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

IN REPLY REFER TO:
G-MD-CNM

Defense Minerals Administration
RECEIVED
JUL 13 1954

July 13, 1954

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMEA-3207 (thorium-monazite)

To: E. W. Ellis, Defense Minerals Exploration Administration
From: D. M. Larrabee, U. S. Geological Survey
Applicant: Mora Monazite Company.
Name of property: High Peak claim.
Location of property: San Miguel County, New Mexico.
Date of Field Team Report: May 28, 1954 (received July 9, 1954).
Authorship of Field Team Report: J. N. Faick and T. M. Romalo.
Field Team's recommendation: Denial.

"Although minor amounts of monazite ore might be found by exploration, the anticipated production would be insignificant."

Comments: None.
ACTION RECOMMENDED: Follow Field Team's recommendation.

D. M. Larrabee

D. M. Larrabee

IN REPLY REFER TO:
G-MD-CDM

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

July 13, 1954

Memorandum

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Field Team's recommendation: Denial.

"Although minor amounts of monazite ore might be found by exploration, the anticipated production would be insignificant."

Comments: None.
ACTION RECOMMENDED: Follow Field Team's recommendation.

D. M. Larrabee

Copy to: DMEA (3)

IN REPLY REFER TO:
G-ND-CRM

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

July 13, 1954

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMEA-3207 (thorium-monazite)

To: E. W. Ellis, Defense Minerals Exploration Administration
From: D. M. Larrabee, U. S. Geological Survey
Applicant: Mora Monazite Company.
Name of property: High Peak claim.
Location of property: San Miguel County, New Mexico.
Date of Field Team Report: May 28, 1954 (received July 9, 1954).
Authorship of Field Team Report: J. N. Faick and T. M. Romale.
Field Team's recommendation: Denial.

"Although minor amounts of monazite ore might be found by exploration, the anticipated production would be insignificant."

Comments: None.
ACTION RECOMMENDED: Follow Field Team's recommendation.

D. M. Larrabee

Copy to: DMEA (3) ✓

IN REPLY REFER TO:
G-ND-CHM

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

July 13, 1954

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMEA-3207 (thorium-monazite)

To: E. W. Ellis, Defense Minerals Exploration Administration
From: D. M. Larrabee, U. S. Geological Survey
Applicant: Nora Monazite Company.
Name of property: High Peak claim.
Location of property: San Miguel County, New Mexico.
Date of Field Team Report: May 28, 1954 (received July 9, 1954).
Authorship of Field Team Report: J. N. Faick and T. M. Romalo.
Field Team's recommendation: Denial.

"Although minor amounts of monazite ore might be found by exploration, the anticipated production would be insignificant."

Comments: None.
ACTION RECOMMENDED: Follow Field Team's recommendation.

D. M. Larrabee

Copy to: DMEA (3)

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

224 New Customhouse
Denver 2, Colorado

June 29, 1954.

Memorandum

To: Administrator, Defense Minerals Exploration Administration, Attention: 200

From: Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3207 (Thorium-Monazite), Mora Monazite Co.'s High Peak Monazite claim, Willow Creek Mining District, San Miguel County, New Mexico.

Enclosed are four copies of the report of examination on the subject property, a copy of the letter of denial to the applicant, and two copies of Form 3b.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures

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

224 New Customhouse
Denver 2, Colorado

June 29, 1954.

Mr. John P. Mahoney
Mora Monazite Company
Brush Ranch
Tererro, New Mexico

Re: Docket No. DMEA-3207 (Thorium-Monazite)

Dear Mr. Mahoney:

Reference is made to your application for Government aid on the High Peak Monazite claim, San Miguel County, New Mexico.

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

A careful study of your property and data available to this agency reveals that the probability of disclosing mineable reserves of Thorium and Monazite is not considered sufficiently promising to justify Government participation. Under these circumstances, we regret to advise that your application for exploration aid is denied.

Very truly yours,

W. H. King
W. H. King
Field Team, Region IV

A. H. Koschmann
A. H. Koschmann
Field Team, Region IV

RDB:cwm

cc: Docket
Administrator, DMEA
WRStorms
AFShride
CETowle
AHKoschmann
Chron.

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

COPY

224 New Customhouse
Denver 2, Colorado

June 29, 1954.

Memorandum

To: Administrator, Defense Minerals Exploration Administration, Attention: 200

From: Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3207 (Thorium-Monazite), Mora Monazite Co.'s High Peak Monazite claim, Willow Creek Mining District, San Miguel County, New Mexico.

Enclosed are four copies of the report of examination on the subject property, a copy of the letter of denial to the applicant, and two copies of Form 3b.

/s/ W. H. King

/s/ A. H. Koschmann

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
7-9-54
(date)

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

COPY

224 New Customhouse
Denver 2, Colorado

June 29, 1954.

Mr. John P. Mahoney
Mora Monazite Company
Brush Ranch
Tererro, New Mexico

Re: Docket No. DMEA-3207 (Thorium-Monazite)

Dear Mr. Mahoney:

Reference is made to your application for Government aid on the High Peak Monazite claim, San Miguel County, New Mexico.

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

A careful study of your property and data available to this agency reveals that the probability of disclosing mineable reserves of Thorium and Monazite is not considered sufficiently promising to justify Government participation. Under these circumstances, we regret to advise that your application for exploration aid is denied.

Very truly yours,

/s/ W. H. King
Field Team, Region IV

/s/ A. H. Koschmann
Field Team, Region IV

RDB:cwm
cc: Docket
Administrator, DMEA
WRStorms
AFShride
CETowle
AHKoschmann
Chron.

Reviewed by
DMEA OPERATING COMMITTEE
7-9-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

June 29, 1954.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Engineering Report of Examination - DMEA Docket 3207 (Thorium-Monazite), More Monazite Co.'s High Peak Monazite Claim, Willow Creek Mining District, San Miguel County, New Mexico.

Enclosed are the original and ten copies of the Engineering Report of Examination on the subject docket.

The applicant requested $19,907.40 to explore the High Peak Monazite claim by approximately 2,000 feet of surface trenching.

The examining team does not believe that the property has enough merit to justify Government participation in an exploration project and recommends denial of the application.

We concur in this recommendation.

W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
7-9-54
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

June 22, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3207 (monazite), Mora Monazite Company, High Peak Claim, San Miguel County, New Mexico

Enclosed are the original and 8 copies of an examination report by John N. Faick of the U. S. Geological Survey on the subject property.

Mr. Faick concludes that although minor amounts of monazite ore might be found by exploration, the anticipated production would be insignificant. He therefore recommends denial of the application for exploration assistance.

E. M. Hawkman
for A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

Reviewed by
DMEA OPERATING COMMITTEE
7-9-54
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BOX 4126 University Station
Tucson, Arizona

June 18, 1954

MEMORANDUM

To: A. H. Koschmann

From: John N. Faick

Subject: Mora Monazite Company, High Peak Claim
San Miguel County, New Mexico (Monazite) DMEA 3207

Enclosed are the original and 8 copies of a report of examination of the above subject.

John N. Faick

JNF:ms

Enclosures

cc. Koschmann (8)
Storms

Reviewed by
DMEA OPERATING COMMITTEE
7-9-54
(date)

May 28, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Report on Docket DMEA-3207, Mora Monazite Co.'s High Peak Monazite Claim, Willow Creek Mining District, San Miguel County, N. Mex.

Enclosed are original and 10 copies of the section on Summary, Conclusions and Recommendations by T. M. Romslo of the Bureau of Mines and John N. Faick of the Geological Survey, and the section on Engineering by Romslo for the above report. A separate section on Geology will be submitted by the Geological Survey.

Because there seems little chance of finding any significant amount of monazite by additional exploration work, the examiners recommend denial of an exploratory lease. The Atomic Energy Commission's geologist also seems to be of the same opinion. I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. H. King (10)
J. N. Faick
DMEA-3207
DF

WRStorms:frj

Reviewed by
DMEA OPERATING COMMITTEE
7-9-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-3207, Mesa Monazite Company

High Peak Monazite Claim

Willow Creek Mining District

San Miguel County, New Mexico

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

John N. Faick, Geologist
U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE

7-9-54
(date)

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By T. M. Remale[1] and John N. Faick[2]

Late in 1953 the Mera Monazite Co. applied for Governmental aid to explore its High Peak mining claim, San Miguel County, N. Mex. The application, made to the Defense Minerals Exploration Administration, was docketed as DMEA-3207. It was reviewed and sent to the field for investigations. The property was not examined until May 1954 because of snow on the claims during the winter months.

Property adjacent to the High Peak claim originally was located for gold during the early 1900's. A small amount of exploratory work was done at that time, but little or no gold was produced.

The High Peak claim and adjaining property next was located for pegmatite minerals in 1945. No exploratory work was done until 1950 when about 100 pounds of sorted monazite ore was produced from a few shallow pits. The property then lay idle until September 1953 when the Mera Monazite Co. acquired the property and started exploratory work. To the present time, the company has produced a few hundred pounds of monazite ore from float rock and about 1.25 tons of hand sorted ore from 3 shallow trenches.

1/ Mining Engineer, U. S. Bureau of Mines
2/ Geologist, U. S. Geological Survey

On the High Peak claim, pre-Cambrian granite has been intruded by a north-south pegmatite dike about 100 feet wide. The dike, traceable for a length of about 2,000 feet, appears to dip almost vertically. Two trenches have been excavated in narrow zones of massive quartz that may be genetically related to a bold outcrop of quartz that occurs at or near the eastern border of the dike. Both walls of the narrow zones of quartz consist of potash feldspar with intergrowths of quartz and mica. A mica-rich zone up to 6 inches wide locally is present at the contact of the 2 rocks. The mica, pale green in color, is iron-stained, ruled and bent.

Monazite occurs mainly as flattened crystals along a weak fracture at the contact of quartz with the feldspar-quartz-mica rock. It forms discontinuous veinlets, generally less than $\frac{1}{2}$ inch thick, and lenses ranging up to 8 inches wide by 3 feet long. Pods of monazite up to 6 inches in diameter appear to be concentrated at the intersections of fractures. Spessarite, as pods up to 3 inches in diameter, is locally present in small zones overlying the monazite. A few specimens of samarskite were found in surface debris near the northeast portion of the area examined. The presence of samarskite is substantiated by the Atomic Energy Commission which reported "specks of samarskite associated with the more feldspar-rich portion (?) of the pegmatite".

The deposit contains no measured ore reserves. Indicated reserves of monazite are estimated at 0.36 tons per foot of depth, containing 10.6 percent thoria and 57.0 percent rare earth oxides. The inferred reserves are estimated at 1.8 tons per foot of depth of monazite of a grade similar to that of the indicated reserves.

