SOUTHERN MINERALS
INCORPORATED
(A North Carolina Corporation)
~~MORGANTON, N.~~ C.

March 8, 1952

Veterans Hospital
Ward R-2
Oteen, N.C.

Mr C.O. Mellendorf
Defense Minerals Exploration Adm.
Washington 25, D.C.

D.M.E. Docket 1002X

Dear Mr Mellendorf

Your letter of March 3rd received and accepted.

The lands we will test are all owned by the Duke Power Company and embrace the best, and possibly the only, dredgeable lands in the Carolinas - Obviously Duke Power will not lease all their 200,000 acres to any company at one time.

The political situation is such in Burke county that we would not care to spend either Government or private funds in that County.

Further, the writer is in a surgical ward scheduled for removal of giant cysts on the lungs.

We thank you for your consideration.

Very truly yours
P.R. Barbour, Pres.
Southern Minerals, Inc.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 11 1952

La

FILE COPY
SURNAME:

Thayer
Hedges
FEJohnson

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

Mr. P. R. Barbour, President
Southern Minerals Incorporated
805 West 5th Street
Winston Salem, North Carolina

Re: DMA Docket No. 1002X (Monazite)
Burke County, North Carolina

Dear Mr. Barbour:

This acknowledges receipt of your letter of February 14, 1952, in reply to ours of January 31.

It is noted that you are neither the owner nor a lessee of the lands you propose to test in the "South Mountains area in Burke, Cleveland, Catawba, McDowell, Rutherford, and other counties in North Carolina". It would appear that you propose to prospect here and there throughout such areas following which you may be able to obtain leases on certain lands.

We are not in a position to enter into an exploration contract with you under these conditions. In order to be considered for a contract, it would be required that the exploration work be performed on land owned or leased by you. It would also be required that you submit a well defined program supported by maps, detailed project costs and a Landowner's Subordination Agreement (if the ground is leased), together with a copy of the lease or leases. For your information, we are enclosing a sample copy (in blank) of an exploration project contract.

In accordance with your statements in past correspondence, and your inability to present specific information, we regret to inform you that your application as now presented must be considered as closed.

Sincerely yours,

C. O. Mittenderf (fw)

Acting Administrator
Defense Minerals Exploration
Administration

Enclosure (1)
FSSchmidt/EWEllis/FEJohnson/gla:bih
2/29/52
cc to: Docket
Admr's. Reading File
Messrs. Carlson, E.J. R-1347
Norton, J.J. R-G-232 GSA
Ellis
Schmidt
FEJohnson
Operating Committee
Regional Office VII (2)

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

700

FILE COPY
SURNAME:

Schmidt
Ellis
McCaffe
Norton

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

Mr. P. R. Barbour, President
Southern Minerals Incorporated
805 East 5th Street
Winston Salem, North Carolina

Re: Docket No. 10021 (Monazite)
Burke County, North Carolina

Dear Mr. Barbour:

This acknowledges receipt of your letter of February 14, 1952, in reply to ours of January 31.

It is noted that you are neither the owner nor a lessee of the lands you propose to test in the "South Mountains area in Burke, Cleveland, Catawba, McDowell, Rutherford, and other counties in North Carolina." It would appear, therefore, that you propose to prospect here and there throughout such areas following which you may be able to obtain leases on certain lands. Please be advised that an exploration contract may be executed only for specific places owned or leased by the applicant, and then only upon a well-defined program supported by maps, detailed project costs and a Landowner's Subordination Agreement (if the ground is leased), together with a copy of the lease or leases. For your information, we are enclosing a sample copy (in blank) of an exploration project contract.

Therefore, in accordance with your statements in past correspondence and your inability to present specific information, we regret to inform you that your application as now presented must be declined.

Sincerely yours,

~~[illegible]~~

Acting Administrator
Defense Minerals Exploration
Administration

Enclosure

FSSchmidt/EWEllis/gla 2-21-52
cc to: Adm. Reading File
Docket
Messrs. Carlson, E.J. Rm. 1347
Norton, J. J. Rm. G-232 GS
Ellis
Schmidt
Regional Office VII (2)

APPROVED:

For Bureau of Mines

For Geological Survey

2/18/gla

SOUTHERN MINERALS
INCORPORATED
(A North Carolina Corporation)
Feb. 14, 1952
MORGANTON, N. C.

DMA-1002X
(Monazite)

Defense Minerals Exploration Adm.
FEB 18 1952

r Ernest Wm Ellis, Acting Chief,
Rare and Misc. Metals Division
Defense Minerals Exploration Adm,
Washington 25, D.C.

Dear Mr Ellis:—

I have the right to prospect, augur drill & test by core drilling any of Duke Power Company lands in North & South Carolina & Georgia. The right to core test is along highways & bridges that cross the Company land.

I cannot lease until after the land has been tested and an estimate of financial return has been made to the Company. The acreage involved is in excess of 200,000 acres and is about the only land that can be dredged at an apparent profit. Several dredge companies are interested in the results of these tests.

The land is not under "applicants' control"; yet the right to test is under my control, and if the tests are good I can select and lease various tracts of land.

