IN REPLY REFER TO:
G-MD-DHK

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

January 22, 1952

Memorandum

REVIEW OF FIELD TEAM REPORTS ON APPLICATION DMEA-2105 and 2106.

To: Non-Metallic Minerals Division, DMEA.
From: D. H. Kupfer, U. S. Geological Survey.
Commodity: Beryl.
Applicant: Beryllium Development, Inc.
Name of property: Plumbago Mtn. Beryl Prospect and a nearby property.
Location of property: On the lands of the International Paper Company in Oxford County, Maine.
Field team's recommendation: Applications be approved with minor modifications.

Comments: None.

ACTION SUGGESTED: Follow field team's recommendations.

D. H. Kupfer

DHKupfer:jeh
G-1/22/52
copy to: Director's reading 4212
Branch reading 4212
DMEA ✓
Kupfer G-228

MF-200
(June 1951)

2 dockets combined into one

Docket No. DMA 2105 / 2106

Commodity Beryl

Working draft

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

The dockets 2105 & 2106 were one working contract

EXPLORATION PROJECT CONTRACT[1]

Working draft for information purposes only - Robertson

It is agreed this ..... day of ....., 195 2, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Beryllium Development, Inc., a wholly owned subsidiary of The Beryllium Corporation, Reading, Pennsylvania.

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Maine, County of Oxford described as follows: [3] A rectangular tract of land approximately 7100 by 4000 feet, lying partially in Newry Twp. and partial in Rumford Twp. as shown in Figure 1 attached hereto, ~~over~~ embracing Plumbago Mountain and the Nevel Mine but excluding a tract of approximately 870 feet by 870 feet surrounding the Whitehall Feldspar Mine as shown in Figure 2 attached hereto.

with respect to which the Operator represents and undertakes: [4]

~~(a) That he is the sole owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached~~: .....

(b) That he is a lessee, in possession and entitled to possession, ~~and the subordination agreement of the lessor is attached.~~

3. *Exploration project.* The Operator, within ninety (90) days from the date of this contract shall commence work on a project of exploration for [5] Beryl; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] nine (9) months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment, or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of 90 percent of the approved costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $40,145, which is 90 percent of the agreed estimated total cost of this project, $44,606.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

15. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter, shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the mineral deposit which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

16. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

17. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in sextuplicate the day and year first above written.

Beryllium Development, Inc.

By ..... (Operator) President

By ..... Secretary

THE UNITED STATES OF AMERICA

By .....

Acting Administrator
Defense Minerals Exploration Administration

U. S. GOVERNMENT PRINTING OFFICE 16—64066-2

Docket DMEA-2105

Draft Robertson

(1)

ESTIMATED COST OF PROJECT

Independent Contracts none

	Estimated Costs		
	Prospect. No.1	Prospect No. 2	Both Prospects
	$	$	$
(5) Rehabilitation and Repairs	None	None	None
(6) New Buildings, ~~Fixtures and~~ Improvements, Installations			
Combination Shed & Shelter	250 .00	250.00	
Powder House	100.00	100.00	
	$ 350.00	$ 350.00	$700.00
(4) Operating Equipment To be purchased:			
Jeep - 4 wheel drive	$1,800.00	-	
Dodge Power Wagon	3,000.00	-	
2 - 105 Air Compressor	3,500.00	3,500.00	
2 - 55 lb. Jackhammers	400.00	400.00	
2 - Galvanometers	15.00	15.00	
2 - Blasting Machines	35.00	35.00	
2 - Wheelbarrows	25.00	25.00	
400 Ft. Hose	10.00	30.00	
Drill Steel & Bits	474.00	474.00	
Air Hose	50.00	50.00	
Miscellaneous small tools	145.00	127.00	
	$9,454.00	$4,656.00	$14,110.00
~~Operating Equipment~~ To be rented:			
Bulldozer 20 days @ $80.00	800.00	800.00	
Bulldozer 10 days @ 64.00	640.00	-	
Bulldozer, trail and road	-	190.00	
6' x 6' truck 10 days @ $30.00	300.00	-	
	$1,740.00	$990.00	$ 2,730.00
(2) Labor & Supervision			
Foreman 2160 hrs @ $2.25	2,430.00	2,430.00	
Labor, ins. etc. (3 men)	10,122.00	9,834.00	
	$12,552.00	$12,264.00	$24,816.00
(3) Material & Supplies [Space]	1,160.00	1,090.00	2,250.00
TOTAL ESTIMATED COST OF PROJECT			$44,606.00

~~Government's Share 90% - $40,145 - maximum~~
~~Operator's Share 10% - 4,461~~

(7) Miscellaneous none except as may be included in other items

EXPLORATION PROJECT CONTRACT

Beryllium Development, Inc.

Docket No. DMEA-2105

Draft Robertson

EXHIBIT "A"

Description of the Work

The project has for its purpose the exploration for beryl in commercial amounts in two separate pegmatite dikes. One pegmatite is known as Prospect No. 1 and the other as Prospect No. 2. A high steep ridge intervenes between the two prospects necessitating two separate operations. Both prospects are however within the boundaries of the tract described in paragraph two (2) of contract.

Statement of Work - Prospect No. 1

The work to be performed on Prospect No. 1 will be on a pegmatite area approximately 300 by 400 feet marked as Beryl Prospect No. 1 on Figure 2 attached hereto and shown in greater detail in Figure 3 attached ~~in greater detail in Figure 3 attached~~ hereto. The work will consist of removing the shallow over burden from a part of the dike, approximately 100 by 300 feet, and the digging of four trenches roughly 70 feet long, 3 feet wide, and 6 feet deep. The rock thus exposed will be tested and sampled as to quality and quantity of beryl content.

Statement of Work - Prospect No. 2

The work on Prospect No. 2 will be performed on a piece of ground approximately 580 by 300 feet, marked as Beryl Prospect No. 2, on Figure 2, attached hereto and as shown in more detail in Figure 3, attached hereto. The shallow overburden will be stripped from selected portions of this area and 7 to 10 trenches, approximately 6 feet deep and 3 feet wide will be cut at selected spots which the operator considers to be most promising for uncovering beryl. The rock thus exposed will then be tested for quality and quantity of beryl content. The total work should be completed within 9 months.

THE BERYLLIUM CORPORATION
XXXXXXXXX
XXXXXXXXXXX

BERYLLIUM DEVELOPMENT, INCORPORATED

Grafton, New Hampshire
January 17, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 18 1952

Defense Minerals Exploratory Administration
Department of the Interior
Industrial Minerals Branch
Washington 25, D. C.

Attention: Mr. Lawrence Nauk

Reference: DOCKET NUMBER - DMA 2105

Gentlemen:

In lieu of the Landlord's Subordination Agreement, Form #Y-202, called for in the Application for an Exploratory Loan for beryl ore, Beryllium Development, Incorporated wishes to guarantee that they will assume and does hereby assume all the obligations of the Sublessee under the Exploration Project Contract to make repayment to the United States of America according to the terms of the said contract.

Beryllium Development, Incorporated is a holder of a sublease from Whitehall Company, Incorporated, Keene, New Hampshire, copy of which is attached to Docket DMA 2105. Whitehall Company, Incorporated is in turn the Lessee of the property involved from International Paper Company, 220 East 42nd Street, New York City, New York.

Yours very truly,

BERYLLIUM DEVELOPMENT, INCORPORATED

R. M. Quimby
Secretary

QMB:mbs

THE BERYLLIUM CORPORATION
~~XXXXXXXXXXXX~~
~~XXXXXXXXXXXX~~A.

BERYLLIUM DEVELOPMENT, INCORPORATED

Grafton, New Hampshire
January 17, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 18 1952

Defense Minerals Exploratory Administration
Department of the Interior
Industrial Minerals Branch
Washington 25, D. C.

Attention: Mr. Lawrence Houk

Reference: DOCKET NUMBER - DMA 2105

Gentlemen:

In lieu of the Landlord's Subordination Agreement, Form #F-202, called for in the Application for an Exploratory Loan for beryl ore, Beryllium Development, Incorporated wishes to guarantee that they will assume and does hereby assume all the obligations of the Sublessee under the Exploration Project Contract to make repayment to the United States of America according to the terms of the said contract.

Beryllium Development, Incorporated is a holder of a sublease from Whitehall Company, Incorporated, Keene, New Hampshire, copy of which is attached to Docket DMA 2105. Whitehall Company, Incorporated is in turn the Lessee of the property involved from International Paper Company, 220 East 42nd Street, New York City, New York.

Yours very truly,

BERYLLIUM DEVELOPMENT, INCORPORATED

R. M. Quimby
Secretary

GMB:mbs

THE BERYLLIUM CORPORATION
~~EXCELSIOR MINE~~
~~BEAVER RANCH~~

BERYLLIUM DEVELOPMENT, INCORPORATED

Grafton, New Hampshire
January 17, 1952

Defense Minerals Exploratory Administration
Department of the Interior
Industrial Minerals Branch
Washington 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 1 8 1952

Attention: Mr. Lawrence Houk

Reference: DOCKET NUMBER - ~~DMA 2106~~ 2105

Gentlemen:

In lieu of the Landlord's Subordination Agreement, Form #F-202, called for in the Application for an Exploratory Loan for beryl ore, Beryllium Development, Incorporated wishes to guarantee that they will assume and does hereby assume all the obligations of the Sublessee under the Exploration Project Contract to make repayment to the United States of America according to the terms of the said contract.

Beryllium Development, Incorporated is a holder of a sublease from Whiteball Company, Incorporated, Keene, New Hampshire, copy of which is attached to Docket DMA 2106. Whiteball Company, Incorporated is in turn the Lessee of the property involved from International Paper Company, 220 East 42nd Street, New York City, New York.

Yours very truly,

BERYLLIUM DEVELOPMENT, INCORPORATED

R. M. Quinby
Secretary

GMB:mbs

8/23/51

A G R E E M E N T made this 24th day of August, 1951, between WHITEHALL COMPANY, INC., a corporation duly organized and existing under the Laws of the State of New Jersey, hereinafter sometimes designated as Lessor, and BERYLLIUM DEVELOPMENT, INC., a corporation duly organized and existing under the Laws of the State of Delaware, hereinafter sometimes designated as Lessee.

Lessor hereby grants, demises and leases to Lessee, SUBJECT to the rights of International Paper Company, and to the rights of Lessor retained under this lease, sole and exclusive right of mining, digging, boring and prospecting for and removing Feldspar, Beryllium, and all other minerals upon and from the following described tracts of land situated in the County of Oxford, State of Maine, estimated to contain Three Thousand (3,000) acres, more or less, and more particularly bounded and described as follows:

> All lands owned by International Paper Company in the Town of Newry, lying east of Bear River and all lands owned by International Paper Company in the Town of Andover lying in the watershed of Howe Brook, both in the County of Oxford, State of Maine, being the property now leased by International Paper Company (a New York Corporation) to Whitehall Company, Inc.

TO HAVE AND TO HOLD the said premises for said purposes only unto said Lessee for and during the term from the date hereof, to and including the 31st day of July, 1953.

1. Lessee agrees that on and after the date hereof, the minimum royalty due and payable Lessor shall be at the rate of One Thousand ($1,000.00) Dollars per year. Any deficiency in royalty shall be paid within thirty (30) days after the close of the year.

Lessee covenants and agrees to pay Lessor on the twentieth day of each month, a royalty of $0.50 per ton of 2,240 pounds of Feldspar, No. 1 Grade and $0.25 per ton of 2,240 pounds of Feldspar, No. 2 Grade and 10 percent of the current market price, f.o.b. mine for Beryllium and all other minerals, mined and removed from said premises pursuant to the provisions of this lease during the month immediately preceding said dates of payment.

2. The Lessee covenants and agrees to transmit to the Lessor an exact and truthful statement of the amount of Feldspar, Beryllium and of all other minerals removed during the month for which payment is being made. The Feldspar, Beryllium and all other minerals may be weighed by the Railroad Company or any other mutually satisfactory scales and such weights shall determine the quantities as between the Lessor and the Lessee. The Lessor may inspect, review and test the correctness of the weights at any time in such manner as Lessor may see fit to adopt. Any errors discovered shall be corrected in the accounts of the Lessee.

3. The Lessor hereby grants to the Lessee the right to mine, prospect, search, dig, bore and excavate for said Feldspar, Beryllium and all other minerals in as many places upon the premises as the said Lessee may deem proper, and to extract and remove the same from said premises, provided, however, that BERYLLIUM DEVELOPMENT, INC. shall not in any way disturb the "Newry Mine" of Lessor nor prospect or mine within an area of Four Hundred (400) feet distant from the edge of the mine workings.

Lessor reserves the right to operate the "Newry Mine" and to prospect for and mine Feldspar on all

other parts of the property which will not conflict with Lessee's operations then in effect.

4. The Lessor further grants to the Lessee the right to occupy and use as much of said tract or tracts for buildings and improvements as may be necessary for the most efficient and economical mining operations, excepting the "Mowry Mine" and any other installations erected by Lessor for prospecting and mining Feldspar.

5. Lessor grants to Lessee except as herein otherwise provided, all such rights of way in the premises to the extent Lessor has control thereof as may be necessary for Lessee to obtain and remove Feldspar, Beryllium and other minerals as herein otherwise provided.

