S. Geological Survey

FLOYD COLLINS, UTAH AND CALIFORNIA CLAIMS
A. A. AND F. I. LEACH
GRANT COUNTY, NEW MEXICO
DMM 1294

URANIUM

CONTENTS

	Page
Introduction	1
Geology	2
Floyd Collins Claim	3
Utah and California Claims	4
Proposed Exploration Program	6
Exploration Potential of the Leach Properties	8
Conclusions and Recommendations	9

ILLUSTRATIONS

	Following Page
Figure 1 Claim Map Showing Location of Floyd Collins, Utah, and California Claims	2
Figure 2 Sketch Geologic Map, Utah and California Claims, Grant County, New Mexico	4

INTRODUCTION

The Floyd Collins, Utah and California uranium claims in the White Signal Mining District, Grant County, New Mexico are 18.0 miles by highway southwest of Silver City, New Mexico. The Utah claim, which is contiguous with the California claim and in the SE ¼, Sec. 22, T. 20 S., R. 15 W., NMPM, is crossed by paved State Highway 180 nine-tenths of a mile west of the settlement of White Signal. The Floyd Collins claim 0.7 miles to the west straddles section line 21 - 22.

The Utah and California claims are patented in the names of Albert A. and Francis I. Leach, the applicants. The applicants have applied for a patent on the Floyd Collins claim. Mr. and Mrs. Leach have mined small amounts of torbenite and autunite from these claims and adjacent properties during the past 20 years and recovered small quantities of uranium salts for incorporation in patent medicine type devices, radioactive face powder, and like products.

The White Signal District has had considerable attention in recent years as a potential uranium-producing area. Uranium has not been produced in commercial quantities from the district, but active prospecting is being done. The Geological Survey at present is carrying out a mapping program as a part of a study of the uranium deposits of the area. Mr. Elliot Gillerman, who is in charge of the Geological Survey work in the White Signal area, accompanied the writer in the field examination, gave advice, and furnished the data on which the following report is based. The writer, however, takes the responsibility for all descriptions and conclusions set forth in this report.

GEOLOGY

The part of the White Signal district that includes the Utah, California, and Floyd Collins claims is underlain by pre-Cambrian granite which is intruded by numerous dikes of diabase or basalt, quartz monzonite, latite, and rhyolite. In the subject claims north-northwest to northwest-trending basic dikes, 1 to 80 feet thick, intrude the medium- to coarse-grained argillized and much fractured pre-Cambrian granite. The rocks are cut by many faults of east to northeast strike. In Section 22 uranium apparently occurs in two habits: (1) in and adjacent to narrow quartz-pyrite veins, at least some of which follow the easterly-trending fault pattern; (2) in and adjacent to the northwest-trending basic dikes of the area. Torbernite is the only uranium mineral identified to date on the subject claims. Considerable oxidation along a persistent vein on the nearby Merry Widow claim (see fig. 1) has been noted in diamond drill core to a depth of 550 feet. Therefore it is not likely that primary uranium minerals will be found in the area except at a depth of several hundreds of feet. It has been suggested that the abnormally high phosphorus content of the basic dikes in the White Signal District has been a significant factor in precipitating the secondary uranium minerals.

The torbernite occurs as tissue-thin films on fracture faces in the granite and is sparsely distributed on the fractures. In much of the zones of greatest radioactivity uranium minerals are not discernible. Radioactivity, and presumably concentrations of torbernite, are greatest in and immediately adjacent to the basic dikes, and along some of the more persistent northwest trending fractures exposed on the claims.