If this right to prospect, augur & test by core drilling can fit D.M.E. regulations or, if an exception can be made in this particular case, I am very much interested in filling an application to drill Duke Power Company lands

Sincerely yours
P. R. Barbour

FILE COPY
SURNAME:

Schmidt
Ellis
Mitt

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

JAN 31 1952

Mr. J. R. Harbour, President
Southern Minerals Incorporated
805 East Fifth Street
Winston Salem, North Carolina

Re: Docket No. [illegible]-1002
(Monazite)
Burke County, N.C.

Dear Mr. Harbour:

This will acknowledge receipt of your letter of January 21, 1952, appertaining to the above captioned project which has received careful consideration.

Concerning your application of June 27, 1951, it appears from your correspondence with Mr. Weston Mourret, that you planned to submit a new application. This was to be based on definite suggestions by him in his letters of August 7th, and 23rd, and September 13, 1951, to guide you in modifying your original application.

It is our thought that these letters of Mr. Mourret answer any questions in your letter of January 21, 1952. No revised or new application has been received, though Mr. Mourret's last letter to you was dated September 13, 1951, at which time he returned your maps as requested, and provided you with the necessary forms. He also assured you that if all questions were properly answered as per his advice there would be no undue delay in processing your application.

If there is any information in the past correspondence that is not clear or if any additional information is needed we would be pleased to assist you in any way possible. However, if we do not receive a new application as stated in your letter of August 19, 1951, within 30 days we will assume you have no further interest in the project and will then consider the docket closed.

Sincerely yours,

1/31/52

Ernest W. Ellis, Acting Chief
Rare and Irc. Metals Division
Defense Minerals Exploration
Administration

ESchmidt/jem
1/30/52
cc to: Adm. Reading File
Docket
Messrs. Carlson, J Km. 1347
Norton, JJ Km. G-228 C.S.
Ellis
Schmidt
Field Team, Reg. VII (2)

glu 1/25/52

SOUTHERN MINERALS
INCORPORATED
(A North Carolina Corporation)
~~MORGANTON, N. C.~~

DMA.1002X

Jan. 21. 1952

805 West 5th St
Winston Salem. N.C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 25 1952

Mr Weston Bourret, Chief
Minor and Rare Metals Branch,
Defense Minerals Administration
Washington 25, D.C.

Dear Mr Bourret:

I can lease lands in the headwaters areas quite easily. But there is little need to test this land because one can go into production without testing.

The intermediate areas are hard to lease as I learned while leasing for Goldfields Consolidated - Callahan Zinc head - C. Tennant & Son in 1948. These areas are too deep to work by hand and too shallow to dredge.

I have the right to prospect & to drill for minerals on about the only dredgable areas in N & S Carolina & Georgia under one ownership. Millions of yards of deep ground in the right drainage areas. But I feel sure these rights will not qualify for funds under D. M. A. Regulations. Am I right?

Yours truly
P.R. Babson

RECEIVED
JAN 23 3 26 PM '52
DEFENSE MATERIALS
PROCUREMENT AGENCY

FILE COPY
SURNAME:

Gordon Bourret

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

SEP 13 1951

a.e.c

Mr. P. M. Barbour, President
Southern Minerals, Inc.
Caldwell Hotel
Morganton, N. C.

Re: Southern Minerals, Inc.
Burke County, N. C.
Monazite - DMA 1002X

Dear Mr. Barbour:

As requested by your letter of September 5, 1951, we herewith return to you all maps received by this office from you, as follows:

One copy - Land owners on Silver Creek
One copy - Property of J. A. Hurt
One copy - Silver Creek Placers
One copy - Soil Map, Burke County
One copy - Professional Paper 213, Plate 14

We also enclose five copies each of forms MF-100 and MF-103 which you may use in submitting your revised application in quadruplicate, the extra copies being for your files. You will note that form MF-103, (revised June 1951), differs from the old form, but if all questions are answered clearly and fully, with four copies of everything requested therein, there should be no undue delay in processing your application.

Yours very truly,

Weston Bourret

Weston Bourret, Chief
Minor and Rare Metals Branch

Enclosures
EGordon/ch 9-10-51
cc: Adm. Reading File
Lyon
Bourret
Kline - Bluemont, Va.
Norton - USGS
Field Team - VII
DMA docket file

J79/13

SOUTHERN MINERALS
INCORPORATED
(A North Carolina Corporation)
Caldwell Hotel
MORGANTON, N. C.

September 5,1951

Mr Weston Bourret,Chief,
Minor and Rare Metals Branch,
Defense Minerals Administration,
Washington 25,D.C.

DMA-10027
Monazite

Dear Mr Bourret;

In order to more effectually answer the questions you emphasize in your letter of August 23rd,would it be too much trouble to return the maps I sent that accompanied the original request as well as those I sent in June ?

Thank you.

Very truly yours,
P.R. Barbour
P.R.Barbour

DEFENSE MINERALS
ADMINISTRATION
WASHINGTON, D.C.
SEP 10 7 59 AM '51

330

FILE COPY
SURNAME:

Bourret

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

AUG 23 1951

Mr. P. E. Barbour, President
Southern Minerals Incorporated
605 West 5th Street
Winston Salem, North Carolina

Re: Southern Minerals Inc.
Burke County, North Carolina
Monazite - DMA-1002X

Dear Mr. Barbour:

A.E.C.

Receipt of your letter of August 19, 1951, is hereby acknowledged.

We shall be glad to consider your revised application when it is completed. Please answer the questions on form MF-103 in as great detail as possible, with particular attention to providing clear and specific replies to questions 21, 22, 23 and 24, together with a map showing location of proposed test openings on ground under your control.