6. The Lessor hereby grants to the Lessee the right to construct ditches, drains, aerial tramways, tramways, railroads, truck roads, etc., to and across said premises and said adjoining lots, except as herein otherwise provided.

7. The Lessor hereby grants to the Lessee the right to cut and use such timber located upon the said premises as may be necessary for the construction of buildings and/or for other usual purposes of such mining operations, upon paying for the merchantable timber the reasonable market stumpage value thereof at and upon the aforesaid property.

8. The Lessor hereby grants to the Lessee the right to use any stone or gravel located on the aforesaid premises for the purpose of constructing roads necessary and suitable for the full enjoyment of the mining rights hereby

leased by the Lessee, except as herein otherwise provided.

9. The Lessor grants to the Lessee the right to use and/or secure water on said premises in order that the Lessee may conduct its mining operations in an economical and proper manner, except as herein otherwise provided.

10. The Lessor grants to the Lessee the right to dump waste material and water arising through the mining operations, upon said premises, except as herein otherwise provided.

11. The Lessor hereby grants to the Lessee the right to remove all improvements place upon the aforesaid premises by the Lessee at any time within ninety days after the termination of this lease plus such additional period as weather conditions prevent their removal for any cause except by reason of the acts of the Lessor, in which event the Lessee shall have the right to remove the said improvements at any time within ninety days after the expiration of the period provided for herein.

12. The Lessor reserves unto the Lessor the right to use so much of the premises as shall not be required by the Lessee for the mining operations of the Lessee, and to use roads constructed by the Lessee for the removal of timber.

13. The Lessee agrees to pay all taxes which may be levied solely upon the mining operations conducted upon the said premises by the Lessee or upon any improvements constructed or made by Lessee and to pay all tangible or intangible personal property taxes assessed against Lessee or its property.

14. The Lessee reserves the right to terminate this lease at any time upon giving to the Lessor thirty days written notice of its intention so to do and upon payment of all sums due to the date of such notice. The said notice shall be given by the Lessee in writing and shall be sent by registered mail in a duly postpaid envelope addressed to the Lessor at Keene, New Hampshire. Said notice shall be deemed complete upon deposit thereof by the Lessee in a United States post-office. Thereafter the Lessee shall be under no further liability hereunder.

15. The Lessee shall not be responsible for any damages to the aforesaid premises by reason of the operations conducted by the Lessee pursuant to the provisions hereof.

16. The Lessor shall have the right to terminate and cancel this lease in the event of a default on the part of the Lessee in complying with any of the terms and conditions of this lease, provided said default shall continue for a period of sixty days after the Lessor has forwarded written notice thereof to the Lessee. Said notice shall be sent by registered mail to the last known address of the Lessee.

17. The Lessee shall have the right to renew this lease for an additional period of Five Years upon the terms and conditions hereinbefore set forth, provided that ninety days prior to the expiration of this lease the Lessee shall forward to the Lessor written notice thereof in the manner hereinbefore provided for sending notices to Lessor.

Lessor's said lease with International Paper Company, expires July 31, 1953, with the privilege of renewal

for an additional five year period which renewal Lessor intends to exercise.

18. Lessor makes no representation as to its rights in the premises hereinbefore described and Lessee shall only have such rights under this lease as Lessor has in said premises.

19. Lessor shall have the right, except when conditions beyond the control of Lessee prevent, to terminate this lease in the event that the Lessee fails to conduct any operations upon the said premises for a period of one hundred and eighty (180) days.

20. Lessee shall conduct its mining operations in workmanlike manner.

21. If at any time the Lessor shall either orally or in writing inform the Lessee or any of its agents or employees who shall be engaged in such operations that the Lessor believes that there is more than ordinary danger of forest fires through such operations, such agents or employees will vacate the land hereby leased until such time as the Lessor shall notify the Lessee that the danger of fire no longer exists. The Lessee shall instruct any of its agents or employees who go on the land hereby leased of the above condition of this lease and of the great danger of fire which exists through any operations in the forest and shall see that all necessary precautions are taken to prevent fires. Notice to the Lessee under the terms of said lease that there is more than ordinary danger of forest fires will not be

served without reasonable cause.

22. Lessee agrees that it will not assign, mortgage or encumber this agreement nor underlet or use or permit the demised premises or any part thereof to be used by others, except to a successor or successors of Lessee unless the written consent of Lessor is obtained. Lessor will not unreasonably withhold such consent.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed the day and year first above written.

WHITEHALL COMPANY, INC.

By A. E. Davison
A. E. Davison, Vice President

Attest:

L. G. Clark
L. G. Clark, Secretary

BERYLLIUM DEVELOPMENT, INC.

By Otto T. Engelhart
President

Attest:

Secretary

STATE OF NEW YORK)
) SS.:
COUNTY OF NEW YORK)

This is to certify that on the 24th day of August, 1951, before me personally came Alvah E. Davison, Vice President, with whom I am personally acquainted, who being by me duly sworn, says, that he, Alvah E. Davison, is the Vice President and L. G. Clark is the Secretary of Whitehall Company, Inc., the corporation described in and who executed the foregoing instrument; that he knows the common seal of the corporation; that the seal affixed to the foregoing instrument is said common seal, and the name of the corporation was subscribed thereto by said Vice President and that said Vice President and Secretary subscribed their names thereto and the common seal was affixed, all by order of the Board of Directors of said corporation, and that the said instrument is the act and deed of said corporation.

Witness my hand and official seal this 24 day of August, 1951.

Ernest Hauck

ERNEST [illegible]
Notary Public [illegible]
[illegible]
Qualified [illegible]
[illegible]
[illegible]
New York County
Commission Expires March 30, 1953

STATE OF PENNA.)
) SS.:
COUNTY OF BERKS)

This is to certify that on the 31ST day of August, 1951, before me personally came OTTO T. ENGLEHART President, with whom I am personally acquainted who being by me duly sworn, says, that he is the President, and R. M. QUIMBY is the Secretary of BERYLLIUM DEVELOPMENT, INC.; the corporation described in and who executed the foregoing instrument; that he knows the common seal of the corporation; that the seal affixed to the foregoing instrument is said common seal, and the name of the corporation was subscribed thereto by said President and that said President and Secretary subscribed their names thereto and the common seal was affixed, all by order of the Board of Directors of said corporation, and that the said instrument is the act and deed of said corporation.

Witness my hand and official seal this 31ST day of August, 1951.

Martha H. Ortwell

NOTARY PUBLIC
My Commission Expires
January 29, 1955

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

February 14, 1952

Mar 26, 1952
Separate contract void & not used. Replaced by a single contract combining DMEA 2105 & 2106 under 2105 number.
J.L.H.

Memorandum

To: Acting Administrator

From: Chief Counsel

Subject: Beryllium Development, Inc., exploration contract -- Docket Nos. DMEA-2105 and 2106

The captioned contracts propose the conduct simultaneously of two separate projects within approximately 1,500 feet of each other upon a single piece of property leased by the Operator. As at present set up they call for the purchase of a $3,500.00 compressor for each project, as well as the duplication of other operating equipment. While we do not attempt to pass upon the wisdom of such arrangements, we feel that if the work at both points is to be conducted simultaneously we should not approve it as two separate projects, but should see that it is placed within one contract containing the explanation that the work at both points will proceed at the same time. If, on the other hand, it were determined that the two operations could be conducted in sequence rather than together, then it might be possible to approve one of the present projects as it stands and approve the other at some later date to follow upon the completion of the first. In that event arrangements could undoubtedly be made for using some or all of the same equipment in both operations. We therefore suggest the revision of the proposed handling of the matter to conform to one of the alternatives outlined above.

Your files on the two cases are returned herewith.

J. L. Hofflund
Chief Counsel

Attachments

The idea of 2 separate contracts was dispensed with and a single contract to cover both was made. See memo from legal Mar 25, 1952
J.L.H.

A rectangular tract of land approx. 71,000 by 4000 ft. lying partially in Newry Township and partially in Rumford Township as shown in figure 1 attached hereto. Embracing Lumbago Mountain and the Nevel Mine but excluding a tract of approximately 870 ft by 870 ft surrounding the Whitehall Feldspar Mine as shown in Figure 2 attached hereto.

Description of the Project. The project has for its purpose the exploring of a Pegmatite Dike for evidences of beryl in commercial quantities. The actual work will be performed in the area of approximately 300 by 400 feet marked as beryl prospect No. 1 on figures 2 attached hereto and shown in greater detail in figure 3 attached hereto. The work will consist of removing the shallow overburden from an area of approx. 100 by 300 ft and the digging of four trenches roughly 70 ft long 3 ft wide and 6 ft deep. The rock thus exposed will be tested and sampled as to quality and quantity of beryl content.

Z 105

Beryllium Development Co.

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

February 14, 1952

Memorandum

To: Acting Administrator

From: Chief Counsel

Subject: Beryllium Development, Inc., exploration contract -- Docket Nos. DMEA-2105 and 2106

The captioned contracts propose the conduct simultaneously of two separate projects within approximately 1,500 feet of each other upon a single piece of property leased by the Operator. As at present set up they call for the purchase of a $3,500.00 compressor for each project, as well as the duplication of other operating equipment. While we do not attempt to pass upon the wisdom of such arrangements, we feel that if the work at both points is to be conducted simultaneously we should not approve it as two separate projects, but should see that it is placed within one contract containing the explanation that the work at both points will proceed at the same time. If, on the other hand, it were determined that the two operations could be conducted in sequence rather than together, then it might be possible to approve one of the present projects as it stands and approve the other at some later date to follow upon the completion of the first. In that event arrangements could undoubtedly be made for using some or all of the same equipment in both operations. We therefore suggest the revision of the proposed handling of the matter to conform to one of the alternatives outlined above.

Your files on the two cases are returned herewith.

J. L. Hofflund

J. L. Hofflund
Chief Counsel

Attachments

Idea of 2 contracts disapproved with
1 contract made to include both
See Hofflund's later memo
of Mar 25 1952
J.L.H.

FILE COPY
SURNAME:

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

February 14, 1952

Memorandum

To: Acting Administrator

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Subject: Beryllium Development, Inc., exploration contract -- Docket Nos. DMEA-2105 and 2106

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Your files on the two cases are returned herewith.

Idea of 2 separate contract dispensed with. 1 Contract set up for both. See Hofflund

J. L. Hofflund

J. L. Hofflund
Chief Counsel

N.S
R+R

Attachments

RRGuthrie/ema

Copy to: Mails & Files
J. L. Hofflund
R. Guthrie
Chron.

S.R.

MF-200
(June 1951)

DMA-2105
Docket No. DMA
Commodity Beryl

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

DIVISION COPY

EXPLORATION PROJECT CONTRACT [1]

It is agreed this ________ day of ________, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Administration, hereinafter called the "Government," and [2] Beryllium Development, Inc., a wholly owned subsidiary of The Beryllium Corporation, Reading, Pennsylvania

hereinafter called the "Operator," as follows:

1. *Authority for contract.* This agreement is entered into under the authority of the Defense Production Act of 1950, pursuant to Mineral Order 5, entitled "Regulations Governing Government Aid in Defense Exploration Projects."

2. *Operator's property rights.* The exploration project shall be conducted on that certain property situated in the State of Maine, County of Oxford described as follows: [3] A rectangular tract of land approximately 7100 by 4600 feet, lying partially in Newry Twp. and partially in Rumford Twp. as shown in Figure 1 attached hereto, embracing Plumbago Mountain and the Nevel Mine but excluding a tract of approximately 870 feet by 670 feet surrounding the Whitehall Feldspar Mine as shown in Figure 2 attached hereto.

with respect to which the Operator represents and undertakes: [4]

(a) [illegible]

(b) That he is a lessee, in possession and entitled to possession, and the subordination agreement of the lessor is attached.

3. *Exploration project.* The Operator, within ninety (90) days from the date of this contract shall commence work on a project of exploration for [5] Beryl; shall prosecute the work efficiently, expertly, in a workmanlike manner, in accordance with good mining standards, with suitable and adequate equipment, materials, and labor, all properly designed to bring the project to completion within a period of [6] Eighteen (18) months from the date of this contract. The exploration project and the work to be performed are more fully described on Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, is made a part of this contract.

4. *Performance of the work.* The work shall be performed by the Operator, under his sole direction and control: *Provided,* That with the consent of the Government and its written approval of the contract or contracts, all or any part of the work may be performed by the Operator through contract or contracts with independent contractors. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

5. *Fixtures and improvements.* The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof. Any additional facilities, buildings, and fixtures, to be purchased, installed, or erected by the Operator, with the estimated cost of each, to which the Government will contribute currently its agreed pro rata share, are listed in Exhibit "A" attached hereto. The difference between the cost of such additional facilities, buildings, or fixtures, and the salvage value thereof at the conclusion of the work, shall be charged as a cost of the project to which the Government has contributed its pro rata share.

6. *Operating equipment.* Any operating equipment to be rented, purchased, or furnished by the Operator, with the allowable rental, purchase price, or depreciation, as the case may be, is listed under appropriate headings in Exhibit "A" attached hereto. As to equipment purchased for the project, the Government will contribute its agreed pro rata share of the cost thereof, and the difference between the cost and the salvage value at the conclusion of the work shall be charged as a cost of the project to which the Government has contributed its pro rata share.

---

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property.
[4] Strike out the provision not applicable.
[5] Name of mineral.
[6] Not in excess of 2 years.