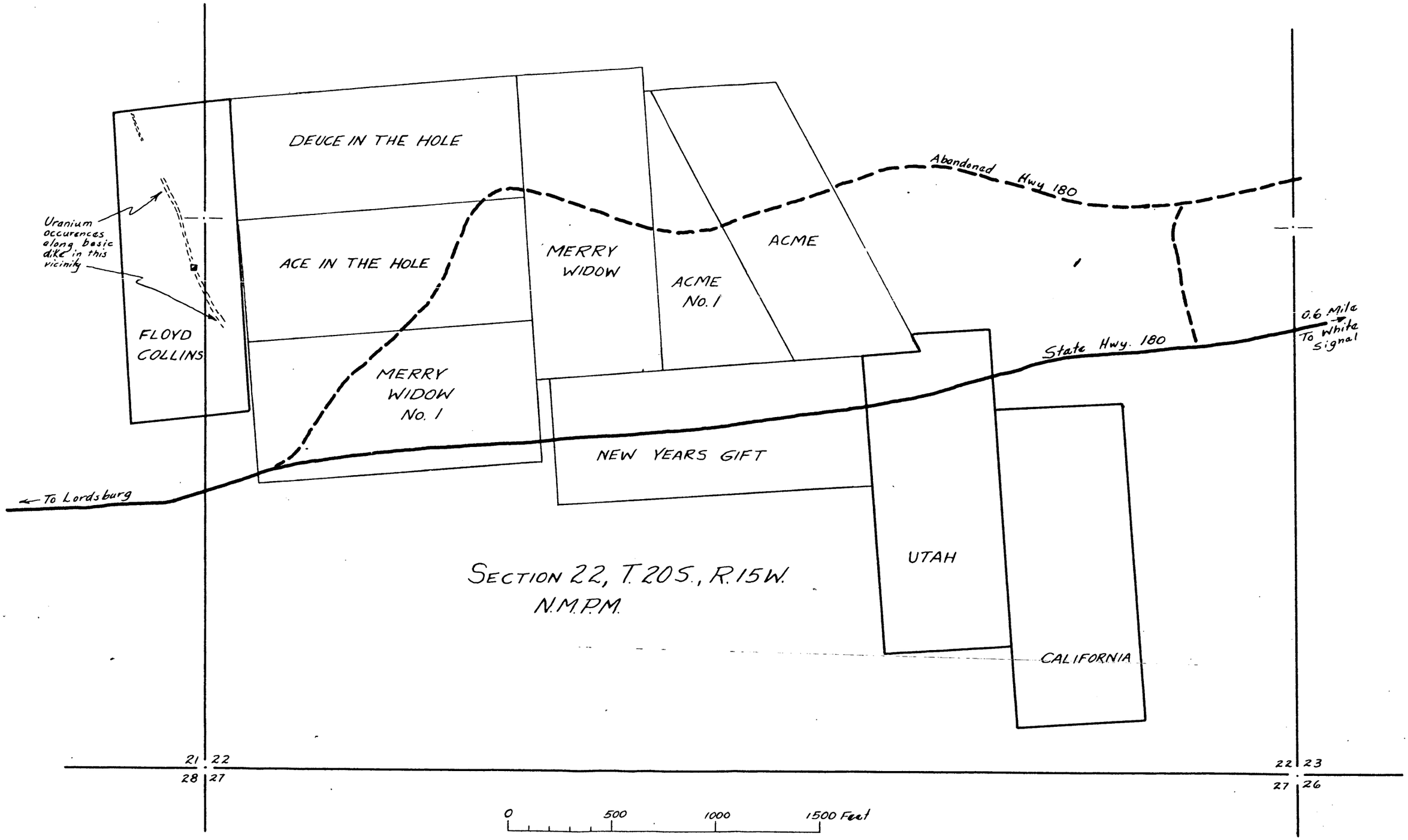

FIGURE 1.- CLAIM MAP SHOWING LOCATION OF FLOYD COLLINS, UTAH, AND CALIFORNIA CLAIMS
(only these claims owned by applicant)

DMA-1294

The mineralized zones are a few inches to a few feet wide. Rare, small pods, a foot or two in diameter, have been known to contain ore assaying as much as 2 percent U_3O_8. The following descriptions summarize the available information on distribution of uranium on the applicants' claims.

Floyd Collins Claim

Uranium mineralization on the Floyd Collins claim is concentrated in and near a basic dike that strikes N. 20° W. and underlies the middle portion of the claim (see fig. 1). The dike is intruded into the pre-Cambrian granite. This dike is displaced horizontally, a few feet to a few tens of feet, by east- and northeast-trending faults. Numerous narrow fractures essentially parallel the dike border or cut the dike at slight angles; probably the localization of torbernite is related to these fractures.