Provided your application is approved, a reasonable estimated cost covering reduction of samples would be allowable and should be covered in your reply to question 23. Thus, it would qualify for inclusion in the general arrangement under the 90% participation.

Dr. John B. Mertie, Jr's. work on monazite in the South Mountain area has not yet been printed.

Yours very truly,

SIGNED

Weston Bourret, Chief
Minor and Rare Metals Branch

JF 8/23

EGordon/ch 8-22-51

cc: Adm. Read. Files - Reports and Records - Lyon - Bourret - Norton
Kline - Mt. Weather, Bluemont, Va. - DMA docket file

DMA - 1002

File No. 02905

SOUTHERN MINERALS
INCORPORATED

(A North Carolina Corporation)

Caldwell Hotel
MORGANTON, N.C.

August 19, 1951

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 21 1951

Mr Weston Bourret,
Chief, Minor and Rare Metals,
Defense Minerals Administration,
Washington 25, D.C.

Dear Mr Bourret;

Thanks very much for your recent letter regarding our application for exploration funds.

In a very short time our application will be re-submitted along the lines you suggest, with definite data, maps, locations of holes, copies of leases, etc.

The original request was filed in advance of the printing of the forms and did include a great deal of machinery, because there is such a lack of such machinery in this area.

The day after I got your letter I went to the N.C. State College-T.V.A. laboratory in Asheville at 180 Coxe Avenue and talked to Mr Banks the chief engineer. About all the equipment needed for reduction of samples in in this laboratory and we believe we can get the full cooperation of Dr Stuckey, the State Geologist.

I suggested that the work could be done on a man-hour basis and that possibly the D.M.A. would pay 90%. Is this assumption correct ?

If, then we could get a jeep with an augur drill we could explore and test extensively. We may be able to locate one that can be contracted. Drilling in these sands is ineffective and inaccurate; auguring would be more successful.

Dr John B. Mertie Jr's work on monazite in the South Mountain area may now be printed. He told me it would go to the G.P.O. in April. I would certainly like to get several copies. Could you send me one or two ?

It appears that the average monazite content per yard is about 5 pounds, which at 17.5¢ per pound is some 87.5¢ per yard. The gold content will be about 18¢ per yard on Silver creek at least.

The heavy sand content will probably run around 25 pounds per yard. Five pounds in monazite; five pounds in magnetite; five pounds in zircon, and about five pounds in ilmenite. The balance will contain about 1 pound chromite and the rest in "opaque black sands", garnet, corundum, allanite, fergusonite and other minerals.

Our complete re-submission of the request for exploration funds will be in your hands in a short time and thanks very much for the opportunity of submitting it again.

Very truly yours,

P. R. Barbour

330
FILE COPY
SURNAME:

Gordon Bourret.

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

AUG 7 1951

Mr. P. E. Barbour, President
Southern Minerals Inc.
805 West 5th Street
Winston Salem, North Carolina

Re: Southern Minerals Inc.
Burke County, North Carolina
Monazite, DMA-1002x

Dear Mr. Barbour:

Your application of June 22, 1951, for an exploration project, DMA-1002, in the sum of $63,382, for government participation of $57,043.80 has been reviewed by the Minor and Rare Metals Branch of the Supply Division.

We regret to advise that your application in its present form should be denied, chiefly because of paucity of definite data pertaining to the precise ground you propose to explore, location, spacing and probable depth of your proposed drill holes and trenches, together with supporting evidence as to the approximate monazite content per cubic yard. Secondarily, you propose purchase of much more equipment than normally required for such exploration, yet no equipment not definitely needed for the exploration alone may be considered in connection with an exploration project. It is possible that arrangements could be made locally to contract the necessary drilling and trenching, as well as reduction of samples taken, thus effecting the project more economically.

We further advise that projects of this nature may be considered only on ground under applicant's control. Also, we do not find copies of your leases with your letter of April 5, 1951. A map showing the actual area of placer ground under your control, with specific information on thickness and any known assays, would be of great assistance and enable us to decide whether a field examination is warranted.

We suggest that you resubmit your project along the lines indicated above, and enclose five copies of form MF-103 and copy of form MO-5 as amended, calling your attention particularly to Section 4 thereof.

Yours very truly,

/s/ Weston Bourret

Weston Bourret, Chief
Minor and Rare Metals

Enclosure
EGordon/mh 8-7-51

cc: Adm. Read. File
Kline
Field Team, VII
DMA docket files
Reports & Records
Yates, USGS
Bourret

IN REPLY REFER TO:

G-MD

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

July 31, 1951

Memorandum

To: Weston Bourret

From: Robert Yates

Subject: Docket No. 1002x Monazite (placer)

The application of Southern Minerals Incorporated is the formal request on form MF-103 that follows up the original "informal application" by letter dated April 5, 1951. On form MF-103 the applicant refers to this letter for information that is not restated, consequently MF-103 and letter of April 5 must be reviewed together. Mr. Lyon, in reply to the letter of April 5, suggested that the applicant restrict his application "to one or two of the most favorable localities at the outset". This the applicant has done in part, by restricting the application to land in Burke County, N. C. and more specifically to the "leased land on Henry Fork and lands owned by Duke Power Company." Even with this it is impossible to tell from the maps submitted the area of placer land that will be explored.