7. *Title to and disposition of property.* All facilities, buildings, fixtures, equipment or other items costing more than $50 each, paid for or purchased with funds contributed jointly by the Operator and the Government, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the termination of the contract, if they have any salvage value, shall be disposed of for their joint account unless the Government, in writing, waives its interest in any such items. The Government may require the dismantling, severance from land, and removal of any such items in order to realize its interest in the salvage value thereof, and the cost of any such removal and of the disposal of the items shall be for the joint account of the parties in proportion to their respective interests.

8. *Labor and supervision.* An itemized schedule of labor, by numbers and classes (miners, muckers, millmen, etc.), and of supervisors, by numbers and positions, with the maximum wages or salaries that may be paid to each as an allowable cost of the project is set forth in Exhibit "A" attached hereto.

9. *Rehabilitation and repairs.* A statement of the cost of any necessary rehabilitation or repairs to put existing facilities, buildings, installations, and fixtures into useful and operable condition and which are to be allowed as costs of the project is included in Exhibit "A."

10. *Allowable costs of the project.* The costs of the project in which the Government will participate are limited to the necessary, reasonable, direct costs of performing the exploration work, including the costs of materials, supplies, engineering, power, water, analytical work, accounting, and utilities, including items of equipment costing less than $50 each; and the costs referred to in Articles 5, 6, 8, and 9, and the exhibits annexed to and referred to in this contract. Although the Government may pay part of the cost of new or additional facilities, structures, buildings, and equipment, only the depreciation on such items, computed as indicated in Articles 5 and 6, will be charged as a cost of the project. No items of general overhead, corporate management, interest, taxes, or any other indirect costs not expressly allowed by these provisions, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

11. *Accounts and audits.* The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract.

12. *Progress reports.* The Operator shall provide the Government with monthly reports of work performed under the contract upon forms to be provided by the Government. Each monthly progress report shall bear the certification of the Operator and shall constitute the Operator's invoice of costs incurred on the project during the period covered by the report.

13. *Payment to the Operator.* The monthly progress report (invoice), to the extent approved by the Government, shall be processed for payment by the Government. Payment shall be made in the amount of 90 percent of the approved costs incurred; *Provided,* That the aggregate total of all sums paid by the Government under this agreement shall not exceed $22,730.00, which is 90 percent of the agreed estimated total cost of this project, $25,256.00.

14. *Final reports by Operator.* Upon completion of the project or termination of this contract, the Operator shall provide the Government with a comprehensive geologic and engineering report, including an estimate of ore reserves, to the best of his ability. Four copies of all reports shall be furnished to the Government.

15. *Repayment by Operator.* If, upon the completion of the exploration project or termination of the contract, the Government considers that a discovery or development has resulted from the work from which commercial production of ore may be made, the Government, within 6 months thereafter, shall so certify to the Operator, particularly describing and delimiting its estimate of the discovery or the development. Thereafter, if and as ore is produced as a result of such discovery or development, the Operator and his successor in interest shall be and become obligated to pay to the Government a percentage royalty on the net smelter returns or other net proceeds realized from such ore, concentrates, or metal produced within ten (10) years from the date of this contract, until the total amount contributed by the Government, without interest, is fully repaid or said 10 years have elapsed, whichever occurs first, as follows:

Of net smelter returns or other net proceeds not in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent.

Of net smelter returns or other net proceeds in excess of eight dollars ($8.00) per ton of ore: One and one-half (1½) percent, plus one-half (½) percent for each additional full fifty cents ($0.50) in excess of eight dollars ($8.00) per ton of ore, but not in excess of a maximum of five (5) percent.

This obligation to repay from net returns or proceeds shall be and remain a claim and lien upon the mineral deposit which is the subject of the exploration project and upon any production resulting from such discovery or development, in favor of the Government, until fully paid, or until said 10-year period has elapsed; and this claim and lien and the Government's right to repayment shall survive any termination of the contract, whether by completion of the exploration project or otherwise. This article is not to be construed as imposing any obligation on the Operator or his successor in interest to produce ore from any such discovery or development.

16. *No assignment of contract.* Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder.

17. *Termination and completion.* The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worthwhile discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; shall dispose of any unused materials, supplies, and equipment for the joint account of the Operator and the Government in the proportion of their respective interests; and shall pay to the Government its pro-rata share of any money remaining.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

Beryllium Development, Inc.
(Operator)

By _____
President

By _____
Secretary

By _____
Acting Administrator
Defense Minerals Exploration
Administration

U. S. GOVERNMENT PRINTING OFFICE 16—

EXPLORATION PROJECT CONTRACT
BERYLLIUM DEVELOPMENT, INC.
DOCKET NO. DMRA-2105

EXHIBIT "A"

Statement of the Work

The project has for its purpose the exploring of a pegmatite dike for evidences of beryl in commercial quantities. The actual work will be performed in the area of approximately 300 by 400 feet marked as beryl prospect No. 1 on Figure 2 attached hereto and shown in greater detail in Figure 3 attached hereto. The work will consist of removing the shallow overburden from an area of approximately 100 by 300 feet and the digging of four trenches roughly 70 feet long 3 feet wide and 6 feet deep. The rock thus exposed will be tested and sampled as to quality and quantity of beryl content.

Estimated Costs of the Project

Rehabilitation		
None		
Fixtures and Improvements		
Combination Shed and Shelter	$ 250.00	
Powder House	100.00	$ 350.00
Operating Equipment		
To be purchased		
Jeep - 4 wheel drive	1,800.00	
Dodge Power Wagon - 4 wheel drive	3,000.00	
Air Compressor 105 cfm	3,500.00	
1 - 55 lb. Jackhammer	400.00	
1 Galvanometer	15.00	
1 Blasting Machine	35.00	
1 Wheelbarrow	25.00	
100 feet Air Line - 1 inch	10.00	

50 feet Air Hose	$ 50.00	
Drill steel & carbide bits	474.00	
Miscellaneous Small Tools	145.00	$ 9,454.00
Operating Equipment		
To be rented		
Bulldozer - 10 days @ $80.00 Stripping	800.00	
"6 x 6" Truck - 10 days @ $30.00 Road	300.00	
Bulldozer - 10 days @ $64.00 Road	640.00	1,740.00
Labor and Supervision		
2 Laborers - 4,320 hours @ $1.30	5,616.00	
1 Driller - 2,160 hours @ $1.60	3,456.00	
1 Foreman - 1,080 hours @ $2.25	2,430.00	
Labor on road - 3 men for 10 days @ $12.00	360.00	
Payroll tax & insurance, approximately 6%	690.00	12,552.00
Material and Supplies		
2000 Gallons Gasoline @ $.28	560.00	
2 Drums - Lubricant	70.00	
2000 Lbs. Gelatin Dynamite @ $22.00 cwt.	440.00	
500 Electric Blasting Caps @ $15.00	75.00	
2 Rolls lead wire	15.00	1,160.00
Total Estimated Cost of Project		**$25,256.00**

Government's Share 90% - $22,730.00 Maximum

Operator's Share 10% - $ 2,526.00

Protection of Idle Equipment

In the event that the project work is shut-down through a winter season, it shall be the Operator's responsibility to care for the equipment and protect it from theft and damage during the period of idleness.

THE BERYLLIUM CORPORATION
P. O. BOX 1462
READING. PENNA.

January 17, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 1 1952

Defense Minerals Exploratory Administration
Department of the Interior
Industrial Minerals Branch
Washington 25, D. C.

Attention: Mr. Lawrence Houk

Reference: DOCKET NUMBERS DMA-2105 and DMA 2106

Gentlemen:

Enclosed herewith are the executed agreements to be attached to Docket No. DMA-2105 and DMA-2106, application for exploratory project loans.

We would also appreciate the expediting of these applications for reason that if they are granted, the necessary machinery must be purchased and delivered in order that we may start work in early Spring.

Yours very truly,

THE BERYLLIUM CORPORATION

G. N. Broome

G. N. Broome
Executive Assistant

GNB:mbs

Attachment.

GEOLOGICAL REPORT ON THE BERYL-BEARING PEGMATITES OF THE NEWRY-ANDOVER AREA, MAINE

By Andrew H. McNair

Introduction:

The Newry-Andover area in Oxford County, Maine has had sporadic mining of its pegmatites since the 1860's, when small cuts were made in several deposits in search for green tourmalines and aquamarines that could be used as gems. The Nevel mine, shown on Figure 2, was operated by Richard Nevel for the General Electric Company during the summers of 1927, 28 and 29, when pollucite, a complex ore of caesium, was mined. The production according to George Crooker of Andover, Maine, for 1928 was 80 tons of pollucite having an estimated value of 40,000 dollars a ton. During the work in the late twenties many beautiful and rare pegmatite minerals were obtained and Newry became a famous mineral locality. Although the mine has not been operated since 1929, several hundred people visit the mine dump during the summer season to collect specimens.

Feldspar mining has been limited to the Whitehall feldspar mine which was opened by the United Feldspar Company in the late 1930's. It was subsequently obtained by the Whitehall Company, who worked the mine for feldspar in 1948 and 1949. In addition to feldspar, minor quantities of beryl, spodumene, amblygonite and scrap-mica were obtained.

The Whitehall Company carried out an intensive search for pegmatites in the Newry-Andover area from 1944 to 1948,

when prospectors searched the hills and woods for pegmatite outcrops. The more promising pegmatites were scraped of their overburden and numerous prospect pits were made in search of coarse-grained pegmatites that might contain commercial quantities of feldspar. In the course of this work they discovered many pegmatites that contained small or widely scattered beryl crystals. Only two prospects were found that contained crystals in any quantity and these constitute the deposits described and evaluated in this report.

Location of area:

The general area containing the beryl prospects is owned by the International Paper Company of Glens Falls, New York, who leased the mineral rights to the Whitehall Company of Keene, New Hampshire. The Whitehall Company in turn has granted the Beryllium Corporation a sub-lease on the mineral rights of all of the area owned by International Paper in the town of Newry east of Bear River and all of the drainage area of Howe Brook in the town of Andover, except for an area of approximately ten acres surrounding the Whitehall Feldspar mine. The location of the lease area is shown in Figure 1 accompanying this report.

Accessibility:

The geographic location of the prospects is indicated on Figure 2. The No. 1 prospect is reached from hard

surfaced Route 5 by an abandoned mine road 0.87 miles long that at present cannot be travelled except possibly by a four-wheel drive vehicle; and by a foot path 0.40 miles long. The abandoned mine road is steep and even after being filled and graded can be used only by light four-wheel drive trucks or by 6" by 6" trucks. The foot path from the Whitehall Feldspar mine follows a gentle grade and could be transformed into an acceptable truck road by being graded with waste rock from the dump of the feldspar mine.

The No. 2 prospect is located high on the northeast ridge of Plumbago Mountain. It can most easily be reached on foot by a steep climb from the No. 1 prospect. Mining equipment could be moved to the prospect by using the logging road that ascends Howe Brook and by a caterpillar tractor trail up the south branch of Howe Brook used by the Whitehall Company when the prospect pits a short distance north of the No. 2 prospect were made. The approximate route of this trail is shown on Figure 1.

Mining Conditions:

Deep snow, ice and cold weather normally prohibit both the use of access roads and the efficient use of machinery between November 15 and May 15, although it is reported that during exceptionally mild winters, snow and cold weather do not develop in the area until early in December.

Pegmatites and Beryl Deposits:

Seven pegmatites occur in the area mapped. The approximate size and shape of these bodies is shown on Figure 2. All appear to be irregularly lens-shaped and to have moderate dips. They occur on the crests, flanks and summits of hills and from their surface expression appear to be relatively thin. None of the bodies are well exposed at the surface although overburden is rarely more than a few feet thick. For the most part, where they can be observed, the pegmatites consist of fine to medium-grained perthite, quartz, plagioclase and muscovite. Areas of large crystals with segregations of commercially important minerals are not abundant.

Prospect No. 1:

The No. 1 prospect is lens-shaped in plan. It appears to dip south-east at a somewhat steeper angle than the slope of the hillside on which it crops out. It is approximately 630 feet long and 400 feet wide. It is not well exposed and is covered except for relatively small and scattered outcrops by a thin veneer of forest soil and thin glacial drift. Because of the relatively few exposures and the lack of mine workings it is difficult to determine the internal arrangement and structure of the body.

The apparent structure from the outer part to the center is as follows:

(1) An outer border zone 2 to 6 inches thick, consisting of quartz, muscovite and fine-grained feldspar is in contact with the country rock.

(2) The wall zone is fine-grained perthite, quartz, muscovite and fine-grained graphic granite. This zone appears to range from 2 to 6 feet in thickness and forms most of the upper surface area of the deposits.

(3) An intermediate zone contains scattered clusters of large beryl crystals in relatively coarse-grained quartz, muscovite and perthite. This zone appears to contain the only mineable concentration in the deposit. It is exposed only at four places. The most important exposures are shown on Figure 3 representing the northwest part of the pegmatite. The largest area contains 16 blue-green to gray beryl crystals ranging up to 8 inches in diameter and up to 20 inches long. The second area contains 6 blue-green to gray crystals up to 14 inches in diameter and up to 24 inches long. Total beryl content of both exposures is estimated at four tons, assuming that the zone is one foot thick. From the large size of the crystals it would appear that the zone is more than a foot thick. The entire zone does not contain beryl concentrations as rich as the ones indicated on Figure 3 because the exposed pegmatite south of the largest beryl-bearing area contains no visible trace of beryl.