Mora Monazite Co.'s request for Governmental aid on explorations at its High Peak claim should be denied because the potential reserves of the deposit are confined to an insignificant amount of monazite that could not be profitably exploited.

MORA MONAZITE COMPANY
HIGH PEAK CLAIM
SAN MIGUEL COUNTY, NEW MEXICO
(MONAZITE)

DMEA 3207

GEOLOGY

by
John N. Fulck
Geologist, U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
7-9-54
(date)

MORA MONAZITE COMPANY
HIGH PEAK CLAIM
SAN MIGUEL COUNTY, NEW MEXICO
(MONAZITE)

DMEA 3207

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CONCLUSIONS AND RECOMMENDATIONS	7

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Figure 2 GEOLOGIC MAP	Following Page 1

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INTRODUCTION

On behalf of the Defense Minerals Exploration Administration, the High Peak No. 1 Claim, which is part of the High Peak and Sorefoot group of 7 claims, was examined to determine if the property was suitable for Government participation in exploration for monazite. The property is situated in San Miguel County, about 9 airline miles northeast of Pecos, New Mexico, and the High Peak prospects are situated in sections 19 and 30, T. 17 N.; R. 13 E. The examination was made May 5, 1954 by T. M. Romslo, U. S. Bureau of Mines and J. N. Faick, U. S. Geological Survey.

The application was submitted to DMEA by the Mora Monazite Company and was docketed as DMEA 3207. The President of the applicant company is John P. Mahoney, Pecos, New Mexico, who accompanied the examiners on the field examination.

Exploration and development previously done on the High Peak claim (see Figure 2) consisted of digging several prospect pits and trenches, and the digging of the required discovery cut. A few of the older prospect pits were dug for gold, and the newer pits were dug primarily in search for monazite.

GEOLOGY

The High Peak No. 1 claim is situated at the crest of a northerly-trending ridge (see Figure 2), along which a prominent elongate mass of quartz crops out throughout a distance of about 2000 feet. The quartz mass, which is quite irregular at the outcrop, probably is the core, or at least a dominant mineral zone, in a very

large pegmatite, which occurs in a host rock of pre-Cambrian granite. The granite varies from light gray to pink or red, and the grain size ranges from medium to coarse. The pegmatite formed by replacement of the granite, consequently, irregular contacts, interfingering of granite and pegmatite, and pronounced variations in mineral zoning are conspicuous features of the deposit.

Adjacent to the prominent quartz core, and lying along the west side of it is a zone about 75 feet wide, which exhibits many characteristics common to simple pegmatites. In this zone are graphic intergrowths of quartz and orthoclase, and in many places these are interlayered with zones of unreplaced granite or zones of massive quartz. Coarse-grained muscovite is widely distributed in the deposit, but at no place is present in appreciable concentrations.

The minerals for which the deposit was prospected are almost entirely confined to the pegmatitic zone west of the quartz core. In this zone mica, orthoclase, monazite, spessartite and samarskite have been identified.

Muscovite tends to form irregular vein-like stringers or masses and pods that in many places are localized along contacts between other minerals, such as contacts between quartz and feldspar, or between intergrowths of these two minerals and the granitic country rock. Mica, which occurs in books from 1/2 inches to 2 inches square, and in places forms elongate vein-like intergrowths with quartz and feldspar, is pale green and cloudy. The mica books and sheets are ruled, warped and fractured. Probably less than 5 percent of the pegmatitic body is mica, and it obviously does not exist in recoverable grade or quantity.

Most of the monazite occurs as flattened crystals varying in size from mere specks to about 2 inches in maximum dimension. The crystals, many of which have one or two well developed faces, are mostly distorted and shattered, so that only crystal fragments are usually recovered. Monazite, the distribution of which is shown in red on Figure 2, is an abundant constituent in discontinuous veinlets generally less than 1/2 inch thick, and in lenses ranging up to 8 inches wide and about 3 feet long. It also is concentrated in small pods and pockets, usually not over 8 inches in maximum dimension.

The monazite in most places occurs along with or near quartz-orthoclase-mica intergrowths and in some places is localized near the contacts between these intergrowths and massive quartz. There appears to be a definite tendency for the concentrations of monazite to be localized along steeply dipping fractures or joints (see Figure 2), some of which occur at the contacts between mineral zones and others which are nearly normal to the contacts. Pods or pockets containing considerable monazite were localized at a few intersections of fractures.

A few specimens of samarskite were reportedly found by the applicants in loose quartz debris in prospect No. 5, which appears to be near the eastern side of the quartz core previously mentioned. Samarskite was not recognized by the DMEA examiners; however, in a letter to this writer from R. M. Pernac, Albuquerque, New Mexico, the Atomic Energy Commission reported seeing "a few tiny specks of samarskite associated with the more feldspar-rich portion (?) of the pegmatite.

ORE RESERVES, GRADE, AND PRODUCTION

Radioactivity was measured with a Beta Gamma Survey Meter, A.E.C. Model SGM-181, Serial No. 125, manufactured by El Tronics, Inc., Philadelphia, Pennsylvania. Preliminary examination of the property showed that it was practical to use the 2.0 scale for all measurements of radioactivity and these are reported in milliroentgens per hour. Actual field measurements of radioactivity are shown on Figure 2, for as many places as practical.

The average background was found to be .05 mr/hr. Mineralized zones containing significant amounts of monazite produced radioactivity ranging from .8 to 2.0 mr/hr. Selected monazite crystals, and hand sorted ore produced radioactivity ranging from 1.5 to 2.0 mr/hr.

Meter readings, taken at places other than monazite exposures, showed impulses essentially the same as the background count. Scintillometer readings, reported by the applicant, indicate that a zone having slightly higher than normal radioactivity extends about 150 feet north of the No. 1 prospect and about 100 feet south of it.

The analyses of 6 samples, 3 taken during the DMEA examination and the others reported by the Atomic Energy Commission or by the applicant are given in Table 1.

TABLE I

ANALYSIS OF SAMPLES, MORA MONAZITE COMPANY'S HIGH PEAK CLAIM

No.	Description	Percent ThO_2	Percent Rare Earths	Percent U_3O_3	Percent V_2O_5
DMEA 11402	Pod, 6 in. dia.	5.2	31.0	-	-
DMEA 11403	Lens, 2 in. by 24 in.	5.3	31.4	0.30	
	Prospect 2				
DMEA 11404	Hand Sorted Ore	10.6	57.0	-	
	A.E.C. (Albuquerque) Monazite concentration	-	-	0.7	3.28
	Sample submitted by applicant to Rare Earths, Inc.	11.11	58.75		
	Analysis by U.S.B.M., Washington, D.C., as reported by Rare Earths, Inc.	9.86	60.2	0.34	

In addition to the above analysis, material collected by the applicant for prospect No. 1 was submitted to the Atomic Energy Commission, Grand Junction, Colorado, and a radiometric analysis of the sample was reported as showing 0.09 percent equivalent U_3O_8 and 15.04 percent equivalent ThO_2.

It is probable that the sorted ore and concentrate represents the character of the material that could be obtained by selectively mining and hand sorting of material represented by samples 11402 and 11403.

Total production from the property is estimated at 1½ tons of sorted monazite ore, containing 10.6 percent thoria, 57.0 percent rare earth oxides, and 0.30 percent U_3O_8. About 1 1/4 tons of this material were obtained from prospecting operations and about one-fourth ton was float material collected from the surface. The applicant company has a firm market for the ore, and will sell the best specimens to mineral collectors and the remainder will be shipped to Rare Earths, Inc., Patterson, N.J. The sample of the ore submitted by the

applicant to Rare Earths, Inc. contained 58.75 percent rare earth oxides and 11.11 percent thoria. The corporation offered to purchase such ore for $362.50 per ton F.O.B. shipping point.

Reserves of recoverable monazite are very small. The estimated 1.25 tons of monazite concentrate thus far produced, as a result of prospecting activities, have been obtained almost entirely from prospects No. 1 and No. 2. The combined volume of these two prospects is equivalent to a zone about 50 feet long, 6 feet wide and 3½ feet deep. Thus, if a prospect of this size yielded 1 1/4 tons of monazite then it can be calculated that all of the prospects combined yielded about 0.36 tons of monazite per foot of depth. This is approximately the magnitude of the indicated reserves, the inferred reserves may be several times greater.

It is assumed that monazite is present in this same relative concentration beneath the prospect pits and trenches, but this amount of monazite is not regarded as significant. It is apparent that the most promising exposures have been prospected and that other mineralized zones will contain relatively smaller amounts of monazite. Measurement of radioactivity indicate that the mineralized zone may be at least 250 feet long and 75 feet wide; however, radioactivity was erratic and some of it is probably due to fly rock from prospecting operations.

Although a few tons of monazite probably could be gleaned from this deposit it is almost certain that the cost of the monazite would greatly exceed its value. Monazite, at present, is the only

known recoverable material. The amount of radioactivity material is too small to be of economic interest, and the feldspar and mica are not present in commercial grade or quantity.

CONCLUSIONS AND RECOMMENDATIONS

It is believed the most encouraging mineralized zones on the Mora Monazite Company's High Peak No. 1 claim have been adequately prospected, and no other zones were found where exploration would be justified. A total of about 1½ tons of hand sorted monazite have been produced from the claim; and the cost of production undoubtedly greatly exceeded the value of the ore. Indicated reserves are estimated at about 0.36 tons per foot of depth in the zones of greatest mineralization and inferred reserves may be a few times this amount, but this ore could be produced only at considerable loss because of the existing ratio of host rock to monazite.

The High Peak pegmatite does not contain significant amounts of monazite, nor worthwhile recoverable quantities of uranium, mica, or feldspar; therefore, it is recommended that the application for Government assistance in exploration be denied.

DMEA-3207, MORA MONAZITE COMPANY
HERN PEAK MONAZITE CLAIM
WILLOW CREEK MINING DISTRICT
SAN MIGUEL COUNTY, NEW MEXICO

Engineering Report

By T. M. Rosalo
Mining Engineer
U. S. Bureau of Mines

May 1954

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

DMEA-3207, MORA MONAZITE COMPANY
HIGH PEAK MONAZITE CLAIM
WILLOW CREEK MINING DISTRICT
SAN MIGUEL COUNTY, N. MEXICO

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Physical features and climate	2
History and production	3
Property and ownership	4
Geology and deposit	4
Ore reserves	6
Economic outlook	8
Conclusions	8
Recommendations	9

ILLUSTRATIONS

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1	Location map	1
2	Geologic map	(see Geological report)

INTRODUCTION

The Mara Monazite Co. made application late in 1953 to the Defense Minerals Exploration Administration for Governmental aid on a proposed exploratory project at its High Peak claim near Pecos, N. Mex. The application was received at Region IV Headquarters on November 3, 1953, reviewed, docketed as DMEA-3207, and sent to the field for investigation. It proposed explorations for monazite and related pegmatite minerals by excavating 2,000 lineal feet of trenches at an estimated total cost of $20,000.00.