There is no real plan of exploration. Drill holes and trenches are proposed and roughly located on the maps but there is a vagueness about the spacing of the same and nothing about their length or probable depth.

The writer reviewed the original application and recommended rejection on the basis of inadequate information. Nothing in the new application changes this recommendation. However, as the applicant intends to explore in an area known to have been placered for monazite, the application cannot be lightly disregarded. A more favorable impression would be had, if the operator would present a map showing the actual area of the placer ground and some specific information on thickness so there would be some concept on volume of material. If this is done, there might be some justification for a field examination.

On the other hand, the applicant's proposed purchase of an $8,000.00 magnetic separator for removing magnetic minerals from the sample concentrates obtained by only $12,000.00 worth of labor is way out of line. I might add that the purchase of crushing equipment, to the tune of $6,000, for exploring for placer monazite indicates either lack of knowledge of placer deposits - or an attempt to obtain equipment for unrelated purposes.

Robert Yates

Robert C. Yates

FILE COPY
Surname:
G-MD

Norton

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

July 31, 1951

Memorandum

To: Weston Bourret

From: Robert Yates

Subject: Docket No. 1002x Monazite (placer)

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The writer reviewed the original application and recommended rejection on the basis of inadequate information. Nothing in the new application changes this recommendation. However, as the applicant intends to explore in an area known to have been placered for monazite, the application cannot be lightly disregarded. A more favorable impression would be had, if the operator would present a map showing the actual area of the placer ground and some specific information on thickness so there would be some concept on volume of material. If this is done, there might be some justification for a field examination.

On the other hand, the applicant's proposed purchase of an $8,000.00 magnetic separator for removing magnetic minerals from the sample concentrates obtained by only $12,000.00 worth of labor is way out of line. I might add that the purchase of crushing equipment, to the tune of $6,000, for exploring the placer monazite indicates either lack of knowledge of placer deposits - or an attempt to obtain equipment for unrelated purposes.

cc: DMA Files
Dir. Reading, Rm. 4212
Reading, Rm. 4212
Norton

Robert Yates

RYates:jr
G: 7/31/51

FILE COPY
SURNAME:

Bourret.

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

May 31, 1951

Mr. Webster
Senator McCarran's Office
Room 409 Senate Office Building
Washington 25, D. C.

Dear Mr. Webster:

Enclosed herewith is a copy of our letter of May 25, 1951, to Mr. P. R. Barbour, of Southern Minerals, Inc., which you requested by telephone message to my office.

Yours very truly,

/S/ ad

Weston Bourret, Acting Chief
Minor and Rare Metals Branch

Bourret 1002

FILE COPY
SURNAME:

Bourret

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

May 25, 1951

Mr. P. H. Barbour
President
Southern Minerals, Inc.
805 West 5th Street
Winston Salem, North Carolina

Re: Henry Fork Catawba
and South Mountains Monazite
DMA - 1002

Dear Mr. Barbour:

Your letter application of April 5, 1951, requesting government assistance in the amount of $63,382 to explore the monazite placers in the South Mountain areas of Burk, Cleveland, Catawba, McDowell, Rutherford and other counties in North Carolina, has been referred to this office.

At the time your application was received, the Defense Minerals Administration had not worked out the details of the exploration program. In this connection, we are pleased to enclose herewith press release of May 14, which you will find explains in some detail the principal aspects of the program. In the case of monazite, please note that the ratio of government participation is 90% of the cost on approved projects.

We are enclosing herewith two copies of the exploration application form MF-103; your completed application should be submitted in quadruplicate and all questions answered fully and concisely. We wish to stress the importance of answering questions 21 and 22 under the heading "Exploration," and indicate on your supporting maps the location of proposed test pits or drill holes you plan putting down in order to test the gravels. Also, I would suggest that you should tie this proposition down to one or two of the most favorable localities at the outset, rather than spreading out over so many counties.

Should you require further advice or assistance you may care to contact the nearest DMA field office, which in your instance is Mr. Robert Laurence, Executive Officer, Region VII, Post Office Building, Room 13, Knoxville, Tennessee.

Yours very truly,

Tom Lyon

Tom Lyon, Director
Supply Division

WBourret/ad
cc: Adm.Read.File
Dept. Adm.
Exec. Sec.
Field Team, VII
M. H. Kline
Hosted, USGS

Enclosure

Files Mr.Bourret Kaiser, USGS

FILE COPY
SURNAME:

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

April 17, 1951

Mr. P. R. Barbour, President
Southern Minerals Inc.
Morganton, North Carolina

Subject: DMA-1002 X
Re: Exploration Loan
Henry Fork, Catawba River
and South Mountain Project

My dear Mr. Barbour:

Receipt is acknowledged of your application and attachments of April 5 from the SOUTHERN MINERALS, INC. for a Government loan under the Defense Production Act of 1950.

The application was assigned Docket Number 1002 X and referred to Mr. James A. Barr, Chief, Industrial Minerals Branch, on April 17.

In any future correspondence relating to your application, kindly refer to DMA-1002 X.

Sincerely yours,

LANDON F. STROBEL
a.e.c.

Landon F. Strobel
Executive Secretary

LFSTROBEL: aec
copies to Strobel - 2
Files
Mr. Barr
Mr. Lyon

docket file

DMA-1002 X.

Southern Minerals, Inc

Monazite.