Two small exposures and several loose blocks of the beryl-bearing zone occur approximately 200 feet northeast of the area shown in Figure 3. The zone here appears to be only 8 to 10 inches thick and contains abundant small crystals from one-half to 4 inches in diameter and 2 to 16 inches long. Surface exposures do not show the relation of these outcrops to the larger exposures to the south. The most likely explanation is that the zone has been eroded away in the area between the two beryl concentrations.

Estimates of Reserves of No. 1 Prospect:

Lack of information on both the extent and concentration of beryl crystals in the deposit prevents an accurate estimate of reserves.

Proven reserves (of beryl in sight) is approximately 4 tons. Probable reserves, assuming that the beryl-bearing zone is present throughout the area indicated as probable underground extent on Figure 3; that the zone averages 18 inches in thickness; and that it contains one half the beryl concentration shown in the two places where it is exposed, is approximately 162 tons.

Additional reserves may be present in the pegmatite. These would largely be dependent on whether the beryl-bearing zone has been eroded from the deposit north and east of the area shown on Figure 3, as well as on the thickness and beryl concentration of the zone. From the

scanty information at hand from the pegmatite itself and from a knowledge of other New England beryl deposits, it seems unlikely that additional reserves would exceed 500 tons.

Recommendations on Prospecting the No. 1 Prospect:

The mining and diamond drilling of numerous pegmatites throughout the country has indicated clearly that mineral concentrations occur in zones more or less parallel to the walls of pegmatitic bodies and concentric to an inner nucleus or core. The clusters of beryl crystals exposed at the No. 1 prospect appear to be part of a fairly continuous zone that has been exposed to the surface at two places. If this is true, then prospecting and mining should be directed at tracing the beryl-bearing zone and fairly careful measurements should be made to determine the amount of beryl in it. Fortunately the zone is close to the surface and open cuts not exceeding 6 feet in depth should encounter the zone throughout the area of probable reserves.

It is recommended that two shallow open cuts be made in the deposit. One cut to extend through the beryl zone from the area of largest concentration southward toward the line marked D on Figure 3. The other cut to extend from the smaller beryl concentration toward the line marked E. If these cuts reveal that the zone contains

more than half as much beryl as is shown by present exposures, then a third cut should be made in the area northeast of the largest beryl concentration. In this way reserves can be developed as prospecting is carried out.

Bulldozing should be done in the vicinity of the two smaller beryl exposures northeast of the area in Figure 3. If the cleared ledges show additional areas of beryl, then another cut should be made in this part of the deposit.

The cleaning of cover from the pegmatite in the vicinity of the quartz core may reveal additional crystals. If this proves to be true, then an open-cut prospect should be made along the core.

Prospect No. 2:

The No. 2 prospect is shown on Figure 4. It is a thin, relatively flat sheet with a general low dip to the east. It is exposed over an east-west distance of approximately 580 feet and a north-south distance of about 300 feet. It ranges from 10 to 60 feet thick. It has an irregularly oval outcrop plan because it is covered by an erosional "island" of wallrock.

The apparent internal structure of the pegmatite from the top to the central core is as follows:

(1) A thin outer zone of fine-grained quartz-muscovite pegmatite is in contact with wall rock. This zone contains much granular black tourmaline in places.

(2) The wall zone consists of medium-grained quartz, feldspar, muscovite and minor amounts of beryl. The largest beryl concentration contains 65 grayish-white crystals ranging from one half to 5 inches in diameter in a thin sheet immediately overlying the quartz core. The beryl concentration appears to be restricted to the southwest corner of the wall zone, although it might be present at other places where the zone is now covered by overburden. Nests and pockets of large muscovite books occur in the zone and these would yield scrap mica.

(3) An intermediate cleavlandite-spodumene-muscovite zone is exposed at the south and east sides of the pegmatite. This zone should contain scattered beryl crystals and amblygonite, although only one beryl crystal was found in the zone along the south margin of the deposit. If this zone were prospected, it is likely that some of the cavities in the cleavlandite would contain green gem tourmaline. The spodumene occurs in large "logs" and in places is the most abundant constituent of the zone.

(4) The centrally located quartz core is discontinuous. Its longest exposure is at the west end of the body where it contains 27 blue-green crystals. Some of the crystals are rimmed with fine-grained albite in bands up to 2½ inches thick. The crystals range from 4 to 11 inches in diameter and from 6 to 24 inches in length. The three beryl crystals exposed in the northeast segment of the core

are white to transparent and do not have crystal outlines. They are difficult to distinguish from the quartz in which they are embedded.

Estimates of Reserves, No. 2 Prospect:

The proven reserves are estimated to be between 3/4 and 1 ton of beryl. The numerous small crystals in the wall zone occur in a sheet apparently not more than 8 to 10 inches thick. The discontinuity, as well as thinness, of the zone does not permit a larger estimate. The concentration of large crystals in the core is highest at the west outcrop and from study of present exposures appears to be lowest in the east part of the pegmatite. It is not unlikely that the core contains several hundred tons of beryl, most of this, it is believed, would occur in widely scattered crystals and could not be recovered profitably. The core itself is discontinuous and no reliable prediction can be made concerning the core in the part of the body that is now covered by wall rock. From the study of the distribution of beryl it is unlikely that large areas of the core contain substantial quantities of beryl.

Recommendations on Prospecting the No. 2 Prospect:

It is recommended that the western end of the body be stripped of its thin layer of overburden and particular attention be given the northwest corner in the hope that beryl-bearing material will be uncovered.

At least two prospect pits should be made in the quartz core concentrations between localities 1 and 4 as shown on Figure 4. These cuts should extend below as well as above the core to test the possibility of a core-margin beryl concentration. It is realized that as these cuts are extended eastward they would have to pass through more and more wall rock as they grew in this direction.

Overburden should be stripped east of the beryl concentration indicated at area 5 and shallow cuts be made to determine the thickness and beryl content.

Overburden should be stripped across the width of the pegmatite in the vicinity of A on Figure 4, and cuts made in any beryl concentration that might be disclosed by the stripping.

The open cuts in both the No. 1 and No. 2 prospects will be small, particularly in the early stages of the work. It would seem advisable, therefore, that a small crew consisting of three or four men would work to greater advantage than a larger number that would get in each others way. It would also be advantageous that one of the men be skilled at recognizing gray and white massive beryl, spodumene and amblygonite.

Summary and Conclusions:

It is unlikely that either of the two beryl prospects could be mined at a profit for beryl alone at the current market price for beryl, except for very short scaled work

aimed at robbing the exposed beryl clusters of a few tons of easily obtainable ore. Both prospects should be worked for all of the materials that could be recovered profitably from them, including feldspar, mica (largely scrap containing a small amount of sheet-mica), spodumene, amblygonite as well as rare mineral specimens.

The shortness of the season during which they could be worked and their remoteness from hard-surfaced roads argue also for efficient, well-planned work in both their prospecting and development.

The two deposits are the most promising untested prospects in New England capable of yielding hand-cobbed beryl that are known to the author. For this reason it is believed that small scale prospecting of the deposits is justified.

Respectfully submitted,

Andrew H. McNair
Hanover, New Hampshire
September 12, 1951

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

March 25, 1952

Memorandum

To: Lawrence G. Houk

From: Chief Counsel

Subject: Beryllium Development, Inc. exploration project - Docket No. DMEA-2105

The attached seven copies of the proposed contract in this case have been prepared on the new contract form and are satisfactory from a legal standpoint, provided as indicated in the data which you submitted to us, you have determined that the guarantee of the Operator as set forth in the new form can be accepted in lieu of the consent of the owner of the property. Copies of the necessary maps should be attached to each copy of the contract.

Your file in this case is returned herewith.

J. L. Hofflund
Chief Counsel

Attachments

Beryllium Development, Inc.
P. O. Box 1462
Reading, Pennsylvania

Subject: DMA-2106X - Beryl

Gentlemen:

Your application is being referred to Mr. McHenry Mosier, Executive Officer, DMA Field Team, Region VIII, Eastern Experiment Station, College Park, Maryland, for further information.

Sincerely yours,

Tom Lyon, Director
Supply Division

RWASKEY:mp
10-9-51
cc: Field Team, Region VIII (2)
DMA Docket File
Mr. Barr

Mr. McHenry Mosier, Executive Officer
DMA Field Team, Region VIII
Eastern Experiment Station
College Park, Maryland

Beryllium Development, Inc.

DMA-2106X

Beryl

90% of $19,350.00

RWASKEY:mp
10-9-51

GEOLOGICAL REPORT ON THE BERYL-BEARING PEGMATITES OF THE NEWRY-ANDOVER AREA, MAINE

By Andrew H. McNair

Introduction:

The Newry-Andover area in Oxford County, Maine has had sporadic mining of its pegmatites since the 1860's, when small cuts were made in several deposits in search for green tourmalines and aquamarines that could be used as gems. The Nevel mine, shown on Figure 2, was operated by Richard Nevel for the General Electric Company during the summers of 1927, 28 and 29, when pollucite, a complex ore of caesium, was mined. The production according to George Crocker of Andover, Maine, for 1928 was 30 tons of pollucite having an estimated value of 40,000 dollars a ton. During the work in the late twenties many beautiful and rare pegmatite minerals were obtained and Newry became a famous mineral locality. Although the mine has not been operated since 1929, several hundred people visit the mine dump during the summer season to collect specimens.

Feldspar mining has been limited to the Whitehall feldspar mine which was opened by the United Feldspar Company in the late 1930's. It was subsequently obtained by the Whitehall Company, who worked the mine for feldspar in 1948 and 1949. In addition to feldspar, minor quantities of beryl, spodumene, amblygonite and scrap-mica were obtained.

The Whitehall Company carried out an intensive search for pegmatites in the Newry-Andover area from 1944 to 1948,

when prospectors searched the hills and woods for pegmatite outcrops. The more promising pegmatites were scraped of their overburden and numerous prospect pits were made in search of coarse-grained pegmatites that might contain commercial quantities of feldspar. In the course of this work they discovered many pegmatites that contained small or widely scattered beryl crystals. Only two prospects were found that contained crystals in any quantity and these constitute the deposits described and evaluated in this report.

Location of area:

The general area containing the beryl prospects is owned by the International Paper Company of Glens Falls, New York, who leased the mineral rights to the Whitehall Company of Keene, New Hampshire. The Whitehall Company in turn has granted the Beryllium Corporation a sub-lease on the mineral rights of all of the area owned by International Paper in the town of Newry east of Bear River and all of the drainage area of Howe Brook in the town of Andover, except for an area of approximately ten acres surrounding the Whitehall Feldspar mine. The location of the lease area is shown in Figure 1 accompanying this report.

Accessibility:

The geographic location of the prospects is indicated on Figure 2. The No. 1 prospect is reached from hard

surfaced Route 5 by an abandoned mine road 0.87 miles long that at present cannot be travelled except possibly by a four-wheel drive vehicle; and by a foot path 0.40 miles long. The abandoned mine road is steep and even after being filled and graded can be used only by light four-wheel drive trucks or by 6" by 6" trucks. The foot path from the Whitehall Feldspar mine follows a gentle grade and could be transformed into an acceptable truck road by being graded with waste rock from the dump of the feldspar mine.

The No. 2 prospect is located high on the northeast ridge of Plumbago Mountain. It can most easily be reached on foot by a steep climb from the No. 1 prospect. Mining equipment could be moved to the prospect by using the logging road that ascends Howe Brook and by a caterpillar tractor trail up the south branch of Howe Brook used by the Whitehall Company when the prospect pits a short distance north of the No. 2 prospect were made. The approximate route of this trail is shown on Figure 1.

Mining Conditions:

Deep snow, ice and cold weather normally prohibit both the use of access roads and the efficient use of machinery between November 15 and May 15, although it is reported that during exceptionally mild winters, snow and cold weather do not develop in the area until early in December.

Pegmatites and Beryl Deposits:

Seven pegmatites occur in the area mapped. The approximate size and shape of these bodies is shown on Figure 2. All appear to be irregularly lens-shaped and to have moderate dips. They occur on the crests, flanks and summits of hills and from their surface expression appear to be relatively thin. None of the bodies are well exposed at the surface although overburden is rarely more than a few feet thick. For the most part, where they can be observed, the pegmatites consist of fine to medium-grained perthite, quartz, plagioclase and muscovite. Areas of large crystals with segregations of commercially important minerals are not abundant.

Prospect No. 1:

The No. 1 prospect is lens-shaped in plan. It appears to dip south-east at a somewhat steeper angle than the slope of the hillside on which it crops out. It is approximately 630 feet long and 400 feet wide. It is not well exposed and is covered except for relatively small and scattered outcrops by a thin veneer of forest soil and thin glacial drift. Because of the relatively few exposures and the lack of mine workings it is difficult to determine the internal arrangement and structure of the body.

The apparent structure from the outer part to the center is as follows:

(1) An outer border zone 2 to 6 inches thick, consisting of quartz, muscovite and fine-grained feldspar is in contact with the country rock.

(2) The wall zone is fine-grained perthite, quartz, muscovite and fine-grained graphic granite. This zone appears to range from 2 to 6 feet in thickness and forms most of the upper surface area of the deposits.