The deposit was examined by John N. Faick, Geological Survey and T. M. Ramale, Bureau of Mines, on May 5, 1954, shortly after snow, that obscured the deposit during the winter months, had melted. John F. Mahoney, an official of the Mara Monazite Co., was present during the investigations. The Atomic Energy Commission had made a brief reconnaissance examination of the property on April 29, 1954.

LOCATION AND ACCESSIBILITY

The Mara Monazite Co.'s High Peak claim is approximately 9 air miles northeast of Pecos, N. Mex. (figure 1). Pecos is about 25 miles east of Santa Fe, the capital of New Mexico, via U. S. Highway 84 and 85. The claim may be reached from Pecos by traveling 11.3 miles northeasterly on a graded U. S. Forest Service road, thence northerly 2.5 miles on an abandoned logging road that ends at an old

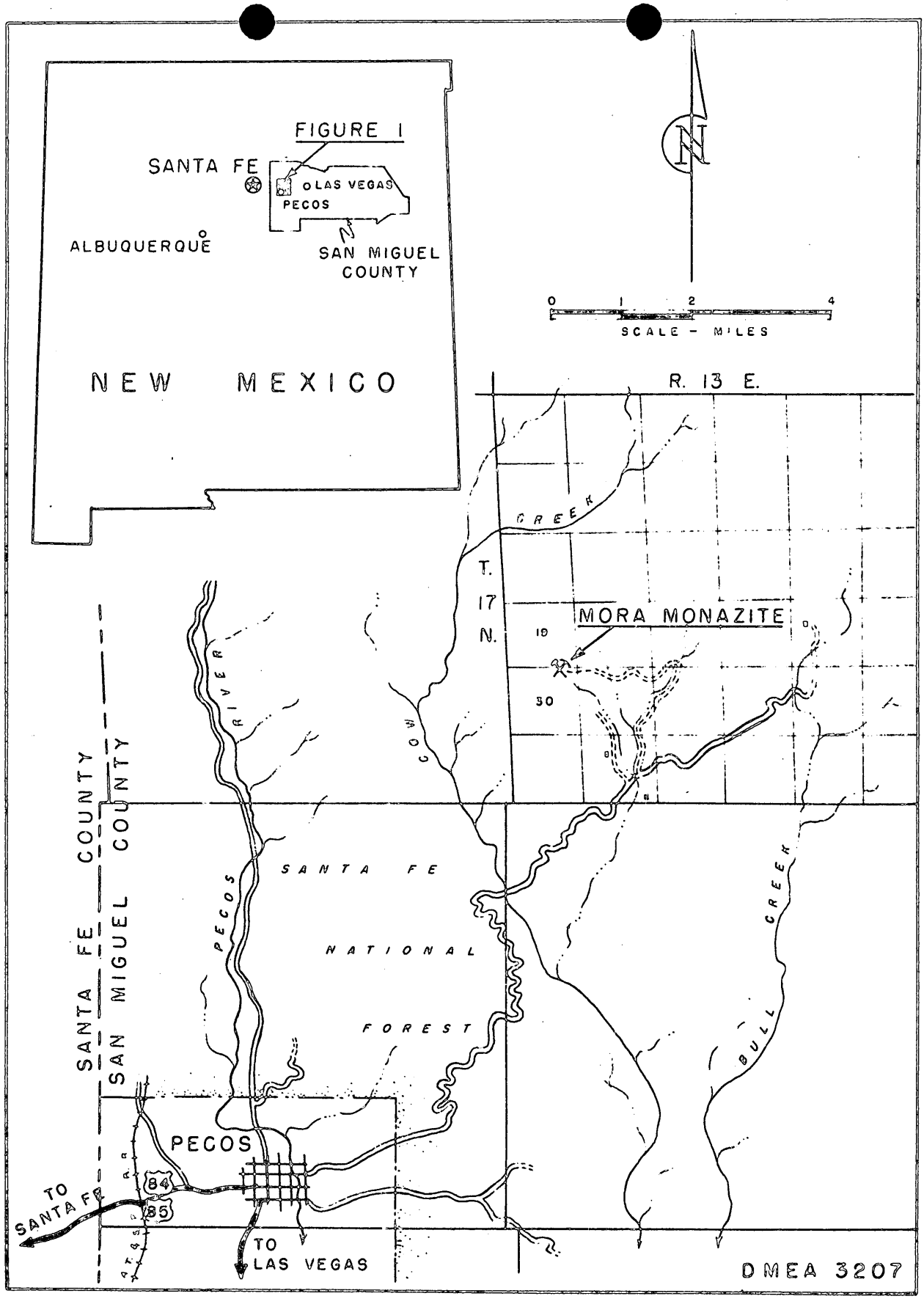

FIGURE I. - LOCATION MAP - MORA MONAZITE CO.
HIGH PEAK CLAIM SAN MIGUEL COUNTY, NEW MEXICO

log cabin. The last 1.1 miles of the logging road contains a few short, rough and steeply inclined sections that barely are passable with a 4-wheel drive vehicle.

PHYSICAL FEATURES AND CLIMATE

The Mora Monazite Co.'s property is situated in the south-central portion of the Sangre de Cristo Mountains at an average altitude of about 9,400 feet. It is at the crest of a north-south trending ridge, with moderately steep side slopes to Bag Canyon on the east and Tijeras Canyon to the west. In the immediate vicinity of the claim, the topography is moderately rugged with a maximum relief of about 500 feet. Drainage in the area is southward via Cow Creek, an intermittent stream.

Vegetation flourishes in the area. Aspen trees are common to the small meadows, while yellow pine is the dominant growth of the higher altitudes.

Precipitation, probably over 25 inches per year, occurs mainly as late summer showers and winter snows. The summer climate is generally mild and winter temperatures are not extreme although sub-zero temperatures are common. Snow, generally a foot or more in depth, stands for several weeks during the winter.

HISTORY AND PRODUCTION

Mining claims in the vicinity of the applicant's property first were located for gold during the early 1900's. A small amount of exploratory work was done, but little or no gold was produced. Claims first were located for pegmatite minerals in 1945. Little or no work was done on the claims until 1950 when probably about 100 pounds of hand-sorted monazite was produced from a few shallow pits. The property then laid idle until April 1953 when it was relocated by a group of 5 partners. The applicant acquired the property from the owners in September, and started pitting and trenching operations during October 1953.

Total production from the property is estimated at 1½ tons of ore containing 10.6 percent thoria, 57.0 percent rare earth oxides, and 0.30 percent U_3O_8. It includes about one-fourth ton of float rock, the remainder being sorted material from trenching operations. The ore, after removal of monazite specimens for sale to mineral collectors, shortly will be shipped to Rare Earths, Inc., Patterson, N. J.

Samples of the ore shipped by the owner to Rare Earths, Inc., contained 58.75 percent rare earth oxides and 11.11 percent thoria. The corporation offered to purchase such ore at $342.50 per ton, f.o.b. shipping point. The offer said that the ore could be crushed to ½-inch mesh and packed in open-head drums containing about 1,000 pounds.

Current prices on monazite crystals are: Crystal fragments with 1 or more faces are 50 cents a pound; perfect crystals are quoted at 75 cents to $3.00 per pound.

PROPERTY AND OWNERSHIP

The property, comprising 7 unpatented lode mining claims in the Santa Fe National Forest, is owned by the Mera Monazite Co., Pecos, N. Mex. (formerly of the Brush Ranch, Tererro, N. Mex.). It is situated in secs. 19 and 30, T. 17 N., R. 13 E., San Miguel County, N. Mex. The company, as applicant for Governmental aid, requested that exploratory work be confined to one of the 7 claims, High Peak claim No. 1.

GEOLOGY AND DEPOSIT

The dominant geologic feature on the property is a bold, elongated body of massive quartz that crops out along the crest of a north-south trending ridge. Pre-Cambrian granite, coarse-grained and pinkish in color, crops out at a few widely scattered places along the slopes of the ridge. Shallow pits and trenches, and a few rock outcrops indicate that the massive quartz occurs at or near the eastern border of a pegmatite dike about 100 feet wide and probably as much as 2,000 feet long. The dike strikes about N. 20° E. and appears to dip almost vertically.

Two trenches have been excavated in narrow zones of massive quartz that may be genetically related to the bold outcrop of quartz. The massive quartz probably forms the innermost zone or core of the dike. Both walls of the small quartz bodies consist of potash feldspar with intergrowths of quartz and mica. A mica-rich zone up to 6 inches wide locally is present at the contact of the 2 rocks. The mica, mainly pale green in color and iron-stained, occurs as books ranging up to ½ inch thick by 2 inches square. The books are ruled and bent. No clear sheet mica was observed. The quartz bodies are cut by weak fractures that roughly parallel the strike of the dike. They also are cut by a few crosscutting weak fractures.

Monazite occurs mainly as flattened crystals between the massive quartz and the feldspar-quartz-mica rock. It forms discontinuous veinlets generally less than ½ inch thick, and lenses ranging up to 8 inches wide and 3 feet long. The veinlets and lenses are localized along a weak fracture at the contact. Pods of monazite crystals up to 6 inches in diameter appear to be concentrated at the intersections of fractures. The color of the monazite ranges from yellowish to tan to brown. Feldspar in contact with the monazite is of similar color.

Sample No.	Description	Percent ThO_2	Percent $R.E._2O_3$	Percent (Chemical) U_3O_8	V_2O_5
11404	Hand-sorted ore	10.6	57.0	-	-
11402	Pod, 6 in. dia., trench 1	5.2	31.0	-	-
11403	Lens, 2 in. by 24 in., trench 2	5.3	31.4	0.30	-
	A.E.C. monazite concentration	-	-	0.07	3.28

The assay of hand-sorted material probably closely represents the grade of ore produced from the 2 trenches. The other assays probably are indicative of the mineralized zones.

Potential reserves can best be estimated from the production of 1.25 tons of hand-sorted ore from 2 trenches having a total length of 30 feet and averaging 6 feet wide by 3.5 feet deep. On this basis, the indicated reserves below the trenches amount to about 0.36 tons per foot of depth of material containing 10.6 percent thoria and 57 percent rare earths.