1. Property description tells nothing of area or volume of placer ground to be exploited. Data on these fails to tell how many samples, where collected & how collected, have no bearing for evaluation.

2. Exhibit "C" — operating equipment.
List includes "jaw crusher, Denver crushing rolls, and an $8,000 magnetic separator. Such equipment has no value in an exploration project for placer monazite.

Conclusion: The property (at least in part) lies in a monazite area, but as the description gives no idea of the area of placer ground a field examination would be necessary to determine its geologic worth. However, as the loan is intended to be used for equipment of no value in monazite placer exploration, the application as it stands should be denied.

R. Stuart Yates
U.S. Geological Survey.

Form MF-
(April 195

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA-1002X

Date received 6/26/51

Participation

SOUTHERN MINERALS INCORPORATED
805 West Fifth Street
Winston Salem, N.C.

Name and address of applicant

Date June 22, 1951

FILL IN THIS BLOCK

Date of application by letter, April 5, 1951

Estimated cost $63,382.00

Mineral or metal Monazite, chromite, zircon and associated heavy minerals

Percentage of Government participation 90%

Location of mine Burke county, N.C. on Henry Fork river, Silver creek, Rock Creek and Catawba river

Date of filing MF-100 June 22, 1951

DMA Docket Number, if available DMA 1002 X

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? North Carolina corporation

*2. If a partnership, state names and addresses of partners. xx

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders. Sheet 1 attached

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. Sheet 1 attached

*5. Are you the owner or the lessee of the property? Lessee

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. xx

7. If lessee, attach a copy of the lease and state if it is in good standing. Copies of leases in letter April 5/51

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. Sheet 1 attached

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? 10% of estimated cost; sufficient to pay our part

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*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. See sheet 1 attached and maps attached

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

NOTE.—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 (*b*) 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.

*11. State the present and former names of the property, if any. Huffmans, B. A. & Milas/Duke Power Company

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. Within radius 10 miles Morganton, N.C.

*13. State source and quantity of water available for operations and its sufficiency at all seasons. Ample at all times
State amount of power to be used, rate per hour or other cost, and source. xxx

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. None

15. State in detail how the ore could be shipped and how and where milled. by rail to processing plants

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. See Bibliography in April 5th letter

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations. xx

*17. Production: Not in production

(*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly. Alluvial and elluvial deposits

(*b*) Submit available maps and assay data. Two attached in addition to those submitted 4/5/51

(*c*) Give estimated tonnage and grade of each class of ore reserves. xxx

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

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Sheet #2

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data. See bibliography together with new work by U.S.G.S and A.E.C. etc.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each.

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings. none

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings. none

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each. per letter 4/5/51

(*f*) Cost of rental for equipment which the operator proposes to rent. xx

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work. none

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above. none

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent. Testing program to begin after crops are in and machinery received

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.

SOUTHERN MINERALS INCORPORATED
(Name of company)

By Philip R. Barbour
(Signature of authorized official)

June 22, 1951
(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.

*Same as footnote on page 1.

SOUTHERN MINERALS
INCORPORATED
(A North Carolina Corporation)

Sheet #1
To accompany MF-103

MORGANTON, N. C.

1....Officers, directors and 5 largest stockholders

President, Philip R. Barbour, 805 West Fifth Street, Winston Salem, N.C.
Vice President, William H. Herbert, Robert Heller Associates Inc., Cleveland, O
(Home address; 2525 Euclid Heights Boulevard, Cleveland, O.)
Secretary, Parker W. Morris, Parker Morris Associates, 1440 West First St., Winston Salem, N.C.
Assistant Secretary, Mrs Needa C. Herbert, 2525 Euclid Heights Boulevard, Cleveland, Ohio
Treasurer, Philip R. Barbour

Directors; Parker W. Morris
Philip R. Barbour
Dr David Gayer, Bowman Gray School of Medicine, of Wake Forest College, Baptist Hospital, Winston Salem, N.C.
William H. Herbert
Rex Champion, 508 King Charles Road, Raleigh, N.C.

(Note; the above officers and directors hold office until the annual meeting July 20, 1951)

Stockholders, 5 largest are;
Philip R. Barbour
Walter H. Carter, Riddleberger and Carter, Front Royal, Virginia
H. Preston Pitts, Manager, Caldwell Hotel, Morganton, N.C.
Henry C. Newsome, Carolina Drug Co., West 4th Street, Winston Salem
Parker W. Morris

Attorneys; Craige and Craige, Wachovia Bank Bldg., Winston Salem, N.C.

2....Experience.

Philip R. Barbour was president and manager of Montana Lead, Inc., from 1926 to 1940 and in charge of corporate affairs and management of properties in Rimini, Lewis and Clark County, Montana. Also in iron mines in N. Michigan with Pickands Mather in 1924. Incorporated Southern Minerals in 1946

J. Frank West, formerly of the Bureau of Mines, and B.E.W. will be in charge of exploration program probably beginning in August or September (if application is approved) and after crops are harvested. West has had wide experience both in and out of government service. Presently he is with Sherwin Kelly of Canada.

William H. Herbert, Annapolis '34, has had wide experience with National Carbon, Great Lakes Carbon and presently is an industrial engineer with Robert Heller Associates

PROPERTY.