(3) An intermediate zone contains scattered clusters of large beryl crystals in relatively coarse-grained quartz, muscovite and perthite. This zone appears to contain the only mineable concentration in the deposit. It is exposed only at four places. The most important exposures are shown on Figure 3 representing the northwest part of the pegmatite. The largest area contains 16 blue-green to gray beryl crystals ranging up to 8 inches in diameter and up to 20 inches long. The second area contains 6 blue-green to gray crystals up to 14 inches in diameter and up to 24 inches long. Total beryl content of both exposures is estimated at four tons, assuming that the zone is one foot thick. From the large size of the crystals it would appear that the zone is more than a foot thick. The entire zone does not contain beryl concentrations as rich as the ones indicated on Figure 3 because the exposed pegmatite south of the largest beryl-bearing area contains no visible trace of beryl.

Two small exposures and several loose blocks of the beryl-bearing zone occur approximately 200 feet northeast of the area shown in Figure 3. The zone here appears to be only 8 to 10 inches thick and contains abundant small crystals from one-half to 4 inches in diameter and 2 to 16 inches long. Surface exposures do not show the relation of these outcrops to the larger exposures to the south. The most likely explanation is that the zone has been eroded away in the area between the two beryl concentrations.

Estimates of Reserves of No. 1 Prospect:

Lack of information on both the extent and concentration of beryl crystals in the deposit prevents an accurate estimate of reserves.

Proven reserves (of beryl in sight) is approximately 4 tons. Probable reserves, assuming that the beryl-bearing zone is present throughout the area indicated as probable underground extent on Figure 3; that the zone averages 18 inches in thickness; and that it contains one half the beryl concentration shown in the two places where it is exposed, is approximately 162 tons.

Additional reserves may be present in the pegmatite. These would largely be dependent on whether the beryl-bearing zone has been eroded from the deposit north and east of the area shown on Figure 3, as well as on the thickness and beryl concentration of the zone. From the

scanty information at hand from the pegmatite itself and from a knowledge of other New England beryl deposits, it seems unlikely that additional reserves would exceed 500 tons.

Recommendations on Prospecting the No. 1 Prospect:

The mining and diamond drilling of numerous pegmatites throughout the country has indicated clearly that mineral concentrations occur in zones more or less parallel to the walls of pegmatitie bodies and concentric to an inner nucleus or core. The clusters of beryl crystals exposed at the No. 1 prospect appear to be part of a fairly continuous zone that has been exposed to the surface at two places. If this is true, then prospecting and mining should be directed at tracing the beryl-bearing zone and fairly careful measurements should be made to determine the amount of beryl in it. Fortunately the zone is close to the surface and open cuts not exceeding 6 feet in depth should encounter the zone throughout the area of probable reserves.

It is recommended that two shallow open cuts be made in the deposit. One cut to extend through the beryl zone from the area of largest concentration southward toward the line marked D on Figure 3. The other cut to extend from the smaller beryl concentration toward the line marked E. If these cuts reveal that the zone contains

more than half as much beryl as is shown by present exposures, then a third cut should be made in the area northeast of the largest beryl concentration. In this way reserves can be developed as prospecting is carried out.

Bulldozing should be done in the vicinity of the two smaller beryl exposures northeast of the area in Figure 3. If the cleared ledges show additional areas of beryl, then another cut should be made in this part of the deposit.

The cleaning of cover from the pegmatite in the vicinity of the quartz core may reveal additional crystals. If this proves to be true, then an open-cut prospect should be made along the core.

Prospect No. 2:

The No. 2 prospect is shown on Figure 4. It is a thin, relatively flat sheet with a general low dip to the east. It is exposed over an east-west distance of approximately 580 feet and a north-south distance of about 300 feet. It ranges from 10 to 60 feet thick. It has an irregularly oval outcrop plan because it is covered by an erosional "island" of wallrock.

The apparent internal structure of the pegmatite from the top to the central core is as follows:

(1) A thin outer zone of fine-grained quartz-muscovite pegmatite is in contact with wall rock. This zone contains much granular black tourmaline in places.

(2) The wall zone consists of medium-grained quartz, feldspar, muscovite and minor amounts of beryl. The largest beryl concentration contains 65 grayish-white crystals ranging from one half to 5 inches in diameter in a thin sheet immediately overlying the quartz core. The beryl concentration appears to be restricted to the southwest corner of the wall zone, although it might be present at other places where the zone is now covered by overburden. Nests and pockets of large muscovite books occur in the zone and these would yield scrap mica.

(3) An intermediate cleavlandite-spodumene-muscovite zone is exposed at the south and east sides of the pegmatite. This zone should contain scattered beryl crystals and amblygonite, although only one beryl crystal was found in the zone along the south margin of the deposit. If this zone were prospected, it is likely that some of the cavities in the cleavlandite would contain green gem tourmaline. The spodumene occurs in large "logs" and in places is the most abundant constituent of the zone.

(4) The centrally located quartz core is discontinuous. Its longest exposure is at the west end of the body where it contains 27 blue-green crystals. Some of the crystals are rimmed with fine-grained albite in bands up to 2½ inches thick. The crystals range from 4 to 11 inches in diameter and from 6 to 24 inches in length. The three beryl crystals exposed in the northeast segment of the core

are white to transparent and do not have crystal outlines. They are difficult to distinguish from the quartz in which they are embedded.

Estimates of Reserves, No. 2 Prospect:

The proven reserves are estimated to be between 3/4 and 1 ton of beryl. The numerous small crystals in the wall zone occur in a sheet apparently not more than 8 to 10 inches thick. The discontinuity, as well as thinness, of the zone does not permit a larger estimate. The concentration of large crystals in the core is highest at the west outcrop and from study of present exposures appears to be lowest in the east part of the pegmatite. It is not unlikely that the core contains several hundred tons of beryl, most of this, it is believed, would occur in widely scattered crystals and could not be recovered profitably. The core itself is discontinuous and no reliable prediction can be made concerning the core in the part of the body that is now covered by wall rock. From the study of the distribution of beryl it is unlikely that large areas of the core contain substantial quantities of beryl.

Recommendations on Prospecting the No. 2 Prospect:

It is recommended that the western end of the body be stripped of its thin layer of overburden and particular attention be given the northwest corner in the hope that beryl-bearing material will be uncovered.

At least two prospect pits should be made in the quartz core concentrations between localities 1 and 4 as shown on Figure 4. These cuts should extend below as well as above the core to test the possibility of a core-margin beryl concentration. It is realized that as these cuts are extended eastward they would have to pass through more and more wall rock as they grew in this direction.

Overburden should be stripped east of the beryl concentration indicated at area 5 and shallow cuts be made to determine the thickness and beryl content.

Overburden should be stripped across the width of the pegmatite in the vicinity of A on Figure 4, and cuts made in any beryl concentration that might be disclosed by the stripping.

The open cuts in both the No. 1 and No. 2 prospects will be small, particularly in the early stages of the work. It would seem advisable, therefore, that a small crew consisting of three or four men would work to greater advantage than a larger number that would get in each others way. It would also be advantageous that one of the men be skilled at recognizing gray and white massive beryl, spodumene and amblygonite.

Summary and Conclusions:

It is unlikely that either of the two beryl prospects could be mined at a profit for beryl alone at the current market price for beryl, except for very short scaled work

aimed at robbing the exposed beryl clusters of a few tons of easily obtainable ore. Both prospects should be worked for all of the materials that could be recovered profitably from them, including feldspar, mica (largely scrap containing a small amount of sheet-mica), spodumene, amblygonite as well as rare mineral specimens.

The shortness of the season during which they could be worked and their remoteness from hard-surfaced roads argue also for efficient, well-planned work in both their prospecting and development.

The two deposits are the most promising untested prospects in New England capable of yielding hand-cobbed beryl that are known to the author. For this reason it is believed that small scale prospecting of the deposits is justified.

Respectfully submitted,

Andrew H. McNair
Hanover, New Hampshire
September 12, 1951

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION VIII

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 12 1951

DMEC-2106

DMA-2106X, Beryllium Development, Inc.

Plumbago Mountain, Oxford County, Maine

See DMEC-2105

2106 Combined with DMEC-2105

W. T. Millar, Mining Engineer
U. S. Bureau of Mines

Glenn W. Stewart, Geologist
U. S. Geological Survey

December 3, 1951

SUMMARY AND RECOMMENDATIONS

The geological indications of this deposit are considered favorable for beryl concentration and other pegmatite minerals and justify further exploratory work in the form of test trenches or pits and stripping part of of the overburden.

The initial exploratory work proposed totals approximately 250 linear feet of trenching or narrow open-cuts and approximately 10,000 square yards of stripping. Provided the stripping exposes additional beryl crystals and if the initial trenching exposes complex structural features, then additional trenching may be required.

The cost estimate appears reasonable.

The exploratory work will be under technically trained supervision to guard against unwarranted expenditures and to obtain accurate data for estimating mineral reserves.

It is the opinion of the Field Team that Government participation in the exploratory work proposed in this application is justified.

INTRODUCTION

DMA-Docket No. 2106X, in which the Beryllium Development, Inc. applies for Government participation in exploration of a beryl deposit in Oxford County, Maine was submitted to the field office for a field examination.

The beryl-bearing pegmatites specified in the application were examined on October 19 and 20, 1951 by W. T. Millar of the Bureau of Mines and Glenn W. Stewart of the Geological Survey. The Beryllium Development, Inc. was not represented during the field examination.

The geological report by A. H. McNair, Consulting Geologist for the Beryllium Development, Inc. which was submitted with the application is considered complete and well prepared.

The following report is based on the results of the examination by the DMA Field Team.

GENERAL DISCUSSION

Figure 4 submitted with this application outlines the exploratory work proposed in the application.

The field examination by the Government engineers confirms the geological report and recommendations as presented by A. H. McNair, consultant for the Beryllium Development, Inc. and attached to this application.

Beryl crystals are exposed in the outcrop of the pegmatite, mostly in the west end as indicated in Figure 4. Probably 3/4 of a ton of beryl is a fair estimate of beryl exposed. Feldspar, spodumene, scrap mica and amblygonite also occur in this prospect.

Stripping is considered justified as described in the application. This work may uncover additional showings of valuable minerals.

The initial trenching or small open cuts should include two cuts on the west end of the pegmatite, one on the north side and one on the south side where beryl crystals are exposed to determine the continuity of the beryl-bearing zone and to test the possibility of core-margin beryl concentrations. This work will total about 200 lineal feet of excavating in the form of a level cut driven into the slope of a tabular body. After stripping the area east of the exposed beryl concentration, small trenches should be cut to determine the thickness of the beryl-bearing zone. These cuts are to be small and require little additional expense but will furnish valuable information pertaining to estimating reserves. A trench approximately 50 feet long is considered necessary to explore the area on the east end of the pegmatite where spodumene is exposed, or, if stripping exposes additional data, a shallow test pit may be preferred instead of a trench.

It appears that the exploratory work as outlined should supply sufficient data to indicate the economic possibilities of this prospect.

The equipment requested in this application is considered justified. The automotive equipment requested in DMA Docket No. 2105X will serve this prospect also.

The access road as shown on the accompanying map, Figure 1, will require a bulldozer for moving the equipment to the prospect. A trail for a four-wheel drive truck may be provided at the same time.

The applicant recognizes the necessity of recovering all valuable minerals to succeed in mining pegmatites and has arranged for obtaining the services of a local man who is an experienced pegmatite miner and expert on identification of pegmatite minerals.

Glenn W. Stewart

Glenn W. Stewart
Geological Survey

W. T. Millar

W. T. Millar
Bureau of Mines

Answers to Questionnaire

Docket No. 2106X
Commodity - Beryl
Total Amount - $19,350.62
Government Participation - 90%

7 - (b) A guarantee will be supplied by the applicant if and when the application is approved.

10 - (a) The proposed exploratory work indicated on the map accompanying the application is more definitely described in the report by the Field Team. Stripping may indicate the necessity of additional testing which can not be mapped before the overburden is removed. However, if additional work is required it will be reviewed by a Government engineer and an amendment to the contract will be prepared.

11 - (c) The terrain between the prospects described in Dockets 2105X and 2106X does not permit transportation of portable equipment between the projects.

17 - It is possible that stripping may reveal indications which require additional exploratory work. In this event such work will be viewed by Government engineer and an amendment to the contract will be prepared.

C
O
P
Y

College Park, Maryland

December 11, 1951

Reviewed by
DMEA OPERATING COMMITTEE
12/19/51 - HB (sgd)

Memorandum

To: Frank E. Johnson, Chairman
Operating Committee, DMEA

From: Executive Officer
DMEA Field Team

Subject: DMEA Dockets 2105X and 2106X - (Beryl)
Beryllium Development, Inc. - Oxford County, Me.

Enclosed are Field Team Reports on the subject dockets suggesting favorable action for Government's participation.

During our interview with the applicant it was stated that the company prefers to supply a guarantee for its obligation instead of obtaining subordination agreements. The guarantee may be prepared at any time pending action upon the application.

McHenry Mosier

Attachments
(In quadruplicate)

THE BERYLLIUM CORPORATION
P. O. BOX 1462
READING, PENNA.

September 24, 1951

DMA-2106

Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Gentlemen:

Enclosed herewith is our Application for Aid for an Exploration Project Pursuant to Mineral Order 5, Under Defense Production Act of 1950, Form MF-103, in quadruplicate.

In lieu of information that would be contained on Form MF-100, we refer you to our application for exploration project dated April 27, 1951, and bearing Doc. No. DMA 1115.