The most intensely mineralized areas obvious from radiometric traverses of the Floyd Collines claim have been exposed by numerous pits and trenches. In addition, a 40 foot deep inclined shaft and a 50-foot drift, from 20 feet below the collar of the shaft, exposes a part of the most radioactive area. In the pits, trenches and workings Geiger counter traverses along a 300-foot length of the basic dike, have shown readings of 2 to 10 times, and exceptionally 40 times, background count (Victoriam Model 263-B Counter - background count 2 to 2.5 divisions on 2.0 scale). Eight channel samples taken by Gillerman from two of the most radioactive trenched areas, and from the underground workings have shown equivalent uranium values ranging from 0.012 to 0.196 percent eU. Six of these samples showed less than 0.1 percent e'.

Material selectively picked by Bureau of Mines examiners has been radiometrically analyzed. The range of 4 samples of such material was 0.40 to 2.10 percent equivalent uranium.

Utah and California Claims

In the Utah and California claims, uranium is concentrated in small amounts along northwest-trending basic dikes and fissures. The granite of this area is much fractured and argillized. In a few places minute amounts of sporadically distributed torbernite can be observed on fracture faces in freshly exposed granite.

The most radioactive areas have been explored by 3 shallow shafts and numerous pits and trenches. In addition a road cut, in places as much as 15 feet deep, along State Highway 180 exposes a part of the Utah claim for two-thirds its width. The cores of two diamond drill holes drilled by the applicant on the northern end of the Utah claim have been logged and eU determinations and wet assays of cores and sludges made where warranted by the U. S. Bureau of Mines personnel. The results of Geiger counter traverses by Gillerman are shown on figure 2.

It will be noted from figure 2 that the Geiger counter readings range from 2 to 7 times the background count, and that most of the radioactivity is adjacent to the basic dikes or along the northwest faults. Uranium mineralization in the granite away from these features is very sparse. The known radioactive parts of the Utah and California claims are noted on figure 2 by means of Geiger counter data. It should be emphasized that radioactivity can be noted only where indicated on figure 2; the outcrops between the readings shown are apparently essentially barren