Duke Power Company owns some 200,000 acres and descriptions are impossible except for the various areas to be tested only in Burke county, N.C. Locations of six tracts are marked on map of Silver Creek attached. Duke owns nearly all the bottom lands on the Catawba river and we should like to test these lands to see if dredging possibilities exist.

Location of lands of Joe Hurt marked on map of Silver Creek. Mineral rights owned by Coxe-Wright-Mills family.

Location of our leased land on Henry Fork marked on maps submitted April 5, 1951; descriptions of leases in same letter.

Permission to test may be obtained from land owners; if the land tests well it may be leased. We would prefer to obtain exploration rights with option to lease if the land tests. This would obviate a great deal of time lost and expense in leasing before testing as the writer learned when leasing agent for Goldfield-Callahan Zinc and Tennant in 1948-49

SOUTHERN MINERALS
INCORPORATED

(A North Carolina Corporation)

MORGANTON, N. C.

Sheet # 2
To accompany MF-105

THE EXPLORATION

20—— We should like to explore the rivers and branches within the geographical limitd of our Atomic Energy License Number F-895 which gives us the privilege of producing and purchasing thorium bearing minerals within this area. Since, however, this area covers parts of three States and many counties in these States, it is best to confine exploration to Burke County, N.C., and more specifically to our leasedland on the Henry Fork river and to lands owned by the Duke Power Company.

The general plan is to explore the upper headwater areas of various creeks, the middle sectors of these creeks, and the lower areas in order to determine the respective tenors of the heavy sands in these areas.

All manner of drills have been used; also caissons and cribbed shafts and all have been unsuccessful.

The ground is similar to the monazite ground in Idaho in that there is very little gravel, perhaps 80% being less than 3/4 inch. We believe, therefore, that augur drill holes spaced close together across the bottom lands will give us a quick and quite accurate picture of the tenor of heavy sands in the lower and middle areas of the creeks, branches and rivers, or, in the areas that might be dredged and/or drag lined.

An augur drill mounted on a jeep, together with a mechanical panner, could soon demonstrate the general tenor of heavy sands. It would be highly portable and would do no damage to farmer's fields. Even before crops are in the jeep could test along roads that cross bottom lands.

For the upper portions of creeks and branches—the headwaters— we would like to take cuts clear across the bottom lands. For this reason we included a portable compressor, a double drum hoist, a slusher, a sump pump and a trommel-jig outfit—all to be as portable as possible. Bedrock probably will be not more than five or six feet deep, and several cuts to bedrock across the bottom lands several hundred feet apart, would demonstrate the tenor of headwater areas quickly. And these cuts would be far more accurate than drill holes or shafts.

The augur drilling and the slusher cutting could take place at the same time with two crews under Frank West, and all, of course, subject to approval of D.M.A. Field teams.

As stated before, permission to explore and test, can be obtained from owners with option to lease if the ground proves workable. Areas we should like to test with the augur drill rig are marked on the two maps attached by "augur". Areas we should like to cut with slushers are marked "cut".

Similar areas may be marked on the maps that accompanied the letter of April 5th, 1951. They will be in Burke county and on the Catawba river, the Henry Fork river, Jacob Fork river, Rock Creek, Whitener creek and others. We have no duplicates of these maps here to mark.

21.....Basis of geological factors leading us to expect to find commercial ore bodies are so numerous that they may not be listed in their entirety. Full reports on these features have been made and are referred to in the bibliography attached to our application letter of April 5th. Production records of both gold and monazite are well known and have appeared in print in North Carolina, U.S.G.S. and Bureau of Mines publications.

The simplest and most positive proof of the existance of monazite and heavy sands is by panning in nearly every river, creek and branch in the area.

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

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

DO NOT FILL IN THIS BLOCK

Docket No. 1002 X

Date received 6/26/51

Participation

SOUTHERN MINERALS INCORPORATED
805 West Fifth Street
Winston Salem, N.C.

Name and address of applicant

Date June 22, 1951

FILL IN THIS BLOCK

Date of application by letter, April 5, 1951

Estimated cost $63,382.00

Mineral or metal Monazite, chromite, zircon and associated heavy minerals

Percentage of Government participation 90%

Location of mine Burke county, N.C. on Henry Fork river, Silver creek, Rock Creek and Catawba river

Date of filing MF-100 June 22, 1951

DMA Docket Number, if available DMA 1002 X

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? --North Carolina corporation

*2. If a partnership, state names and addresses of partners. XX

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders. Sheet 1 attached

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. Sheet 1 attached

*5. Are you the owner or the lessee of the property? Lessee

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. XX

7. If lessee, attach a copy of the lease and state if it is in good standing. Copies of leases in letter April 5/51

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. Sheet 1 attached

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? 10% of estimated cost; sufficient to pay our part

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*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. See sheet 1 attached and maps attached

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

NOTE.—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 (*b*) 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.

*11. State the present and former names of the property, if any. Huffmans, B. A. & Milas/Duke Power Company

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. Within radius 10 miles Morganton, N.C.

*13. State source and quantity of water available for operations and its sufficiency at all seasons. Ample at all times State amount of power to be used, rate per hour or other cost, and source. xxx

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. None

15. State in detail how the ore could be shipped and how and where milled. by rail to processing plants

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. See Bibliography in April 5th letter

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations. xx

*17. Production: Not in production

(*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
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*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly. Alluvial and elluvial deposits

(*b*) Submit available maps and assay data. Two attached in addition to those submitted 4/5/51

(*c*) Give estimated tonnage and grade of each class of ore reserves. xxx

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

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Sheet #2

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data. See bibliography together with new work by U.S.G.S and A.E.C. etc.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each.