Meter readings, taken at places other than at monazite exposures, showed impulses essentially the same as the background count. Some of the readings, taken along possible extensions of the mineralized zone, were in areas covered by a few inches to probably as much as 2 feet of loose rock and soil. In these same areas, the operator reported that scintillometer readings indicated that abnormal radioactivity extended for a strike length of about 200 feet beyond the trenches. It is possible that these results indicate that the ore mineralization is confined to a strike length of 250 feet. However, the abnormal radioactivity does not necessarily represent ore in place because it may be due to the presence of float rock or monazite "fly-rock" from blasting operations.

It probably is reasonable to assume that the untested favorable area contains monazite concentrations similar to those exposed by the trenches. On this basis, inferred reserves of monazite are estimated at 1.8 tons per foot of depth.

ECONOMIC OUTLOOK

The economic aspects are estimated on the basis of possible production of monazite because the deposit apparently contains no significant concentrations of uranium ore, high-grade mica, feldspar, or other marketable products. Mining of the small, widely scattered mineralized zones, averaging 3.5 feet wide, would involve underground methods after possible open-pitting to depths of 10 to 20 feet. Approximately 75 tons of rock would have to be removed to recover 1 ton of selectively mined ore having a probable value of about $360.00. Mining Costs alone probably would not be less than $7.50 a ton of rock, or $562.50 per ton of recoverable monazite ore. Development costs probably would be not less than $60.00 per ton of recoverable ore.

CONCLUSIONS

The Mora deposit contains small amounts of monazite sporadically distributed in a pegmatite dike that apparently contains little or no uranium ore, high-grade mica or feldspar, or other marketable products. There is little or no chance for economic exploitation of the deposit because mining costs alone exceed the present market value of monazite.

The Atomic Energy Commission's opinion of the deposit's potential is contained in a letter of May 20, 1954 to John N. Faick, Geological Survey, from Ralph M. Perhac, Geologist, Atomic Energy Commission, Albuquerque, N. Mex. Mr. Perhac summarized his findings as follows:

"Because the monazite occurs as scattered, small segregations within the pegmatite, tonnage is apparently too low to warrant exploitation. Also the uranium content of the monazite is much too low to make ore. We are, therefore, planning no additional work at the property unless the owners turn up larger concentrations of monazite mineralization".

RECOMMENDATIONS

Denial of Mara Monazite Co.'s request for Governmental assistance is recommended because the potential reserves of the deposit are confined to an insignificant amount of monazite that cannot be exploited at a profit.

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

224 New Customhouse
Denver 2, Colorado

June 29, 1954.

Memorandum

To: Administrator, Defense Minerals Exploration Administration, Attention: 200.

From: Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3207 (Thorium-Monazite), Mora Monazite Co.'s High Peak Monazite claim, Willow Creek Mining District, San Miguel County, New Mexico.

Enclosed are four copies of the report of examination on the subject property, a copy of the letter of denial to the applicant, and two copies of Form 3b.

W. H. King

A. H. Koschmann

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

June 29, 1954.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Engineering Report of Examination - DMRA Docket 3207 (Thorium-Monazite), Mora Monazite Co.'s High Peak Monazite Claim, Willow Creek Mining District, San Miguel County, New Mexico.

Enclosed are the original and ten copies of the Engineering Report of Examination on the subject docket.

The applicant requested $19,907.40 to explore the High Peak Monazite claim by approximately 2,000 feet of surface trenching.

The examining team does not believe that the property has enough merit to justify Government participation in an exploration project and recommends denial of the application.

We concur in this recommendation.

W. H. King

W. H. King

Enclosures

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

June 22, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3207 (monazite), Mora Monazite Company, High Peak Claim, San Miguel County, New Mexico

Enclosed are the original and 8 copies of an examination report by John N. Falck of the U. S. Geological Survey on the subject property.

Mr. Falck concludes that although minor amounts of monazite ore might be found by exploration, the anticipated production would be insignificant. He therefore recommends denial of the application for exploration assistance.

E. N. Harshman
for A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BOX 4126 University Station
Tucson, Arizona

June 18, 1954

MEMORANDUM

To: A. H. Koschmann

From: John N. Faick

Subject: Mora Monazite Company, High Peak Claim
San Miguel County, New Mexico (Monazite) DMEA 3207

Enclosed are the original and 8 copies of a report of examination of the above subject.

John N. Faick

JNF:ms

Enclosures

cc. Koschmann (8)
Storms

May 28, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Report on Docket DMEA-3207, Mera Monazite Co.'s High Peak Monazite Claim, Willow Creek Mining District, San Miguel County, N. Mex.

Enclosed are original and 10 copies of the section on Summary, Conclusions and Recommendations by T. M. Remsle of the Bureau of Mines and John N. Faick of the Geological Survey, and the section on Engineering by Remsle for the above report. A separate section on Geology will be submitted by the Geological Survey.

Because there seems little chance of finding any significant amount of monazite by additional exploration work, the examiners recommend denial of an exploratory loan. The Atomic Energy Commission's geologist also seems to be of the same opinion. I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. H. King (10)
J. N. Faick
DMEA-3207
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-3207, Mora Monazite Company

High Peak Monazite Claim

Willow Creek Mining District

San Miguel County, New Mexico

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

John N. Faick, Geologist
U. S. Geological Survey

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By T. M. Romslo[1/] and John N. Faick[2/]

Late in 1953 the Mora Monazite Co. applied for Governmental aid to explore its High Peak mining claim, San Miguel County, N. Mex. The application, made to the Defense Minerals Exploration Administration, was docketed as DMEA-3207. It was reviewed and sent to the field for investigations. The property was not examined until May 1954 because of snow on the claims during the winter months.

Property adjacent to the High Peak claim originally was located for gold during the early 1900's. A small amount of exploratory work was done at that time, but little or no gold was produced.

The High Peak claim and adjoining property next was located for pegmatite minerals in 1945. No exploratory work was done until 1950 when about 100 pounds of sorted monazite ore was produced from a few shallow pits. The property then lay idle until September 1953 when the Mora Monazite Co. acquired the property and started exploratory work. To the present time, the company has produced a few hundred pounds of monazite ore from float rock and about 1.25 tons of hand sorted ore from 2 shallow trenches.

1/ Mining Engineer, U. S. Bureau of Mines
2/ Geologist, U. S. Geological Survey

On the High Peak claim, pre-Cambrian granite has been intruded by a north-south pegmatite dike about 100 feet wide. The dike, traceable for a length of about 2,000 feet, appears to dip almost vertically. Two trenches have been excavated in narrow zones of massive quartz that may be genetically related to a bold outcrop of quartz that occurs at or near the eastern border of the dike. Both walls of the narrow zones of quartz consist of potash feldspar with intergrowths of quartz and mica. A mica-rich zone up to 6 inches wide locally is present at the contact of the 2 rocks. The mica, pale green in color, is iron-stained, ruled and bent.

Monazite occurs mainly as flattened crystals along a weak fracture at the contact of quartz with the feldspar-quartz-mica rock. It forms discontinuous veinlets, generally less than $\frac{1}{2}$ inch thick, and lenses ranging up to 8 inches wide by 3 feet long. Pods of monazite up to 6 inches in diameter appear to be concentrated at the intersections of fractures. Spessarite, as pods up to 3 inches in diameter, is locally present in small zones overlying the monazite. A few specimens of samarskite were found in surface debris near the northeast portion of the area examined. The presence of samarskite is substantiated by the Atomic Energy Commission which reported "specks of samarskite associated with the more feldspar-rich portion (?) of the pegmatite".

The deposit contains no measured ore reserves. Indicated reserves of monazite are estimated at 0.36 tons per foot of depth, containing 10.6 percent thoria and 57.0 percent rare earth oxides. The inferred reserves are estimated at 1.8 tons per foot of depth of monazite of a grade similar to that of the indicated reserves.

Mora Monazite Co.'s request for Governmental aid on explorations at its High Peak claim should be denied because the potential reserves of the deposit are confined to an insignificant amount of monazite that could not be profitably exploited.

MORA MONAZITE COMPANY
HIGH PEAK CLAIM
SAN MIGUEL COUNTY, NEW MEXICO
(MONAZITE)

DMEA 3207

GEOLOGY

by
John N. Faick
Geologist, U. S. Geological Survey

MORA MONAZITE COMPANY
HIGH PEAK CLAIM
SAN MIGUEL COUNTY, NEW MEXICO
(MONAZITE)

DMEA 3207

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Figure 2 GEOLOGIC MAP	Following Page 1

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INTRODUCTION

On behalf of the Defense Minerals Exploration Administration, the High Peak No. 1 Claim, which is part of the High Peak and Sorefoot group of 7 claims, was examined to determine if the property was suitable for Government participation in exploration for monazite. The property is situated in San Miguel County, about 9 airline miles northeast of Pecos, New Mexico, and the High Peak prospects are situated in sections 19 and 30, T. 17 N.; R. 13 E. The examination was made May 5, 1954 by T. M. Romslo, U. S. Bureau of Mines and J. N. Faick, U. S. Geological Survey.

The application was submitted to DMEA by the Mora Monazite Company and was docketed as DMEA 3207. The President of the applicant company is John P. Mahoney, Pecos, New Mexico, who accompanied the examiners on the field examination.

Exploration and development previously done on the High Peak claim (see Figure 2) consisted of digging several prospect pits and trenches, and the digging of the required discovery cut. A few of the older prospect pits were dug for gold, and the newer pits were dug primarily in search for monazite.

GEOLOGY

The High Peak No. 1 claim is situated at the crest of a northerly-trending ridge (see Figure 2), along which a prominent elongate mass of quartz crops out throughout a distance of about 2000 feet. The quartz mass, which is quite irregular at the outcrop, probably is the core, or at least a dominant mineral zone, in a very

large pegmatite, which occurs in a host rock of pre-Cambrian granite. The granite varies from light gray to pink or red, and the grain size ranges from medium to coarse. The pegmatite formed by replacement of the granite, consequently, irregular contacts, interfingering of granite and pegmatite, and pronounced variations in mineral zoning are conspicuous features of the deposit.

Adjacent to the prominent quartz core, and lying along the west side of it is a zone about 75 feet wide, which exhibits many characteristics common to simple pegmatites. In this zone are graphic intergrowths of quartz and orthoclase, and in many places these are interlayered with zones of unreplaced granite or zones of massive quartz. Coarse-grained muscovite is widely distributed in the deposit, but at no place is present in appreciable concentrations.

The minerals for which the deposit was prospected are almost entirely confined to the pegmatitic zone west of the quartz core. In this zone mica, orthoclase, monazite, spessartite and samarskite have been identified.