This application is made for Beryllium Development, Inc., a wholly owned subsiary of The Beryllium Corporation.

Yours very truly,

THE BERYLLIUM CORPORATION

G. N. Broome

G. N. Broome
Executive Assistant

GNB:mbs

Enclosure

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 25 1951

BERYLLIUM DEVELOPMENT, INC.
P. O. Box 1462
Reading, Penna.

NO. 2 PROSPECT

1. (a) Copy of lease attached. International Paper Company data to be submitted later.

(b) See lease attached.

(c) Description of exact parcel to be explored is given in attached geologist's report and in Fig. 4 of said report. A subordination agreement or a letter from applicant guaranteeing the government's interest will be submitted at an early date.

2. (a) Beryl, spodumene, feldspar, scrap and sheet mica, quartz, amblygonite, and columbite-tantalite.

(b) See attached geological report and maps. Need not be returned.

3. (a) See pages 10 and 11 in geologist's report. Total cost of project is estimated at $19,350.62.

(b) Probably start May 15, 1952 or earlier as weather permits; estimated duration of project from start to finish about twelve months working time or two seasons (May 15 to November 15).

4. See Fig. 4 of attached geologist's report. It is proposed to cut 7 trenches as shown for an aggregate length of about 425 feet. The trenches will average about 3 feet in width by 6 feet in depth. It is further proposed to strip the overburden from the pegmatite over the entire area of cross-hatching shown in Fig. 4. Overburden is estimated to range from 1 - 5 feet in thickness. Subsequent to stripping it is highly probable that further exposures of beryl will be uncovered necessitating further cutting of trenches and test pits; the location or extent of any such operations cannot be predicted at this time. The position of the trenches shown in Fig. 4 is diagrammatic in part; their exact location will be confined to spots mutually agreeable to the Government Field team and the operator.

The above proposed exploration work is in elaboration and extenuation of work recommended on pages 10 and 11 of the attached geologist's report, which see.

5. None.

6.

Combination tool shed and shelter @ $250.	$250.00
Powder house and cap storage	100.00
Construction of tractor trail:	
Bulldozer to clear trail and pull compressor to prospect	190.00
3 Men, cutting brush, etc.	72.00

7. (a) Rent - Bulldozer for stripping overburden from pegmatite for 10 days @ $80. per day 800.00

7. (b) Purchase:

1 - 105 cfm Compressor	$3,500.00
1 - 55 lb. Jackhammer	400.00
50' Length Air Hose	50.00

(c) Furnished.
None.

8.

2 Laborers	4,320 hours	@ $ 1.30	5,616.00
1 Driller	2,160 hours	@ 1.60	3,456.00
1 Foreman	1,080 hours	@ 2.25	2,430.00
Payroll taxes and insurance		@ 6% (estimated)	690.12

NOTE: Foreman"s time indicated above represents half-time duty only as he will also be in charge of work on an adjacent property (Prospect #1) which is being covered under a separate application.

9.

Steel Air Line, 1" dia., 300'	@ $ 10.00	30.00
Drill Steel 4 - 2' x 1"	@ 3.75	15.00
Drill Steel 4 - 4' x 1"	@ 5.00	20.00
Drill Steel 4 - 6' x 1"	@ 6.25	25.00
Drill Steel 4 - 8' x 1"	@ 7.50	30.00
Carbide-tipped bits - 4 -1½") 4 - 1-5/8") 4 - 1-3/4") 4 - 1-7/8")	@$14.00	224.00
Steel Bits - 100 - 2") 100 - 1-7/8") 100 - 1-3/4") 100 - 1-5/8")	@ 0.40	160.00
1 Blasting Machine		35.00
1 Galvanometer		15.00
1 Wheelbarrow, rubber tired		25.00
6 Shovels, round point		15.00
1 12-lb. Sledge		4.25
2 36" Wrecking Bars		2.50
4 Picks		10.00
1 18" Stillson Wrench		5.50
1 12" Stillson Wrench		3.35
Miscellaneous small tools and other items		86.90
2,000 Gallons Gasoline	@$0.28	560.00
2,000 lbs. Dynamite, 40% std. gelatin	@ $0.22 cwt.	440.00
500 Caps, electrical		75.00
2 - 250' rolls leading wire		15.00
		$19,350.62

10. (a) $1,935.06
(b) Yes.

11. None.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 12 1951

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION VIII

DMA-2106X, Beryllium Development, Inc.

Plumbago Mountain, Oxford County, Maine

W. T. Miller, Mining Engineer
U. S. Bureau of Mines

Glenn W. Stewart, Geologist
U. S. Geological Survey

December 3, 1951

SUMMARY AND RECOMMENDATIONS

The geological indications of this deposit are considered favorable for beryl concentration and other pegmatite minerals and justify further exploratory work in the form of test trenches or pits and stripping part of of the overburden.

The initial exploratory work proposed totals approximately 250 linear feet of trenching or narrow open-cuts and approximately 10,000 square yards of stripping. Provided the stripping exposes additional beryl crystals and if the initial trenching exposes complex structural features, then additional trenching may be required.

The cost estimate appears reasonable.

The exploratory work will be under technically trained supervision to guard against unwarranted expenditures and to obtain accurate data for estimating mineral reserves.

It is the opinion of the Field Team that Government participation in the exploratory work proposed in this application is justified.

INTRODUCTION

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The geological report by A. H. McNair, Consulting Geologist for the Beryllium Development, Inc. which was submitted with the application is considered complete and well prepared.

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Figure 4 submitted with this application outlines the exploratory work proposed in the application.

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Beryl crystals are exposed in the outcrop of the pegmatite, mostly in the west end as indicated in Figure 4. Probably 3/4 of a ton of beryl is a fair estimate of beryl exposed. Feldspar, spodumene, scrap mica and amblygonite also occur in this prospect.

Stripping is considered justified as described in the application. This work may uncover additional showings of valuable minerals.

The initial trenching or small open cuts should include two cuts on the west end of the pegmatite, one on the north side and one on the south side where beryl crystals are exposed to determine the continuity of the beryl-bearing zone and to test the possibility of core-margin beryl concentrations. This work will total about 200 lineal feet of excavating in the form of a level cut driven into the slope of a tabular body. After stripping the area east of the exposed beryl concentration, small trenches should be cut to determine the thickness of the beryl-bearing zone. These cuts are to be small and require little additional expense but will furnish valuable information pertaining to estimating reserves. A trench approximately 50 feet long is considered necessary to explore the area on the east end of the pegmatite where spodumene is exposed, or, if stripping exposes additional data, a shallow test pit may be preferred instead of a trench.

It appears that the exploratory work as outlined should supply sufficient data to indicate the economic possibilities of this prospect.

The equipment requested in this application is considered justified. The automotive equipment requested in DMA Docket No. 2105X will serve this prospect also.

The access road as shown on the accompanying map, Figure 1, will require a bulldozer for moving the equipment to the prospect. A trail for a four-wheel drive truck may be provided at the same time.

The applicant recognizes the necessity of recovering all valuable minerals to succeed in mining pegmatites and has arranged for obtaining the services of a local man who is an experienced pegmatite miner and expert on identification of pegmatite minerals.

Glenn W. Stewart

Glenn W. Stewart
Geological Survey

W. T. Millar

W. T. Millar
Bureau of Mines

Answers to Questionnaire

Docket No. 2106X
Commodity - Beryl
Total Amount - $19,350.62
Government Participation - 90%

7 - (b) A guarantee will be supplied by the applicant if and when the application is approved.

10 - (a) The proposed exploratory work indicated on the map accompanying the application is more definitely described in the report by the Field Team. Stripping may indicate the necessity of additional testing which can not be mapped before the overburden is removed. However, if additional work is required it will be reviewed by a Government engineer and an amendment to the contract will be prepared.

11 - (c) The terrain between the prospects described in Dockets 2105X and 2106X does not permit transportation of portable equipment between the projects.

17 - It is possible that stripping may reveal indications which require additional exploratory work. In this event such work will be viewed by Government engineer and an amendment to the contract will be prepared.

Description of the Project: The project has for its purpose the exploration for beryl in commercial quantities in an area of approx. 580 by 300 ft marked as beryl Prospect No 2 on Figure 2 attached hereto and as shown in more detail in Figure 3 attached hereto. The shallow overburden will be stripped from selected portions of this area and 7 to 10 trenches approx. 6 ft deep and 3 ft wide will be cut at spots which the operator considers to be most promising. The rock thus exposed will be sampled and tested as to the quantity and quality of beryl content.

Estimated Cost of the Project.

BERYLLIUM DEVELOPMENT, INC.
P. O. Box 1462
Reading, Penna.

NO. 2 PROSPECT

1. (a) Copy of lease attached. International Paper Company data to be submitted later.

   (b) See lease attached.

   (c) Description of exact parcel to be explored is given in attached geologist's report and in Fig. 4 of said report. A subordination agreement or a letter from applicant guaranteeing the government's interest will be submitted at an early date.

2. (a) Beryl, spodumene, feldspar, scrap and sheet mica, quartz, amblygonite, and columbite-tantalite.

   (b) See attached geological report and maps. Need not be returned.

3. (a) See pages 10 and 11 in geologist's report. Total cost of project is estimated at $19,350.62.

   (b) Probably start May 15, 1952 or earlier as weather permits; estimated duration of project from start to finish about twelve months working time or two seasons (May 15 to November 15).

4. See Fig. 4 of attached geologist's report. It is proposed to cut 7 trenches as shown for an aggregate length of about 425 feet. The trenches will average about 3 feet in width by 6 feet in depth. It is further proposed to strip the overburden from the pegmatite over the entire area of cross-hatching shown in Fig. 4. Overburden is estimated to range from 1 - 5 feet in thickness. Subsequent to stripping it is highly probable that further exposures of beryl will be uncovered necessitating further cutting of trenches and test pits; the location or extent of any such operations cannot be predicted at this time. The position of the trenches shown in Fig. 4 is diagrammatic in part; their exact location will be confined to spots mutually agreeable to the Government Field team and the operator.

   The above proposed exploration work is in elaboration and extenuation of work recommended on pages 10 and 11 of the attached geologist's report, which see.

5. None.

6. | | |
|---|---|
| Combination tool shed and shelter @ $250. | $250.00 |
| Powder house and cap storage | 100.00 |
| Construction of tractor trail: | |
| Bulldozer to clear trail and pull compressor to prospect | 190.00 |
| 3 Men, cutting brush, etc. | 72.00 |
| (a) Rent - Bulldozer for stripping overburden from pegmatite for 10 days @ $80. per day | 800.00 |

7. (b) Purchase:

1 - 105 cfm Compressor	$3,500.00
1 - 55 lb. Jackhammer	400.00
50' Length Air Hose	50.00

(c) Furnished.
None.

8.

2 Laborers	4,320 hours	@ $ 1.30	5,616.00
1 Driller	2,160 hours	@ 1.60	3,456.00
1 Foreman	1,080 hours	@ 2.25	2,430.00
Payroll taxes and insurance		@ 6% (estimated)	690.12

NOTE: Foreman"s time indicated above represents half-time duty only as he will also be in charge of work on an adjacent property (Prospect #1) which is being covered under a separate application.

9.

Steel Air Line, 1" dia., 300'		@ $ 10.00	30.00
Drill Steel 4 - 2' x 1"		@ 3.75	15.00
Drill Steel 4 - 4' x 1"		@ 5.00	20.00
Drill Steel 4 - 6' x 1"		@ 6.25	25.00
Drill Steel 4 - 8' x 1"		@ 7.50	30.00
Carbide-tipped bits - 4 - 1½") 4 - 1-5/8") 4 - 1-3/4") 4 - 1-7/8")		@$14.00	224.00
Steel Bits - 100 - 2") 100 - 1-7/8") 100 - 1-3/4") 100 - 1-5/8")		@ 0.40	160.00
1 Blasting Machine			35.00
1 Galvanometer			15.00
1 Wheelbarrow, rubber tired			25.00
6 Shovels, round point			15.00
1 12-lb. Sledge			4.25
2 36" Wrecking Bars			2.50
4 Picks			10.00
1 18" Stillson Wrench			5.50
1 12" Stillson Wrench			3.35
Miscellaneous small tools and other items			80.90
2,000 Gallons Gasoline	@$0.28		560.00
2,000 lbs. Dynamite, 40% std. gelatin		@ $0.22 cwt.	440.00
500 Caps, electrical			75.00
2 - 250' rolls leading wire			15.00
			$19,350.62

10. (a) $1,935.06
(b) Yes.

11. None.

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMA-2106
Metal or Mineral
Date Received 9-25-51
Amount $
Participation (Government %)

Name and address of applicant

[illegible] Development, Inc.
P. O. Box 2162
Reading, Pennsylvania

Date [illegible] 24, 19[illegible]

If you have already filed MF-100, give date filed None, type of assistance requested 2106,

DMA Docket Number (if available)

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted; and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 25 1951

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

[illegible] (Name of company)

By Otto T. Engelhart (Signature of authorized official)

[illegible] (Date)

[illegible] (Title)

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—64067-2

THE BERYLLIUM CORPORATION

XXXXXXXXX, XXXXXXXXXXXXXX

BERYLLIUM DEVELOPMENT, INCORPORATED

Grafton, New Hampshire
January 17, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 18 1952

Defense Minerals Exploratory Administration
Department of the Interior
Industrial Minerals Branch
Washington 25, D. C.