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings. none

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings. none

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each. per letter 4/5/51

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24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent. Testing program to begin after crops are in and machinery received

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(Name of company)

By Philip R. Barbour
(Signature of authorized official)

June 22, 1951
(Date)

President
(Title)

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*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

SOUTHERN MINERALS
INCORPORATED
(A North Carolina Corporation)

Sheet #1
To accompany MF-103

MORGANTON, N. C.

1....Officers,directors and 5 largest stockholders
President,Philip R.Barbour,805 West Fifth Street,Winston Salem,N.C.
Vice President,William H.Herbert,Robert Heller Associates Inc.,Cleveland,O
(Home address; 2525 Euclid Heights Boulevard,Cleveland,O.)
Secretary,Parker W.Morris,Parker Morris Associates,1440 West First St., Winston Salem,N.C.
Assistant Secretary,Mrs Needa C.Herbert,2525 Euclid Heights Boulevard, Cleveland,Ohio
Treasurer,Philip R.Barbour
Directors; Parker W.Morris
Philip R.Barbour
Dr David Cayer,Bowman Gray School of Medicine,of Wake Forest College, Baptist Hospital,Winston Salem,N.C.
William H.Herbert
Rex Champion,508 King Charles Road,Raleigh,N.C.
(Note;the above officers and directors hold office until the annual meeting July 20,1951)
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Walter H.Carter,Riddleberger and Carter,Front Royal,Virginia
H.Preston Pitts,Manager,Caldwell Hotel,Morganton,N.C.
Henry C.Newsome,Carolina Drug Co.,West 4th Street,Winston Salem
Parker W.Morris
Attorneys; Craige and Craige,Wachovia Bank Bldg.,Winston Salem,N.C.

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Permission to test may be obtained from land owners;if the land tests well it may be leased.We would prefer to obtqin exploration rights with option to lease if the land tests.This would obviate a great deal of time lost and expense in leasing before testing as the writer learned when leasing agent for Goldfield-Callahan Zinc and Tennant in 1948-49

SOUTHERN MINERALS
INCORPORATED

(A North Carolina Corporation)

Sheet # 2
To accompany MF-103

MORGANTON, N. C.

THE EXPLORATION

20—— We should like to explore the rivers and branches within the geographical limitd of our Atomic Energy License Number P-895 which gives us the privilege of producing and purchasing thorium bearing minerals within this area. Since, however, this area covers parts of three States and many counties in these States, it is best to confine exploration to Burke County, N.C., and more specifically to our leasedland on the Henry Fork river and to lands owned by the Duke Power Company.

The general plan is to explore the upper headwater areas of various creeks, the middle sectors of these creeks, and the lower areas in order to determine the respective tenors of the heavy sands in these areas.

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The ground is similar to the monazite ground in Idaho in that there is very little gravel, perhaps 80% being less than 3/4 inch. We believe, therefore, that augur drill holes spaced close together across the bottom lands will give us a quick and quite accurate picture of the tenor of heavy sands in the lower and middle areas of the creeks, branches and rivers, or, in the areas that might be dredged and/or drag lined.

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The simplest and most positive proof of the existance of monazite and heavy sands is by panning in nearly every river, creek and branch in the area.

B

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA-1002X

Date received 6/26/51

Participation

SOUTHERN MINERALS INCORPORATED
805 West Fifth Street
Winston Salem, N.C.

Name and address of applicant

Date June 22, 1951

FILL IN THIS BLOCK

Date of application by letter, April 5, 1951

Estimated cost $65,382.00

Mineral or metal Monazite, chromite, zircon and associated heavy minerals

Percentage of Government participation 90%

Location of mine Burke county, N.C. on Henry Fork river, Silver creek, Rock Creek and Catawba river

Date of filing MF-100 June 22, 1951

DMA Docket Number, if available DMA 1002 X

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? North Carolina corporation

*2. If a partnership, state names and addresses of partners. xx

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders. Sheet 1 attached

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. Sheet 1 attached

*5. Are you the owner or the lessee of the property? Lessee

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. xx

7. If lessee, attach a copy of the lease and state if it is in good standing. Copies of leases in letter April 5/51

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. Sheet 1 attached

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? 10% of estimated costs sufficient to pay our part

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*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. See sheet 1 attached and maps attached

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

NOTE.—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 (*b*) 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.

*11. State the present and former names of the property, if any. Huffmans, D. A. & Miles/Duke Power Company

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. Within radius 10 miles Morganton, N.C.

*13. State source and quantity of water available for operations and its sufficiency at all seasons. State amount of power to be used, rate per hour or other cost, and source. Ample at all times

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. None

15. State in detail how the ore could be shipped and how and where milled. by rail to processing plants

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. See bibliography in April 5th letter

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations. xx

*17. Production:

(*a*) If mine is in production, furnish the following information: Not in production

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
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*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly. Alluvial and elluvial deposits

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(*c*) Give estimated tonnage and grade of each class of ore reserves. xxx

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(*c*) Cost of necessary repairs to existing facilities, structures, and buildings. none

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings. none

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each. per letter 4/3/51

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(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work. none

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above. none

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent. Testing program to begin after crops are in and machinery received

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.