Muscovite tends to form irregular vein-like stringers or masses and pods that in many places are localized along contacts between other minerals, such as contacts between quartz and feldspar, or between intergrowths of these two minerals and the granitic country rock. Mica, which occurs in books from 1/2 inches to 2 inches square, and in places forms elongate vein-like intergrowths with quartz and feldspar, is pale green and cloudy. The mica books and sheets are ruled, warped and fractured. Probably less than 5 percent of the pegmatitic body is mica, and it obviously does not exist in recoverable grade or quantity.

Most of the monazite occurs as flattened crystals varying in size from mere specks to about 2 inches in maximum dimension. The crystals, many of which have one or two well developed faces, are mostly distorted and shattered, so that only crystal fragments are usually recovered. Monazite, the distribution of which is shown in red on Figure 2, is an abundant constituent in discontinuous veinlets generally less than 1/2 inch thick, and in lenses ranging up to 8 inches wide and about 3 feet long. It also is concentrated in small pods and pockets, usually not over 8 inches in maximum dimension.

The monazite in most places occurs along with or near quartz-orthoclase-mica intergrowths and in some places is localized near the contacts between these intergrowths and massive quartz. There appears to be a definite tendency for the concentrations of monazite to be localized along steeply dipping fractures or joints (see Figure 2), some of which occur at the contacts between mineral zones and others which are nearly normal to the contacts. Pods or pockets containing considerable monazite were localized at a few intersections of fractures.

A few specimens of samarskite were reportedly found by the applicants in loose quartz debris in prospect No. 5, which appears to be near the eastern side of the quartz core previously mentioned. Samarskite was not recognized by the DMEA examiners; however, in a letter to this writer from R. M. Pernac, Albuquerque, New Mexico, the Atomic Energy Commission reported seeing "a few tiny specks of samarskite associated with the more feldspar-rich portion (?) of the pegmatite."

ORE RESERVES, GRADE, AND PRODUCTION

Radioactivity was measured with a Beta Gamma Survey Meter, A.E.C. Model SGM-18A, Serial No. 125, manufactured by El Tronics, Inc., Philadelphia, Pennsylvania. Preliminary examination of the property showed that it was practical to use the 2.0 scale for all measurements of radioactivity and these are reported in milliroentgens per hour. Actual field measurements of radioactivity are shown on Figure 2, for as many places as practical.

The average background was found to be .05 mr/hr. Mineralized zones containing significant amounts of monazite produced radioactivity ranging from .8 to 2.0 mr/hr. Selected monazite crystals, and hand sorted ore produced radioactivity ranging from 1.6 to 2.0 mr/hr.

Meter readings, taken at places other than monazite exposures, showed impulses essentially the same as the background count. Scintillometer readings, reported by the applicant, indicate that a zone having slightly higher than normal radioactivity extends about 150 feet north of the No. 1 prospect and about 100 feet south of it.

The analyses of 6 samples, 3 taken during the DMEA examination and the others reported by the Atomic Energy Commission or by the applicant are given in Table 1.

TABLE I

ANALYSIS OF SAMPLES, MORA MONAZITE COMPANY'S HIGH PEAK CLAIM

No.	Description	Percent ThO_2	Percent Rare Earths	Percent U_3O_3	Percent V_2O_5
DMEA 11402	Pod, 6 in. dia.	5.2	31.0	-	-
DMEA 11403	Lens, 2 in. by 24 in. Prospect 2	5.3	31.4	0.30	-
DMEA 11404	Hand Sorted Ore	10.6	57.0	-	-
	A.E.C. (Albuquerque) Monazite concentration	-	-	0.7	3.28
	Sample submitted by applicant to Rare Earths, Inc.	11.11	58.75		
	Analysis by U.S.B.M., Washington, D.C., as reported by Rare Earths, Inc.	9.86	60.2	0.34	

In addition to the above analysis, material collected by the applicant for prospect No. 1 was submitted to the Atomic Energy Commission, Grand Junction, Colorado, and a radiometric analysis of the sample was reported as showing 0.09 percent equivalent U_3O_8 and 15.04 percent equivalent ThO_2.

It is probable that the sorted ore and concentrate represents the character of the material that could be obtained by selectively mining and hand sorting of material represented by samples 11402 and 11403.

Total production from the property is estimated at $1\frac{1}{2}$ tons of sorted monazite ore, containing 10.6 percent thoria, 57.0 percent rare earth oxides, and 0.30 percent U_3O_8. About 1 1/4 tons of this material were obtained from prospecting operations and about one-fourth ton was float material collected from the surface. The applicant company has a firm market for the ore, and will sell the best specimens to mineral collectors and the remainder will be shipped to Rare Earths, Inc., Patterson, N.J. The sample of the ore submitted by the

applicant to Rare Earths, Inc. contained 58.75 percent rare earth oxides and 11.11 percent thoria. The corporation offered to purchase such ore for $362.50 per ton F.O.B. shipping point.

Reserves of recoverable monazite are very small. The estimated 1.25 tons of monazite concentrate thus far produced, as a result of prospecting activities, have been obtained almost entirely from prospects No. 1 and No. 2. The combined volume of these two prospects is equivalent to a zone about 50 feet long, 6 feet wide and $3\frac{1}{2}$ feet deep. Thus, if a prospect of this size yielded 1 1/4 tons of monazite then it can be calculated that all of the prospects combined yielded about 0.36 tons of monazite per foot of depth. This is approximately the magnitude of the indicated reserves, the inferred reserves may be several times greater.

It is assumed that monazite is present in this same relative concentration beneath the prospect pits and trenches, but this amount of monazite is not regarded as significant. It is apparent that the most promising exposures have been prospected and that other mineralized zones will contain relatively smaller amounts of monazite. Measurement of radioactivity indicate that the mineralized zone may be at least 250 feet long and 75 feet wide; however, radioactivity was erratic and some of it is probably due to fly rock from prospecting operations.

Although a few tons of monazite probably could be gleaned from this deposit it is almost certain that the cost of the monazite would greatly exceed its value. Monazite, at present, is the only

known recoverable material. The amount of radioactivity material is too small to be of economic interest, and the feldspar and mica are not present in commercial grade or quantity.

CONCLUSIONS AND RECOMMENDATIONS

It is believed the most encouraging mineralized zones on the Mora Monazite Company's High Peak No. 1 claim have been adequately prospected, and no other zones were found where exploration would be justified. A total of about $1\frac{1}{2}$ tons of hand sorted monazite have been produced from the claim; and the cost of production undoubtedly greatly exceeded the value of the ore. Indicated reserves are estimated at about 0.36 tons per foot of depth in the zones of greatest mineralization and inferred reserves may be a few times this amount, but this ore could be produced only at considerable loss because of the existing ratio of host rock to monazite,

The High Peak pegmatite does not contain significant amounts of monazite, nor worthwhile recoverable quantities of uranium, mica, or feldspar; therefore, it is recommended that the application for Government assistance in exploration be denied.

DMEA-3207, MORA MONAZITE COMPANY
HIGH PEAK MONAZITE CLAIM
WILLOW CREEK MINING DISTRICT
SAN MIGUEL COUNTY, NEW MEXICO

Engineering Report

By T. M. Romslo
Mining Engineer
U. S. Bureau of Mines

May 1954

DMEA-3207, MORA MONAZITE COMPANY
HIGH PEAK MONAZITE CLAIM
WILLOW CREEK MINING DISTRICT
SAN MIGUEL COUNTY, N. MEXICO

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ILLUSTRATIONS

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2	Geologic map	(see Geological report)

INTRODUCTION

The Mora Monazite Co. made application late in 1953 to the Defense Minerals Exploration Administration for Governmental aid on a proposed exploratory project at its High Peak claim near Pecos, N. Mex. The application was received at Region IV Headquarters on November 3, 1953, reviewed, docketed as DMEA-3207, and sent to the field for investigation. It proposed explorations for monazite and related pegmatite minerals by excavating 2,000 lineal feet of trenches at an estimated total cost of $20,000.00.

The deposit was examined by John N. Faick, Geological Survey and T. M. Romslo, Bureau of Mines, on May 5, 1954, shortly after snow, that obscured the deposit during the winter months, had melted. John P. Mahoney, an official of the Mora Monazite Co., was present during the investigations. The Atomic Energy Commission had made a brief reconnaissance examination of the property on April 29, 1954.

LOCATION AND ACCESSIBILITY

The Mora Monazite Co.'s High Peak claim is approximately 9 air miles northeast of Pecos, N. Mex. (figure 1). Pecos is about 25 miles east of Santa Fe, the capital of New Mexico, via U. S. Highway 84 and 85. The claim may be reached from Pecos by traveling 11.3 miles northeasterly on a graded U. S. Forest Service road, thence northerly 2.5 miles on an abandoned logging road that ends at an old