Attention: Mr. Lawrence Houk

Reference: DOCKET NUMBER - DMA 2106

Gentlemen:

In lieu of the Landlord's Subordination Agreement, Form #F-202, called for in the Application for an Exploratory Loan for beryl ore, Beryllium Development, Incorporated wishes to guarantee that they will assume and does hereby assume all the obligations of the Subleasee under the Exploration Project Contract to make repayment to the United States of America according to the terms of the said contract.

Beryllium Development, Incorporated is a holder of a sublease from Whitehall Company, Incorporated, Keene, New Hampshire, copy of which is attached to Docket DMA 2106. Whitehall Company, Incorporated is in turn the Leasee of the property involved from International Paper Company, 220 East 42nd Street, New York City, New York.

Yours very truly,

BERYLLIUM DEVELOPMENT, INCORPORATED

R. M. Quimby
Secretary

GNB:mbs

370

OCT 12 1951

Mr. McHenry Mosier, Executive Officer
DMA Field Team, Region VIII
Eastern Experiment Station
College Park, Maryland

Dear Sir:

We attach Review of Application for Exploration Assistance

Applicant Beryllium Development, Inc.

Project No. DMA-2106X

Commodity Beryl

Amount $ 90% of $19,350.00

Please expedite the consideration of this application with particular reference to the points raised in the attached "Review".

Very truly yours,

Tom Lyon, Chairman
Coordinating Committee

Bureau of Mines

U.S. Geological Survey

FILE COPY
SURNAME:

Barr
app

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

370

OCT 12 1951

a.E.C.

Beryllium Development, Inc.
P. O. Box 1462
Reading, Pennsylvania

Subject: DMA-2106X - Beryl

Gentlemen:

Your application is being referred to Mr. McHenry Mosier, Executive Officer, DMA Field Team, Region VIII, Eastern Experiment Station, College Park, ~~Maryland, for~~ further information.

Sincerely yours,

SIGNED
Tom Lyon, Director
Supply Division

JF 10/12

RWASKEY:mp
10-9-51
cc: Field Team, Region VIII (2)
DMA Docket File
Mr. Barr

Mr. G. N. Broome, Executive Asst.
P. O. Box 1462
Reading, Pennsylvania

Subject: DMA-2106 = Prospect No. 2
Re: Exploration Loan
~~#1 Prospect~~

My dear Mr. Broome:

This will acknowledge receipt of your application dated September 24, 1951 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMA-2106 and referred to the Industrial Minerals Branch.

Kindly refer to DMA-2106 in any future correspondence relating to your application.

Sincerely yours,

Robert E. Adams

Robert E. Adams, Chief
Reports and Records Unit

2463

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 2106

Commodity Beryl

Total Amount $19,350.62

Govt. Participation 90%

1. Name and Address of Applicant Beryllium Development, Inc. R.D. #1 Box 1146 Greenville, Penn.

2. Location of Property Oxford Co., Maine

3. Mineral or metal Beryl Is it listed in Section 9 of MO-5?

If not, application will be rejected. YES

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good Memo Attached

b) Poor

c) None

d) Don't know—needs field examination

e) Is there an alternative and favorable project? (If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes, Lessee (question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? Yes

Does the lease have sufficient time to run to cover a future productive period? Yes

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes

a) MF-201? NO

b) MF-202 Yes, Required

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* yes

d) Water (question 13)* yes

e) Power (question 13)* yes

Is a field check needed on any of these points? yes (b)

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* yes

Is a field check needed on this point? NO

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? Fairly well - However the details of ~~drilling to~~ be done after preliminary prospecting are not shown on map -
If not, are there sufficient data given so that you can describe the project? _____ If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? Yes, OK for preliminary work - details of subsequent exploration may have to be worked out later -

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? yes

If not, what part of it is? _____

Is this part a worthwhile exploration project? —

d) Are the cost estimates detailed? Fairly Well

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No Not on footage basis If so, attach a draft.

e) Are the cost estimates reasonable? Appear so

f) Should more information be requested from applicant? NO

g) Is a field examination necessary to complete Exhibit A? Check Needs

11. Exhibit B (question 23-d)*

a) Is it applicable? yes

b) If so, are sufficient data furnished? yes If so, attach a draft.

c) Is a field check needed? Check if same facilities can be used for DMH 2105 & DMA 2106

12. Exhibit C (question 23-~~e~~, f and g)*

a) Is it applicable? yes

b) Sufficient data? yes If so, attach a draft.

c) Are rents and charges reasonable? yes

d) Is a field check needed? yes Establish Needs

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? yes

b) Is the schedule adequate for the work proposed? yes

c) Is the schedule excessive for the work proposed? NU

d) Are the proposed wages and salaries reasonable? yes

e) Is a field check needed? Establish Needs

14. Exhibit E (question 23-c)*

a) Is it applicable? NO

b) Sufficient data? —

c) Reasonable? —

d) Field check needed? —

15. In your judgment, can the proposed work be done in the proposed time? Yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? Establish amount of work justified and check actual needs - Work may be set up in two stages if that appears desireable - Work shown on map apparently intended to be preliminary only - Secure as definite a plan as possible for subsequent work -

SEE DMA 2105

Reviewed by: B Wadley

Date 10/9/51

97692

IN REPLY REFER TO:

G-MD-WRG

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

October 8, 1951

Memorandum

To: Robert Waskey, DMA

From: W. R. Griffitts, USGS

Subject: Application DMA-2106 from Beryllium Development, Inc., for beryl exploration in Oxford County, Maine.

This application, DMA-2106, is for exploration of pegmatites near Newry, Maine, for beryl. Feldspar, spodumene, amblygonite, scrap mica and possibly sheet mica may be obtained as by-products. The deposits seem to have some chance as beryl producers, hence should be explored. It is suggested, however, that the field team examine the property.

The application is exceptionally well prepared. The geologic report by McNair leaves few deficiencies in the data needed. It would be well, however, to determine roughly what part of the beryl estimated to be present is recoverable. It is noted that crystals as small as 1/4 inch are used in computing reserves. Such crystals are not recoverable by the usual methods. It would, perhaps, be well to consider sinking a shallow test pit in the rock with large spodumene crystals that is near the east end of the No. 2 prospect. Beryl in that rock probably would be moderately coarse grained and the spodumene will probably have to be considered as a by-product in estimating the profitability of mining the deposit, a few man-days' work with the equipment that would already be at the site would suffice.

It is suggested that the application be referred to the field team to:

1) Determine the amount of recoverable beryl

2) Evaluate the desirability of exploring the coarse spodumene-bearing pegmatite

3) Check the program proposed by the applicant for trenching and for testing of samples

4) Estimate the mineral proportions of the pegmatite.

W R Griffitts

W. R. Griffitts

THE BERYLLIUM CORPORATION

READING, PENNSYLVANIA

September 24, 1951

DMA-2106

Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Gentlemen:

Enclosed herewith is our Application for Aid for an Exploration Project Pursuant to Mineral Order 5, Under Defense Production Act of 1950, Form MF-103, in quadruplicate.

In lieu of information that would be contained on Form MF-100, we refer you to our application for exploration project dated April 27, 1951, and bearing Doc. No. DMA-1115.

This application is made for Beryllium Development, Inc., a wholly owned subsiary of The Beryllium Corporation.

Yours very truly,

THE BERYLLIUM CORPORATION

G. N. Broome

G. N. Broome
Executive Assistant

GNB:mbs

Enclosure

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 25 1951

THE BERYLLIUM CORPORATION
P. O. BOX 1462
READING, PENNA.

September 24, 1951

Dm A- 2106

Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Gentlemen:

Enclosed herewith is our Application for Aid for an Exploration Project Pursuant to Mineral Order 5, Under Defense Production Act of 1950, Form MF-103, in quadruplicate.

In lieu of information that would be contained on Form MF-100, we refer you to our application for exploration project dated April 27, 1951, and bearing Doc. No. DMA 1115.

This application is made for Beryllium Development, Inc., a wholly owned subsiary of The Beryllium Corporation.

Yours very truly,

THE BERYLLIUM CORPORATION

G. N. Broome

G. N. Broome
Executive Assistant

GNB:mbs

Enclosure

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 25 1951

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMA 4-2106
Metal or Mineral
Date Received 9-25-51
Amount $
Participation (Government %)

Name and address of applicant

[illegible] Development, Inc.
P. O. Box 1162
[illegible], Pennsylvania

Date [illegible] 1951

If you have already filed MF-100, give date filed [illegible], type of assistance requested 2106,

DMA Docket Number (if available)

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 25 1951

16—64067-2

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

[illegible] (Name of company)

By Otto T. Engelhart
(Signature of authorized official)

[illegible] (Date)

President
(Title)

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—64067-2

BERYLLIUM DEVELOPMENT, INC.
P. O. Box 1462
Reading, Penna.

NO. 2 PROSPECT

1. (a) Copy of lease attached. International Paper Company data to be submitted later.

   (b) See lease attached.

   (c) Description of exact parcel to be explored is given in attached geologist's report and in Fig. 4 of said report. A subordination agreement or a letter from applicant guaranteeing the government's interest will be submitted at an early date.

2. (a) Beryl, spodumene, feldspar, scrap and sheet mica, quartz, amblygonite, and columbite-tantalite.

   (b) See attached geological report and maps. Need not be returned.

3. (a) See pages 10 and 11 in geologist's report. Total cost of project is estimated at $19,350.62.

   (b) Probably start May 15, 1952 or earlier as weather permits; estimated duration of project from start to finish about twelve months working time or two seasons (May 15 to November 15).

4. See Fig. 4 of attached geologist's report. It is proposed to cut 7 trenches as shown for an aggregate length of about 425 feet. The trenches will average about 3 feet in width by 6 feet in depth. It is further proposed to strip the overburden from the pegmatite over the entire area of cross-hatching shown in Fig. 4. Overburden is estimated to range from 1 - 5 feet in thickness. Subsequent to stripping it is highly probable that further exposures of beryl will be uncovered necessitating further cutting of trenches and test pits; the location or extent of any such operations cannot be predicted at this time. The position of the trenches shown in Fig. 4 is diagrammatic in part; their exact location will be confined to spots mutually agreeable to the Government Field team and the operator.

   The above proposed exploration work is in elaboration and extenuation of work recommended on pages 10 and 11 of the attached geologist's report, which see.

5. None.

6. | | |
|---|---|
| Combination tool shed and shelter @ $250. | $250.00 |
| Powder house and cap storage | 100.00 |
| Construction of tractor trail: | |
| Bulldozer to clear trail and pull compressor to prospect | 190.00 |
| 3 Men, cutting brush, etc. | 72.00 |

7. (a) Rent - Bulldozer for stripping overburden from pegmatite for 10 days @ $80. per day — 800.00

7. (b) Purchase:

1 - 105 cfm Compressor	$3,500.00
1 - 55 lb. Jackhammer	400.00
50' Length Air Hose	50.00

(c) Furnished.
None.

8.

2 Laborers	4,320 hours	@ $ 1.30	5,616.00
1 Driller	2,160 hours	@ 1.60	3,456.00
1 Foreman	1,080 hours	@ 2.25	2,430.00
Payroll taxes and insurance		@ 6% (estimated)	690.12

NOTE: Foreman"s time indicated above represents half-time duty only as he will also be in charge of work on an adjacent property (Prospect #1) which is being covered under a separate application.

9.

Steel Air Line, 1" dia., 300'	@ $ 10.00	30.00
Drill Steel 4 - 2' x 1"	@ 3.75	15.00
Drill Steel 4 - 4' x 1"	@ 5.00	20.00
Drill Steel 4 - 6' x 1"	@ 6.25	25.00
Drill Steel 4 - 8' x 1"	@ 7.50	30.00
Carbide-tipped bits - 4 - 1½") 4 - 1-5/8") 4 - 1-3/4") 4 - 1-7/8")	@$14.00	224.00
Steel Bits - 100 - 2") 100 - 1-7/8") 100 - 1-3/4") 100 - 1-5/8")	@ 0.40	160.00
1 Blasting Machine		35.00
1 Galvanometer		15.00
1 Wheelbarrow, rubber tired		25.00
6 Shovels, round point		15.00
1 12-lb. Sledge		4.25
2 36" Wrecking Bars		2.50
4 Picks		10.00
1 18" Stillson Wrench		5.50
1 12" Stillson Wrench		3.35
Miscellaneous small tools and other items		86.90
2,000 Gallons Gasoline	@$0.28	560.00
2,000 lbs. Dynamite, 40% std. gelatin	@ $0.22 cwt.	440.00
500 Caps, electrical		75.00
2 - 250' rolls leading wire		15.00
		$19,350.62

10. (a) $1,935.06
(b) Yes.

11. None.

THE BERYLLIUM CORPORATION
P. O. BOX 1462
READING. PENNA.

September 24, 1951

DMA-2106

Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Gentlemen:

Enclosed herewith is our Application for Aid for an Exploration Project Pursuant to Mineral Order 5, Under Defense Production Act of 1950, Form MF-103, in quadruplicate.

In lieu of information that would be contained on Form MF-100, we refer you to our application for exploration project dated April 27, 1951, and bearing Doc. No. DMA-1115.

This application is made for Beryllium Development, Inc., a wholly owned subsiary of The Beryllium Corporation.