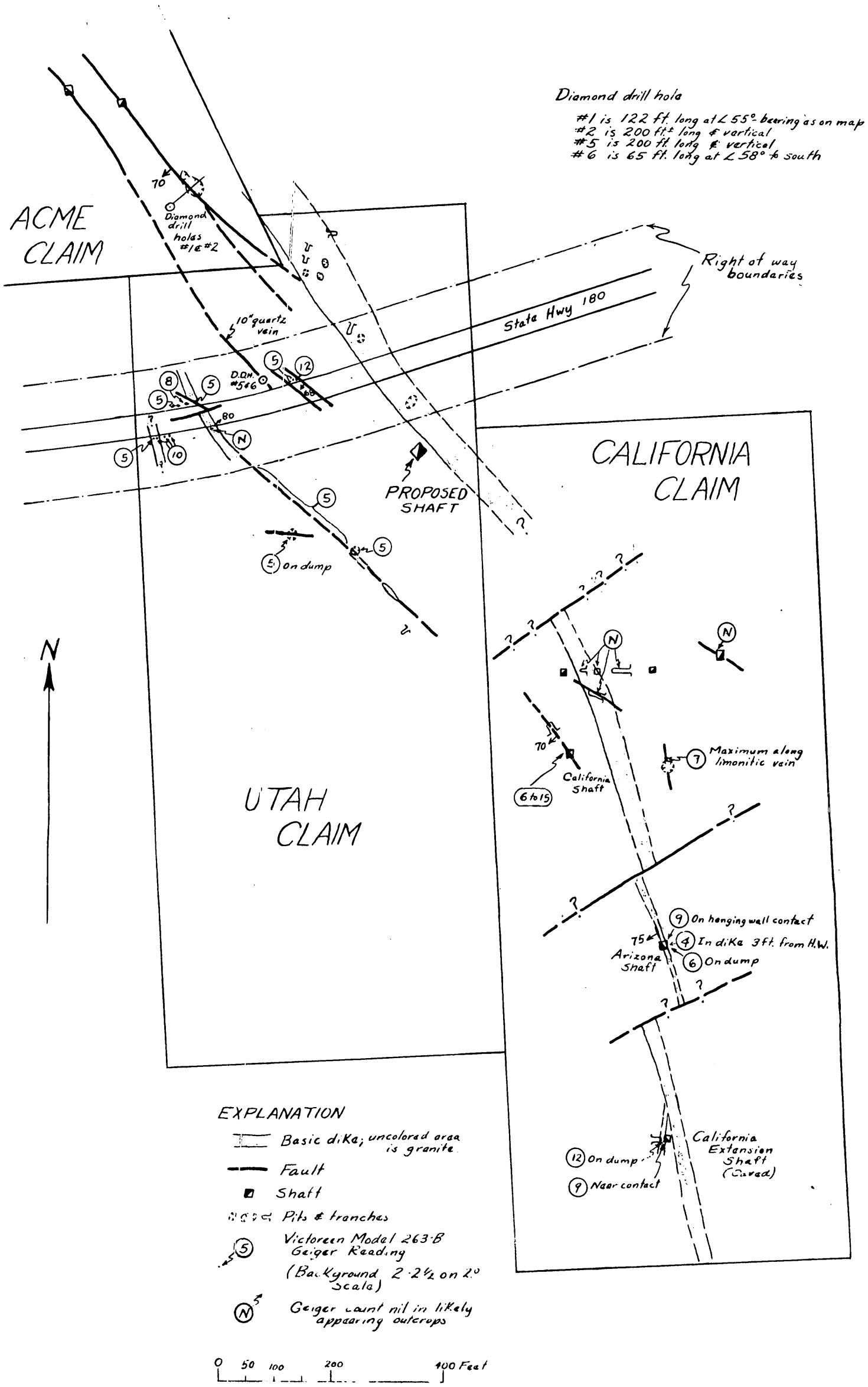

FIGURE 2.- SKETCH GEOLOGIC MAP, UTAH AND CALIFORNIA CLAIMS, GRANT COUNTY, NEW MEXICO

DMA-1294

of radioactive minerals. Gillerman has determined the equivalent uranium content from samples taken at the California shaft (eU of sample is 0.19 percent) and from the California Extension shaft (eU of sample is 0.043 percent). These shafts are in two of the most radioactive zones observed on the claims. Both samples were taken from the dumps of the above workings. The mineralized zone at the California shaft is 3 feet wide. Other comparable widths of radioactive rock were noted only in the vicinity of the basic dikes.

Diamond drill holes 5 and 6, on the north end of the Utah claims, have common collars (see fig. 2). Hole 5 is vertical and 192 feet deep; Hole 6 is 65 feet in length and inclined 58 degrees to the south. Equivalent uranium determinations from cores from Hole No. 5 showed no appreciable radioactivity except in the interval 92.5 to 167 feet (of the 192 feet drilled). From the lithologic descriptions that accompany the log of Hole No. 5 there is a suggestion that this radioactivity is associated with a basic dike. In this interval eU percentages ranged from 0.02 to 0.1. Of the 8 core samples that exhibited radioactivity, four samples contained 0.04 percent eU, and 0.2, 0.06, 0.07, and 0.10 percent eU were determined for one of each of the other four samples. Sludge samples from the equivalent intervals of Hole No. 5 had eU percentages 2½ to 10 times that determined for the cores, therefore quantitative evaluation of uranium content based on data from the sludges may not be valid, especially as no rock samples with comparable consistently high equivalent uranium percentages have been taken from this area. Wet assays of sludges from the interval 95 to 125 feet below the collar of Hole No. 5 showed 0.19 to 0.34 percent U_3O_8, which agrees

closely with the eU determinations. The cores from Hole No. 6 showed appreciable radioactivity only through the following intervals:

Feet below collar of hole	eU Percent
22-32 (8.3 ft. of core recovered	0.03
54-65 (only 1.2 ft. of core recovered)	0.04

Sludge samples from Hole No. 5 gave the following data:

Feet below collar of hole	eU Percent	U_3O_8 Percent (wet analysis
5-10	0.25	(not determined)
50-55	0.12	0.14
55-60	0.012	(not determined)
60-65	0.14	0.17

The remainder of the sludge samples showed only traces of or no radioactivity. Torbernite was the only uranium mineral noted in the cores and sludges from the drill holes.