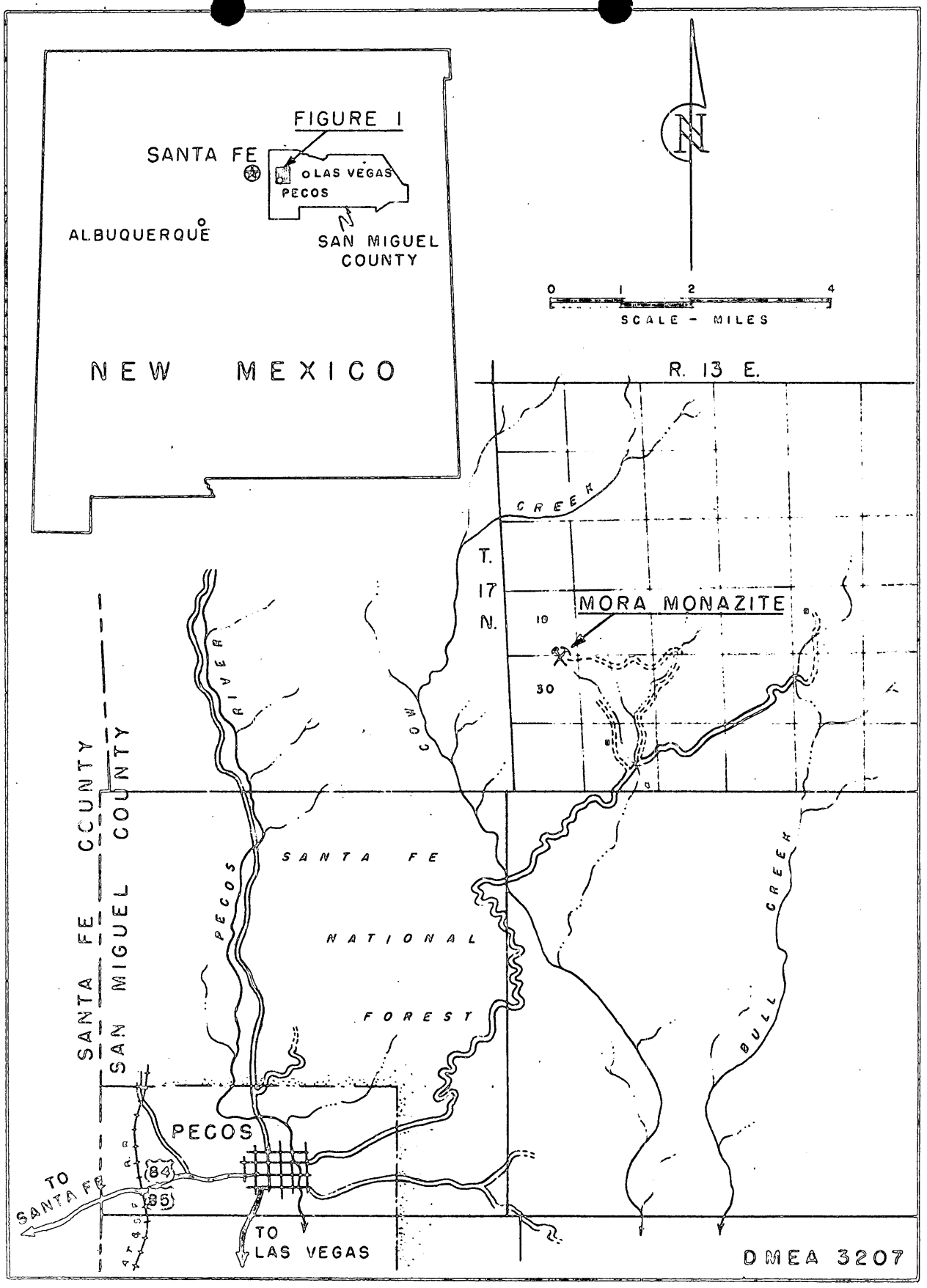

FIGURE 1. - LOCATION MAP - MORA MONAZITE CO.
HIGH PEAK CLAIM SAN MIGUEL COUNTY, NEW MEXICO

log cabin. The last 1.1 miles of the logging road contains a few short, rough and steeply inclined sections that barely are passable with a 4-wheel drive vehicle.

PHYSICAL FEATURES AND CLIMATE

The Mora Monazite Co.'s property is situated in the south-central portion of the Sangre de Cristo Mountains at an average altitude of about 9,400 feet. It is at the crest of a north-south trending ridge, with moderately steep side slopes to Bog Canyon on the east and Tijeras Canyon to the west. In the immediate vicinity of the claim, the topography is moderately rugged with a maximum relief of about 500 feet. Drainage in the area is southward via Cow Creek, an intermittent stream.

Vegetation flourishes in the area. Aspen trees are common to the small meadows, while yellow pine is the dominant growth of the higher altitudes.

Precipitation, probably over 25 inches per year, occurs mainly as late summer showers and winter snows. The summer climate is generally mild and winter temperatures are not extreme although sub-zero temperatures are common. Snow, generally a foot or more in depth, stands for several weeks during the winter.

HISTORY AND PRODUCTION

Mining claims in the vicinity of the applicant's property first were located for gold during the early 1900's. A small amount of exploratory work was done, but little or no gold was produced. Claims first were located for pegmatite minerals in 1945. Little or no work was done on the claims until 1950 when probably about 100 pounds of hand-sorted monazite was produced from a few shallow pits. The property then laid idle until April 1953 when it was relocated by a group of 5 partners. The applicant acquired the property from the owners in September, and started pitting and trenching operations during October 1953.

Total production from the property is estimated at $1\frac{1}{2}$ tons of ore containing 10.6 percent thoria, 57.0 percent rare earth oxides, and 0.30 percent U_3O_8. It includes about one-fourth ton of float rock, the remainder being sorted material from trenching operations. The ore, after removal of monazite specimens for sale to mineral collectors, shortly will be shipped to Rare Earths, Inc., Patterson, N. J.

Samples of the ore shipped by the owner to Rare Earths, Inc., contained 58.75 percent rare earth oxides and 11.11 percent thoria. The corporation offered to purchase such ore at $362.50 per ton, f.o.b. shipping point. The offer said that the ore could be crushed to $\frac{1}{2}$-inch mesh and packed in open-head drums containing about 1,000 pounds.

Current prices on monazite crystals are: Crystal fragments with 1 or more faces are 50 cents a pound; perfect crystals are quoted at 75 cents to $3.00 per pound.

PROPERTY AND OWNERSHIP

The property, comprising 7 unpatented lode mining claims in the Santa Fe National Forest, is owned by the Mora Monazite Co., Pecos, N. Mex. (formerly of the Brush Ranch, Tererro, N. Mex.). It is situated in secs. 19 and 30, T. 17 N., R. 13 E., San Miguel County, N. Mex. The company, as applicant for Governmental aid, requested that exploratory work be confined to one of the 7 claims, High Peak claim No. 1.

GEOLOGY AND DEPOSIT

The dominant geologic feature on the property is a bold, elongated body of massive quartz that crops out along the crest of a north-south trending ridge. Pre-Cambrian granite, coarse-grained and pinkish in color, crops out at a few widely scattered places along the slopes of the ridge. Shallow pits and trenches, and a few rock outcrops indicate that the massive quartz occurs at or near the eastern border of a pegmatite dike about 100 feet wide and probably as much as 2,000 feet long. The dike strikes about N. 20° E. and appears to dip almost vertically.

Two trenches have been excavated in narrow zones of massive quartz that may be genetically related to the bold outcrop of quartz. The massive quartz probably forms the innermost zone or core of the dike. Both walls of the small quartz bodies consist of potash feldspar with intergrowths of quartz and mica. A mica-rich zone up to 6 inches wide locally is present at the contact of the 2 rocks. The mica, mainly pale green in color and iron-stained, occurs as books ranging up to $\frac{1}{2}$ inch thick by 2 inches square. The books are ruled and bent. No clear sheet mica was observed. The quartz bodies are cut by weak fractures that roughly parallel the strike of the dike. They also are cut by a few crosscutting weak fractures.

Monazite occurs mainly as flattened crystals between the massive quartz and the feldspar-quartz-mica rock. It forms discontinuous veinlets generally less than $\frac{1}{2}$ inch thick, and lenses ranging up to 8 inches wide and 3 feet long. The veinlets and lenses are localized along a weak fracture at the contact. Pods of monazite crystals up to 6 inches in diameter appear to be concentrated at the intersections of fractures. The color of the monozite ranges from yellowish to tan to brown. Feldspar in contact with the monazite is of similar color.

Other minerals in the deposit consist of spessarite and samarskite. The spessarite occurs in the feldspar-quartz-mica rock as scattered pods up to 3 inches in diameter. It appears to be concentrated only in small zones overlying concentrations of monazite. A few specimens of a samarskite were reportedly found in a shallow pit in surface debris near the northeast portion of the area examined. The Atomic Energy Commission reported "specks of samarskite associated with the more feldspar-rich portion (?) of the pegmatite".

ORE RESERVES

Radio-activity was measured with a Beta Gamma Survey Meter, A.E.C. Model SGM-18A, Serial No. 125, manufactured by the El Tronics Inc., Philadelphia, Penn. During the examination, meter readings for background and various types of rocks at and near the deposit resulted in the selection of the 2.0 scale for all reported readings in mr per hour. The average background was found to be 0.5 mr/hr. Zones containing significant amounts of monazite showed mr/hr. ranging from 8 to 20. Monazite crystals registered 16 to 20 mr/hr., the same as sorted ore.

The analyses of 4 samples, 3 taken during the DMEA examination and the other reported by the Atomic Energy Commission, are as follows:

Sample No.	Description	Percent ThO_2	Percent $R.E._2O_3$	Percent U_3O_8	(Chemical) V_2O_5
11404	Hand-sorted ore	10.6	57.0	-	-
11402	Pod, 6 in. dia., trench 1	5.2	31.0	-	-
11403	Lens, 2 in. by 24 in., trench 2	5.3	31.4	0.30	-
	A.E.C. monazite concentration	-	-	0.07	3.28

The assay of hand-sorted material probably closely represents the grade of ore produced from the 2 trenches. The other assays probably are indicative of the mineralized zones.

Potential reserves can best be estimated from the production of 1.25 tons of hand-sorted ore from 2 trenches having a total length of 50 feet and averaging 6 feet wide by 3.5 feet deep. On this basis, the indicated reserves below the trenches amount to about 0.36 tons per foot of depth of material containing 10.6 percent thoria and 57 percent rare earths.

Meter readings, taken at places other than at monazite exposures, showed impulses essentially the same as the background count. Some of the readings, taken along possible extensions of the mineralized zone, were in areas covered by a few inches to probably as much as 2 feet of loose rock and soil. In these same areas, the operator reported that scintillometer readings indicated that abnormal radioactivity extended for a strike length of about 200 feet beyond the trenches. It is possible that these results indicate that the ore mineralization is confined to a strike length of 250 feet. However, the abnormal radioactivity does not necessarily represent ore in place because it may be due to the presence of float rock or monazite "fly-rock" from blasting operations.

It probably is reasonable to assume that the untested favorable area contains monazite concentrations similar to those exposed by the trenches. On this basis, inferred reserves of monazite are estimated at 1.8 tons per foot of depth.

ECONOMIC OUTLOOK

The economic aspects are estimated on the basis of possible production of monazite because the deposit apparently contains no significant concentrations of uranium ore, high-grade mica, feldspar, or other marketable products. Mining of the small, widely scattered mineralized zones, averaging 5.5 feet wide, would involve underground methods after possible open-pitting to depths of 10 to 20 feet. Approximately 75 tons of rock would have to be removed to recover 1 ton of selectively mined ore having a probable value of about $360.00. Mining Costs alone probably would not be less than $7.50 a ton of rock, or $562.50 per ton of recoverable monazite ore. Development costs probably would be not less than $60.00 per ton of recoverable ore.

CONCLUSIONS

The Mora deposit contains small amounts of monazite sporadically distributed in a pegmatite dike that apparently contains little or no uranium ore, high-grade mica or feldspar, or other marketable products. There is little or no chance for economic exploitation of the deposit because mining costs alone exceed the present market value of monazite.

The Atomic Energy Commission's opinion of the deposit's potential is contained in a letter of May 20, 1954 to John N. Faick, Geological Survey, from Ralph M. Perhac, Geologist, Atomic Energy Commission, Albuquerque, N. Mex. Mr. Perhac summarized his findings as follows:

"Because the monazite occurs as scattered, small segregations within the pegmatite, tonnage is apparently too low to warrant exploitation. Also the uranium content of the monazite is much too low to make ore. We are, therefore, planning no additional work at the property unless the owners turn up larger concentrations of monazite mineralization".