Yours very truly,

THE BERYLLIUM CORPORATION

G. N. Broome

G. N. Broome
Executive Assistant

GNB:mbs

Enclosure

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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SEP 25 1951

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

Not To Be Filled in by Applicant

Docket No. DMA 4-2106
Metal or Mineral
Date Received 9-25-51
Amount $
Participation (Government %)

Name and address of applicant

Beryllium Development, Inc.
P. O. Box 1162
Reading, Pennsylvania

Date September 24, 1951

If you have already filed MF-100, give date filed None, type of assistance requested 2106,

DMA Docket Number (if available)

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 25 1951

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

16—64067-2

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

11. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

[illegible] ..... (Name of company)

By Otto T. Engelbart ..... (Signature of authorized official)

[illegible] 24, 19[illegible] ..... (Date)

[illegible] ..... (Title)

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—64067-2

GEOLOGICAL REPORT ON THE BERYL-BEARING PEGMATITES OF THE NEWRY-ANDOVER AREA, MAINE

By Andrew H. McNair

Introduction:

The Newry-Andover area in Oxford County, Maine has had sporadic mining of its pegmatites since the 1860's, when small cuts were made in several deposits in search for green tourmalines and aquamarines that could be used as gems. The Nevel mine, shown on Figure 2, was operated by Richard Nevel for the General Electric Company during the summers of 1927, 28 and 29, when pollucite, a complex ore of caesium, was mined. The production according to George Crooker of Andover, Maine, for 1928 was 30 tons of pollucite having an estimated value of 40,000 dollars a ton. During the work in the late twenties many beautiful and rare pegmatite minerals were obtained and Newry became a famous mineral locality. Although the mine has not been operated since 1929, several hundred people visit the mine dump during the summer season to collect specimens.

Feldspar mining has been limited to the Whitehall feldspar mine which was opened by the United Feldspar Company in the late 1930's. It was subsequently obtained by the Whitehall Company, who worked the mine for feldspar in 1948 and 1949. In addition to feldspar, minor quantities of beryl, spodumene, amblygonite and scrap-mica were obtained.

The Whitehall Company carried out an intensive search for pegmatites in the Newry-Andover area from 1944 to 1948,

when prospectors searched the hills and woods for pegmatite outcrops. The more promising pegmatites were scraped of their overburden and numerous prospect pits were made in search of coarse-grained pegmatites that might contain commercial quantities of feldspar. In the course of this work they discovered many pegmatites that contained small or widely scattered beryl crystals. Only two prospects were found that contained crystals in any quantity and these constitute the deposits described and evaluated in this report.

Location of area:

The general area containing the beryl prospects is owned by the International Paper Company of Glens Falls, New York, who leased the mineral rights to the Whitehall Company of Keene, New Hampshire. The Whitehall Company in turn has granted the Beryllium Corporation a sub-lease on the mineral rights of all of the area owned by International Paper in the town of Newry east of Bear River and all of the drainage area of Howe Brook in the town of Andover, except for an area of approximately ten acres surrounding the Whitehall Feldspar mine. The location of the lease area is shown in Figure 1 accompanying this report.

Accessibility:

The geographic location of the prospects is indicated on Figure 2. The No. 1 prospect is reached from hard

surfaced Route 5 by an abandoned mine road 0.87 miles long that at present cannot be travelled except possibly by a four-wheel drive vehicle; and by a foot path 0.40 miles long. The abandoned mine road is steep and even after being filled and graded can be used only by light four-wheel drive trucks or by 6" by 6" trucks. The foot path from the Whitehall Feldspar mine follows a gentle grade and could be transformed into an acceptable truck road by being graded with waste rock from the dump of the feldspar mine.

The No. 2 prospect is located high on the northeast ridge of Plumbago Mountain. It can most easily be reached on foot by a steep climb from the No. 1 prospect. Mining equipment could be moved to the prospect by using the logging road that ascends Howe Brook and by a caterpillar tractor trail up the south branch of Howe Brook used by the Whitehall Company when the prospect pits a short distance north of the No. 2 prospect were made. The approximate route of this trail is shown on Figure 1.

Mining Conditions:

Deep snow, ice and cold weather normally prohibit both the use of access roads and the efficient use of machinery between November 15 and May 15, although it is reported that during exceptionally mild winters, snow and cold weather do not develop in the area until early in December.

Pegmatites and Beryl Deposits:

Seven pegmatites occur in the area mapped. The approximate size and shape of these bodies is shown on Figure 2. All appear to be irregularly lens-shaped and to have moderate dips. They occur on the crests, flanks and summits of hills and from their surface expression appear to be relatively thin. None of the bodies are well exposed at the surface although overburden is rarely more than a few feet thick. For the most part, where they can be observed, the pegmatites consist of fine to medium-grained perthite, quartz, plagioclase and muscovite. Areas of large crystals with segregations of commercially important minerals are not abundant.

Prospect No. 1:

The No. 1 prospect is lens-shaped in plan. It appears to dip south-east at a somewhat steeper angle than the slope of the hillside on which it crops out. It is approximately 630 feet long and 400 feet wide. It is not well exposed and is covered except for relatively small and scattered outcrops by a thin veneer of forest soil and thin glacial drift. Because of the relatively few exposures and the lack of mine workings it is difficult to determine the internal arrangement and structure of the body.

The apparent structure from the outer part to the center is as follows:

(1) An outer border zone 2 to 6 inches thick, consisting of quartz, muscovite and fine-grained feldspar is in contact with the country rock.

(2) The wall zone is fine-grained perthite, quartz, muscovite and fine-grained graphic granite. This zone appears to range from 2 to 6 feet in thickness and forms most of the upper surface area of the deposits.

(3) An intermediate zone contains scattered clusters of large beryl crystals in relatively coarse-grained quartz, muscovite and perthite. This zone appears to contain the only mineable concentration in the deposit. It is exposed only at four places. The most important exposures are shown on Figure 3 representing the northwest part of the pegmatite. The largest area contains 16 blue-green to gray beryl crystals ranging up to 8 inches in diameter and up to 20 inches long. The second area contains 6 blue-green to gray crystals up to 14 inches in diameter and up to 24 inches long. Total beryl content of both exposures is estimated at four tons, assuming that the zone is one foot thick. From the large size of the crystals it would appear that the zone is more than a foot thick. The entire zone does not contain beryl concentrations as rich as the ones indicated on Figure 3 because the exposed pegmatite south of the largest beryl-bearing area contains no visible trace of beryl.

Two small exposures and several loose blocks of the beryl-bearing zone occur approximately 200 feet northeast of the area shown in Figure 3. The zone here appears to be only 8 to 10 inches thick and contains abundant small crystals from one-half to 4 inches in diameter and 2 to 16 inches long. Surface exposures do not show the relation of these outcrops to the larger exposures to the south. The most likely explanation is that the zone has been eroded away in the area between the two beryl concentrations.

Estimates of Reserves of No. 1 Prospect:

Lack of information on both the extent and concentration of beryl crystals in the deposit prevents an accurate estimate of reserves.

Proven reserves (of beryl in sight) is approximately 4 tons. Probable reserves, assuming that the beryl-bearing zone is present throughout the area indicated as probable underground extent on Figure 3; that the zone averages 18 inches in thickness; and that it contains one half the beryl concentration shown in the two places where it is exposed, is approximately 162 tons.

Additional reserves may be present in the pegmatite. These would largely be dependent on whether the beryl-bearing zone has been eroded from the deposit north and east of the area shown on Figure 3, as well as on the thickness and beryl concentration of the zone. From the

scanty information at hand from the pegmatite itself and from a knowledge of other New England beryl deposits, it seems unlikely that additional reserves would exceed 500 tons.

Recommendations on Prospecting the No. 1 Prospect:

The mining and diamond drilling of numerous pegmatites throughout the country has indicated clearly that mineral concentrations occur in zones more or less parallel to the walls of pegmatitie bodies and concentric to an inner nucleus or core. The clusters of beryl crystals exposed at the No. 1 prospect appear to be part of a fairly continuous zone that has been exposed to the surface at two places. If this is true, then prospecting and mining should be directed at tracing the beryl-bearing zone and fairly careful measurements should be made to determine the amount of beryl in it. Fortunately the zone is close to the surface and open cuts not exceeding 6 feet in depth should encounter the zone throughout the area of probable reserves.

It is recommended that two shallow open cuts be made in the deposit. One cut to extend through the beryl zone from the area of largest concentration southward toward the line marked D on Figure 3. The other cut to extend from the smaller beryl concentration toward the line marked E. If these cuts reveal that the zone contains

more than half as much beryl as is shown by present exposures, then a third cut should be made in the area northeast of the largest beryl concentration. In this way reserves can be developed as prospecting is carried out.

Bulldozing should be done in the vicinity of the two smaller beryl exposures northeast of the area in Figure 3. If the cleared ledges show additional areas of beryl, then another cut should be made in this part of the deposit.

The cleaning of cover from the pegmatite in the vicinity of the quartz core may reveal additional crystals. If this proves to be true, then an open-cut prospect should be made along the core.

Prospect No. 2:

The No. 2 prospect is shown on Figure 4. It is a thin, relatively flat sheet with a general low dip to the east. It is exposed over an east-west distance of approximately 580 feet and a north-south distance of about 300 feet. It ranges from 10 to 60 feet thick. It has an irregularly oval outcrop plan because it is covered by an erosional "island" of wallrock.

The apparent internal structure of the pegmatite from the top to the central core is as follows:

(1) A thin outer zone of fine-grained quartz-muscovite pegmatite is in contact with wall rock. This zone contains much granular black tourmaline in places.

(2) The wall zone consists of medium-grained quartz, feldspar, muscovite and minor amounts of beryl. The largest beryl concentration contains 65 grayish-white crystals ranging from one half to 5 inches in diameter in a thin sheet immediately overlying the quartz core. The beryl concentration appears to be restricted to the southwest corner of the wall zone, although it might be present at other places where the zone is now covered by overburden. Nests and pockets of large muscovite books occur in the zone and these would yield scrap mica.

(3) An intermediate cleavlandite-spodumene-muscovite zone is exposed at the south and east sides of the pegmatite. This zone should contain scattered beryl crystals and amblygonite, although only one beryl crystal was found in the zone along the south margin of the deposit. If this zone were prospected, it is likely that some of the cavities in the cleavlandite would contain green gem tourmaline. The spodumene occurs in large "logs" and in places is the most abundant constituent of the zone.

(4) The centrally located quartz core is discontinuous. Its longest exposure is at the west end of the body where it contains 27 blue-green crystals. Some of the crystals are rimmed with fine-grained albite in bands up to 2½ inches thick. The crystals range from 4 to 11 inches in diameter and from 6 to 24 inches in length. The three beryl crystals exposed in the northeast segment of the core

are white to transparent and do not have crystal outlines. They are difficult to distinguish from the quartz in which they are embedded.

Estimates of Reserves, No. 2 Prospect:

The proven reserves are estimated to be between 3/4 and 1 ton of beryl. The numerous small crystals in the wall zone occur in a sheet apparently not more than 8 to 10 inches thick. The discontinuity, as well as thinness, of the zone does not permit a larger estimate. The concentration of large crystals in the core is highest at the west outcrop and from study of present exposures appears to be lowest in the east part of the pegmatite. It is not unlikely that the core contains several hundred tons of beryl, most of this, it is believed, would occur in widely scattered crystals and could not be recovered profitably. The core itself is discontinuous and no reliable prediction can be made concerning the core in the part of the body that is now covered by wall rock. From the study of the distribution of beryl it is unlikely that large areas of the core contain substantial quantities of beryl.

Recommendations on Prospecting the No. 2 Prospect:

It is recommended that the western end of the body be stripped of its thin layer of overburden and particular attention be given the northwest corner in the hope that beryl-bearing material will be uncovered.

At least two prospect pits should be made in the quartz core concentrations between localities 1 and 4 as shown on Figure 4. These cuts should extend below as well as above the core to test the possibility of a core-margin beryl concentration. It is realized that as these cuts are extended eastward they would have to pass through more and more wall rock as they grew in this direction.

Overburden should be stripped east of the beryl concentration indicated at area 5 and shallow cuts be made to determine the thickness and beryl content.

Overburden should be stripped across the width of the pegmatite in the vicinity of A on Figure 4, and cuts made in any beryl concentration that might be disclosed by the stripping.

The open cuts in both the No. 1 and No. 2 prospects will be small, particularly in the early stages of the work. It would seem advisable, therefore, that a small crew consisting of three or four men would work to greater advantage than a larger number that would get in each others way. It would also be advantageous that one of the men be skilled at recognizing gray and white massive beryl, spodumene and amblygonite.

Summary and Conclusions:

It is unlikely that either of the two beryl prospects could be mined at a profit for beryl alone at the current market price for beryl, except for very short scaled work

aimed at robbing the exposed beryl clusters of a few tons of easily obtainable ore. Both prospects should be worked for all of the materials that could be recovered profitably from them, including feldspar, mica (largely scrap containing a small amount of sheet-mica), spodumene, amblygonite as well as rare mineral specimens.

The shortness of the season during which they could be worked and their remoteness from hard-surfaced roads argue also for efficient, well-planned work in both their prospecting and development.

The two deposits are the most promising untested prospects in New England capable of yielding hand-cobbed beryl that are known to the author. For this reason it is believed that small scale prospecting of the deposits is justified.

Respectfully submitted,

Andrew H. McNair
Hanover, New Hampshire
September 12, 1951