Date for diamond drill Holes Nos. 1 and 2 on the adjacent Acme claim (see fig. 2) are not available.

PROPOSED EXPLORATION PROGRAM

As the exploration program set forth in the docket is vague, preliminary to examining the Utah and California claims, the writer spent several hours discussing possible exploration programs with Mr. and Mrs. Leach. From this discussion it developed that the applicants have only vague ideas of what they wish to do. However, the following points are clear:

1. The applicants wish no exploration on the Floyd Collins claim. They reluctantly did consider a technically unfeasible exploration shaft at the south end of the claim, but later

discarded the idea. In considering this application, it is probable that an exploration proposal should be entertained only for the best mineralized area on the Collins claim. The applicants forbid consideration of any such exploration, because they wish to preserve this area for the "gouging" of small quantities of torbernite to be used in their patent medicine products.

2. The applicants wish any exploration program on the Utah and California claims to be designed to explore what they believe to be a "large, disseminated deposit" in the granite to the west of the dikes shown on figure 2. This writer and Mr. Gillerman believe that if any exploration were plausible in the Utah-California claims area, it should take into account the localization of uranium near the northwest-trending dikes and faults. At one time Mr. Leach had considered drifting from the California shaft along the main northwest-trending dike to the "proposed" shaft shown on figure 2. This plan was rejected by him in favor of drifting in vague northwesterly and southwesterly directions, an undetermined distance but possibly hundreds of feet, from the bottom of the "proposed" shaft - to be 50 feet, or "maybe" 100 feet deep according to the applicants. If this work were satisfactory (in the opinion of the applicants) a 100-foot drift northwest from the California shaft would be driven, with no particular target in mind. Numerous other proposals were bandied about by the applicants, but eventually the above proposals were the only ones that they would consider.

EXPLORATION POTENTIAL OF THE LEACH PROPERTIES

Exploration may be worthwhile in the best mineralized area on the Floyd Collins claim. However, further discussion of such work is unwarranted because the applicant does not wish exploration on this claim.

The zones that include appreciable amounts of uranium on the Utah and California claims are narrow. Persistence of these zones is expectable only along the northwest-trending basic dikes and fissures, but radiometric traverses of the outcrops strongly suggests that uranium is sporadic in distribution along the favorable trends. Samples taken in the two areas that exhibit the greatest radioactivity, at the California Shaft and California Extension Shaft, contained respectively 0.19 and .043 percent equivalent uranium. The core samples that showed radioactivity from diamond drill holes 5 and 6 contained equivalent uranium contents comparable to the content of surface exposures judging from Geiger counter comparisons. Most of the sludge samples from the diamond drill holes contained eU contents greater than any content known from rock samples collected from the area. As the uranium-bearing zones are narrow and sporadic and with rare exceptions the uranium content of the rock samples taken to date has been less than 0.1 percent U_3O_8, exploration along localizing structures on the Utah and California claims does not seem warranted. Certainly consideration of exploration of the granite, underlying the claims, as a potential disseminated commercial uranium deposit is not justified, because of the infinitesimally small overall uranium content of the granite.

CONCLUSIONS AND RECOMMENDATIONS

The Floyd Collins claim, at the applicants' request, is not considered for exploration. If there were potentiality for exploration on the Utah and California claims - which is not likely because of the low uranium content of the mineralized zones and sporadic distribution of the uranium - a feasible exploration program could not be negotiated with the applicant. Therefore it must be recommended that an exploration loan be denied.