RECOMMENDATIONS

Denial of Mora Monazite Co.'s request for Governmental assistance is recommended because the potential reserves of the deposit are confined to an insignificant amount of monazite that cannot be exploited at a profit.

Surname
Docket File

700

Ellis
Selfridge
Hedges
Guild

MAR 8 1954

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

Re: Docket No. DMEA-3207
(Thorium-Monazite)
Mara Monazite Company
Federal and High Peak claims
San Miguel County, New Mexico

Dear Mr. King:

This refers to your memorandum of February 25, 1954, together with enclosure, appertaining to the captioned proposed project.

It is noted that the thorium content is quite good and since thorium was on the eligible list at the time the application was in the mail, i.e., prior to midnight November 3, 1953, you may continue to process the application as originally planned.

You will note from the above that we are listing this as a thorium-monazite application, and suggest you change your records accordingly.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (GCS)

APPROVED:

J. H. Hedges
Member, Bureau of Mines (JHH)

Philip W. Guild
Member, Geological Survey (PWG)

EWEllis/gla, 3-4-54
cc to: Adm. Reading File
Operating Committee
Docket
Messrs. E.J.Carlson, Rm. 3649
D.M.Larrabee, Rm. G-232, GSA
Code 700

R.C.L. 3-8-54

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 1 - 1954

224 New Customhouse
Denver 2, Colorado

February 25, 1954.

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA-3207 (Monazite), Mora Monazite Company, Federal and High Peak claims, San Miguel County, New Mexico.

This replies to your letter of February 11, 1954 on the subject docket.

Enclosed is copy of a letter submitted with the application relative to the chemical analysis of the applicant's ore. This chemical analysis indicates that the monazite contains an appreciable amount of thorium, and we had planned to examine this property since the application was postmarked 1:00 p.m., November 3, 1953, which was before thorium was deleted from the list.

Will you please advise if this application should be returned to the applicant since monazite was not included in Amendment No. 2 to DMEA Order-1 but thorium was included.

W. H. King

W. H. King

Enclosure

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

DEPARTMENT OF THE INTERIOR
Lands Director Administration
RECEIVED
MAR 1 - 1954

224 New Customhouse
Denver 2, Colorado

February 25, 1954.

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA-3207 (Monazite), Mora Monazite Company, Federal and High Peak claims, San Miguel County, New Mexico.

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Enclosed is copy of a letter submitted with the application relative to the chemical analysis of the applicant's ore. This chemical analysis indicates that the monazite contains an appreciable amount of thorium, and we had planned to examine this property since the application was postmarked 1:00 p.m., November 3, 1953, which was before thorium was deleted from the list.

Will you please advise if this application should be returned to the applicant since monazite was not included in Amendment No. 2 to DMEA Order-1 but thorium was included.

W H King
W. H. King

Enclosure

RARE EARTHS, INC.

Black Oak Ridge Rd., Wayne Township, N. J.

Post Office Address
Box 488, R.D. No. 4., Paterson, N. J.

Telephone
Terhune 5-3060

July 9th, 1953

Mr. John P. Mahoney
Brush Ranch
Tererro, New Mexico

Dear Mr. Mahoney:

We have completed our chemical analysis of the ore which you sent us and the results are as follows:

Rare Earth Oxides		58.75%
Thoria		11.11%
	Total	69.86

From all appearances this is very good ore. Although the rare earth oxide content is slightly lower than alluvial monazite, the ease of obtaining rich concentrates, such as you sent us, will offset the lower rare earth content. Typical domestic monazite contains 63-65% rare earth oxides.

Our standard specification for monazite is based upon a 60% rare earth oxide content - for which we currently pay $375.00 per short ton. Ore should be ground to -8 mesh and bagged for handling. On this basis, we could offer for your monazite $375.00 per short ton f.o.b. cars, plus $7.00 per ton-percent for rare earth oxides above 60% and minus $10.00 per ton-percent for rare earth oxides below 60%. This works out, on the basis of the sample sent us, to $362.50 per ton. Sampling and analysis are made here at Pompton.

If you can advise us when you expect to complete your investigations and could estimate the extent of your deposit, we would like to consider entering into a long-term contract for your output. Our immediate interest is in 600 tons per year. We would also consider placing a trial order for 1 car with you on a spot basis for shipment within 90 days and on the price basis outlined above. May we have your reaction to this?

Please let us hear from you as soon as you have studied the above information, Mr. Mahoney.

Very truly yours,
RARE EARTHS, INC.
/s/ Richard M. Mandle
RICHARD M. MANDLE
Ass't Sec'y

COPY

SURNAME
DOCKET

FEB 11 1954

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

Re: Docket No. DMEA-3207 (Manganese)
Nova Mountain Company
Federal and High Peak claims
San Miguel County, New Mexico

Dear Mr. King:

Reference is made to your communication, dated January 27, 1954, in which you raise the question of how to process the captioned application.

As you know manganese was removed from the list of minerals eligible to receive Government exploration aid by DMEA Order No. 1, Amendment 2, dated May 15, 1953. Therefore, in order to further process this application it must be considered for minerals or metals that were on the eligible list when the application was in the United States mail providing the reported content of such metals or minerals justify consideration.

When an application is received and transmitted to this office each copy should contain the same data, i. e., maps, analytical data, etc. If sufficient copies of such data were not supplied by the applicant additional copies should be made or the applicant should be requested to furnish the quantity required to complete the application. In this connection please forward the required number of copies of the chemical analyses referred to under paragraph 4 (a) of the narrative attached to the application. Please also advise what action is taken in connection with this case so our records may be corrected accordingly.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

APPROVED:

J. H. Hedges

Member, Bureau of Mines

D. M. Larrabee

Member, Geological Survey

FLKnouse/foc 2-10-54
cc to: Adm. Reading File
Operating Comm.
Docket
Messrs. EJCarlson, Rm. 3649
DMLarrabee, 0232 - GSA
Ellis
Knouse
DMEA Field Team, Region IV

F.C.S. 2-11-54

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB - 1 1954

224 New Customhouse
Denver 2, Colorado

January 27, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3207 (Monazite), Mora Monazite Company, San Miguel County, New Mexico

In answer to your letter dated January 20, 1954, concerning the subject docket we wish to state that the following teletype was sent to C. O. Mittendorf from this office on November 4, 1953:

"Bur. Mines Dn. 235 11-4-53 2-14 PM
C.O. Mittendorf
Reurtt November 2, 1953 regarding Amendment No. 3 to DMEA Order No. 1 we received an application from Mora Monazite Company at an estimated cost of $19,907.40, commodity Monazite and Related Minerals. We believe minor amounts of Columbium and Tantalum present along with Thorium. Application is dated October 31, 1953, letter postmarked November 3, 1953, 1-00 PM.

We also received an application from Howard R. Staker at an estimated cost of $6,950, commodity Uranium, letter postmarked November 2, 1953, 1-00 PM. We believe that both of these applications should be processed under the provisions of DMEA Order-1 prior to Amendment No. 3 because they were mailed on or before November 3. Please teletype your ruling in this matter.

W. H. King"

As no answer was received to the above teletype we assumed that there would be no objection from the Washington office and continued the processing of the subject application.

DMEA Docket No. 3207 was assigned to this application on November 9, 1953 by memorandum signed by Robert E. Adams, Chief, Operations Control and Statistics Division, DMEA.

In view of the fact that Thorium was included in the commodity list at the time this application was received we consider that its acceptance is justified.

This telegram was called to our attention on 2/8/54. Original telegram filed in Howard R. Staker's file in Mails & Files.

Rare & Misc. Metals Div.

The envelope, postmarked November 3, 1953, has been retained in our files as proof of the date the application was submitted.

If the Washington office does not concur please inform us how this docket should be handled.

W H King

W. H. King

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 1 1954

224 New Customhouse
Denver 2, Colorado

January 27, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3207 (Monazite), Mora Monazite Company, San Miguel County, New Mexico

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If the Washington office does not concur please inform us how this docket should be handled.

W H King
W. H. King

RDB:jp
cc Subject
Chron
WRStorms
AFShride
AHKoschmann

FILE COPY
Surname:

200

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

JAN 20 1954

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

Re: Docket No. INEA-3207 (Monazite)
Nora Monazite Company
San Miguel County, New Mexico

Dear Mr. King:

It has been brought to our attention that your memorandum dated November 6, 1953, transmitting three applications included one for monazite.

Under Paragraph "C" of the application it is noted that a copy of the chemical analysis of ore was submitted. If this analysis shows the presence of uranium, the application could be accepted under this commodity. However, if uranium or any other mineral on the current commodity list is not present, the application will have to be withdrawn and the applicant notified accordingly, as monazite is not on the current list of minerals and metals eligible for exploration assistance.

Kindly advise this office what action is taken on this application.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (2/B)

APPROVED:

J. H. Hedges (2/B)
Member, Bureau of Mines

T. P. Thayer (2/B)
Member, Geological Survey

REAdams/meb
1-19-54
cc to: Adm.Reading File
Mails & Files Br.
Oper. Comm. File

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

November 9, 1953

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number DMEA-3207

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

DMEA-3207 Mora Monazite Co. et al.

ROBERT E. ADAMS

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

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

224 New Customhouse
Denver 2, Colorado

November 6, 1953.

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: Code 200

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docketing for Exploration Assistance

Enclosed herewith in duplicate is D[redacted]3a and MF-103 and supporting data pertaining to the following applications for Government assistance in exploration work:

Joseph B. Whisnant and Katherine L. Whisnant 959 South Josephine Street Denver 9, Colorado	Uranium
Howard R. Staker Box 401 Huntington, Utah	Uranium
Mora Monazite Company Brush Ranch Tererro, New Mexico	Monazite

W. H. King

Enclosures

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 10 1953

224 New Customhouse
Denver 2, Colorado

November 6, 1953.

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: Code 200

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docketing for Exploration Assistance

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Howard R. Staker Box 401 Huntington, Utah	Uranium
Mora Monazite Company Brush Ranch Tererro, New Mexico	Monazite

W. H. King

W. H. King

Enclosures

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 9 1953

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

Not to be filled in by applicant

Docket No. DMEA-3207
Metal or Mineral
Date Received 11-9-53
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: MORA MONAZITE COMPANY (PARTNERSHIP)
BRUSH RANCH, TERRERO NEW MEXICO.
PARTNERS--JOHN P.HAMONEY, BRUSH RANCH TERRERO N.M.-CIRILIO RIVERA, PECOS, N.M.
KATHRYN C.AYDELOTTE, PECOS N.M.-PATRICIA M.OLD, 1008 Pecos Rd, Sante Fe, N.Mex.

(*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 Federal Mining Claim #1798, San Miguel County Willow Creek Mining District. Claim filed May 1 1953 &Recorded May 7, 1953 in Book 5 Page 21.
Quitclaim Deeds No's 1128-1129-1130, filed and recorded Oct 7, 1953, Book 177 Page 91.

(*b*) State any mine name by which the property is known. High Peak Claim #1

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise co-locators of Federal Mining Claim

(*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. description attached

(*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 Monazite and related minerals

(*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 90 days and be completed within Six 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? YES

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated October 31 st, 195 3

John P. Mahoney
(Applicant)

By Cirilio Rivera

Kathryn C. Aydelotte

Patricia M. Old

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

To be attached as part of application for Exploration Loan by Lora Monazite Company of Tesorro, New Mexico.

#4-Physical description-(a) Discovery work according to Federal Mining Laws, 10ft open face cut- Five exploratory trenches, average openings approximately 4ft wide X 10ft long X 4ft deep. existing mine workings and production facilities very limited, consists mostly of hand drilling, owing to present access difficulties it is impossible to transport the necessary heavy equipment.

Accessibility conditions for the purpose of examination purposes Can be reached by Automobile to a point within two miles of Claim, about a one mile hike or horseback trip over Forest trail and approximately one mile of old logging road.

(b) Work to date having been only on a prospecting and exploratroy basis, we have no past or present production records, however, during the time we have been working the claim we have stockpiled approximately one thousand (1,000) lbs of ore which has been assayed as high grade Monazite

(c) Pegmatite Dyke, extending about 4500 ft in length and 600 ft in width, this entire area shows high radio activity. This is a banded dyke showing outcroppings of Massive quartz-graphic granite-thick bands of book Mica-Potash Feldspar and Monazite running in veins and veinlets. The ore deposits found so far have been in five different spots within a radius of 1400 ft X 200ft this being the area we wish to furthur explore. The exploratory work done to date gives every indication of the presence of Monazite ore in large quanities.

As to Geologic or Engineering reports, we have not been able to afford the services of a Geologist or Engineer. Samples of the ore were sentto the Rare Earths Inc of Pompton Plains, New Jersey, a copy of their chemical analysis is included with application.

(d) U.S. Forestry maintained road to within approximately two miles of mining property, at this point it will be necessary to build about one mile of road through a forest trail area and connect with an old logging road which can be re-conditioned at very little cost. shipping distance to nearest residence and supply point (Pecos New Mexico) is 15 miles with a favorable downgrade, this would be Motor freight, the most desirable, to the nearest rail freight is a distance of twenty (25) miles.

(e) Manpower is plentiful throughout the Pecos area however becauseof distance and weather conditions temporary shelter will have to be provided We have as a source of supplies, materials and equipment, Pecos, N.M. 15mi Sante Fe, N.M. 40mi and Las Vegas, N.M. 57mi.

Water supply at present consists of a natural spring adjoining property, it appears that with some developement work ample water can be obtained. No electric power available.

5 (B) 10, 4ft trenches app 200 ft long (drawing attached)

(d) The applicant has been prospecting in this area for the past 3 yrs for the past four years have devoted considerable time to the study of Geology and mining procedure. By using the part time services of a qualified Engineer and the full timeservices of my Partner and assistant who is an experienced Miner with about eight years experience, I expect to supervise the operations of the exploration prodject.

#6 Estimate of costs- Estimates attached.

#7 (A) Yes.

(b) It is the plan of the Partners to raise the necessary money byjoint contributions, if necessary, at the time the contract is signed or by any other arrangement agreed to. We have on order and expect to be using shortly a Syntron gasoline rock drill which we rent at a nominal cost, the rental to be applied to our contribution

To be attacjed [illegible] part of application for [illegible]xploration Loan by the Mora Monazite Co[illegible]ny of Tererro, New ,exico.[illegible]

6- Estimated costs for exploratory work..... $20,000.00

(a) None-

(b)	Engineer Consultent..1 week @ $200.00 per week.....		200.00
	Geological " ..3 days @ 100.00 per day		300.00
	Spervisor.....6 mos (25 wks) @ 16.00 per day.....		2600.00
	Miners (2).....6 mos (25 wks) @ 14.00 " ".....		3500.00
	Mulchers (2)....6 mos (25 wks) @ 12.00 " ".....		3000.00
	Bulldozer & Operator...240 Hrs @ 12.00 " hour.....		2880.00
	Sub total..		11,880.00
(c)	1 wheelbarrow.....		35.00
	1 block & tackle.....		15.00
	3 heavy duty picks.....@..$..3.50ea.....		10.50
	3 pick handles.....@ .85 ".....		2.50
	2 axes.....@ 4.00 "		8.00
	3 shovels.....@ 4.00 "		12.00
	1 sledgehammer.....@ 5.00 "		5.00
	2 files .....@ .50 "		1.00
	1 cap crimper .....@ 5.00 "		5.00
	1 gasoline lamp .....@ 12.00 "		12.00
	1 pinch bar .....@ 5.00 "		5.00
	2-5gal fuel cans .....@ 5.00 "		10.00
	2 dust respirators .....@ 4.50 "		9.00
	5 safety helmets.....@ 5.00 "		25.00
	1 first aid kit .....@ 7.50 "		7.50
	1 carpenters hammer .....@ 3.5 3.50 "		3.50
	miscellaneous supplies		50.00
	fuel for compressor		240.00
	dynamite- 30cases .....@ 13.00 case		390.00
	fuse- 2000 ft .....@ .10 ft		120.00
	detonator caps 2000 .....@ 22.90 per 1000		45.80
	Sub total..		1011.80
(d)	Compressor rental,,6mOs..@ 200.00 per mo.....		1200.00
	purchase jack hanner		300.00
	100 ft hose.....@ .70 " ft.....		70.00
	200 ft 2in pipe.....@ .40 " "		80.00
	drill steels		400.00
	drill bits.....		200.00
	pipe fittings etc.....		200.00
	purchase used truck		1800.00
	rental Syntron gasoline Rock Hammer.....6 mos @ $60.00 mo..		360.00
	drayage on compressor		100.00
	Sub total...		4,110.00
(f)	Building for storage and shelter ....Carpenters estimate.....		400.00
	water developement.....		150.00
	Sub total ..		550.00
(g)	Maintenance of equipment		100.00
	Accounting services .....6mos. @ 50.00 per Mo.....		300.00
	Analytical "		200.00
	Workmans Comp. & Employers Ins.....app. 7% of taxable payroll		796.60
	State & Federal payroll tax..... " 5% " " "		559.00
(h)			
	Advisory & Consultation services as needed		300.00
	Drayage on Compressor in event of breakdown		100.00
	Estimated Total..$		19,907.40

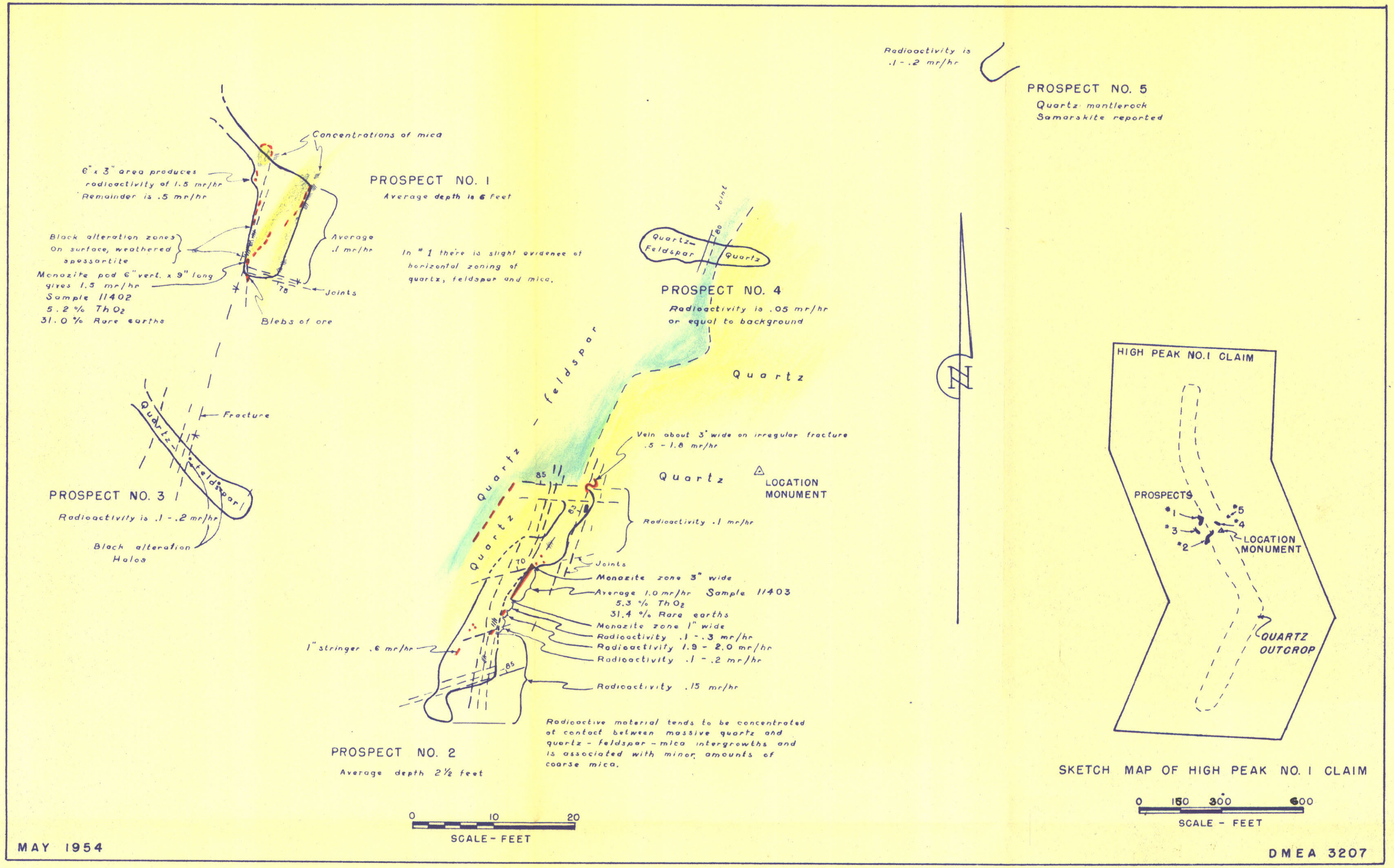

FIGURE 2. — GEOLOGIC SKETCH MAP OF PART OF HIGH PEAK CLAIM
SAN MIGUEL COUNTY, NEW MEXICO