SOUTHERN MINERALS INCORPORATED
(Name of company)

By Philip R. Bacbaum
(Signature of authorized official)

June 22, 1951
(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.

*Same as footnote on page 1.

SOUTHERN MINERALS
INCORPORATED

(A North Carolina Corporation)

Sheet #1
to accompany [illegible]-103

MORGANTON, N. C.

1....Officers, directors and 5 largest stockholders

President, Philip R. Barbour, 805 West Fifth Street, Winston Salem, N.C.
Vice President, William H. Herbert, Robert Keller Associates Inc., Cleveland, O
(Home address: 2525 Euclid Heights Boulevard, Cleveland, O.)
Secretary, Parker H. Harris, Parker Harris Associates, 1140 West First St., Winston Salem, N.C.
Assistant Secretary, Mrs Neale C. Herbert, 2525 Euclid Heights Boulevard, Cleveland, Ohio
Treasurer, Philip R. Barbour

Directors: Parker H. Harris
Philip R. Barbour
Dr David Sayer, Bowman Gray School of Medicine, of Wake Forest College, Baptist Hospital, Winston Salem, N.C.
William H. Herbert
Ben Champion, 708 King Charles Road, Raleigh, N.C.

(Note: the above officers and directors hold office until the annual meeting July 20, 1951)

Stockholders, 5 largest are:
Philip R. Barbour
Walter R. Carter, Middleberger and Carter, Front Royal, Virginia
R. Preston Pitts, Manager, Caldwell Hotel, Morganton, N.C.
Henry C. Hawkins, Carolina Drug Co., West 4th Street, Winston Salem
Parker H. Harris

Attorneys: Craige and Craige, Wachovia Bank Bldg., Winston Salem, N.C.

2....Experience.

Philip R. Barbour was president and manager of Montana Lead, Inc., from 1935 to 1940 and in charge of corporate affairs and management of properties in Rimini, Lewis and Clark County, Montana. Also in iron mines in N. Michigan with Pickands Mather in 1924. Incorporated Southern Minerals in 1946

J. Frank East, formerly of the Bureau of Mines, and R.F.C. will be in charge of exploration program probably beginning in August or September (if application is approved) and after crops are harvested. East has had wide experience both in and out of government service. Presently he is with Oberlin Kelly of Canada.

William H. Herbert, Annapolis '34, has had wide experience with National Carbon, Great Lakes Carbon and presently is an industrial engineer with Robert Keller Associates

Property.

Duke Power Company owns over 200,000 acres and descriptions are impossible except for the various areas to be tested only in Burke county, N.C. Locations of six tracts are marked on map of Silver Creek attached. Duke owns nearly all the bottom lands on the Catawba river and we should like to test these lands to see if dredging possibilities exist.

Location of lands of Joe Hart marked on map of Silver Creek. Mineral rights owned by Cove-Knight-Ville Realty.

Location of our leased land on Henry Fork marked on maps submitted April 5, 1951; descriptions of leases in same letter.

Permission to test may be obtained from land owners if the land tests well it may be leased. We would prefer to obtain exploration rights with option to lease if the land tests. This would obviate a great deal of time lost and expense in leasing before testing as the writer learned when leasing agent for Gulfield-Callahan Zinc and Tennant in 1948-49

SOUTHERN MINERALS
INCORPORATED

(A North Carolina Corporation)

MORGANTON, N. C.

Sheet # 2
To accompany TP-103

THE EXPLORATION

20.....We should like to explore the rivers and branches within the geographical limits of our Atomic Energy License Number P-673 which gives us the privilege of producing and purchasing thorium bearing minerals within this area. Since, however, this area covers parts of three States and many counties in these States, it is best to confine exploration to Burke County, N.C., and more specifically to our leasehold on the Henry Fork river and to lands owned by the Duke Power Company.

The general plan is to explore the upper headwater areas of various creeks, the middle centers of these creeks, and the lower areas in order to determine the respective tenors of the heavy sands in these areas.

All manner of drills have been used, also caissons and cribbed shafts and all have been unsuccessful.

The ground is similar to the monazite ground in Idaho in that there is very little gravel, perhaps 5% being less than 3/4 inch. We believe, therefore, that auger drill holes spaced close together across the bottom lands will give us a quick and quite accurate picture of the tenor of heavy sands in the lower and middle areas of the creeks, branches and rivers, or, in the areas that might be dredged and/or drag lined.

An auger drill mounted on a jeep, together with a mechanical panner, could soon demonstrate the general tenor of heavy sands. It would be highly portable and would do no damage to farmer's fields. Even before crops are in the jeep could test along roads that cross bottom lands.

For the upper portions of creeks and branches-the headwaters- we would like to take cuts along across the bottom lands, for this reason we included a portable compressor, a double drum hoist, a slusher, a sump pump and a trommel-jig outfit- all to be as portable as possible. Bedrock probably will be not more than five or six feet deep, and several cuts to bedrock across the bottom lands several hundred feet apart, would demonstrate the tenor of headwater areas quickly, and these cuts would be far more accurate than drill holes or shafts.

The auger drilling and the slusher cutting could take place at the same time with two crews under Frank Kent, and all, of course, subject to approval of D.M.A. field teams.

As stated before, permission to explore and test, can be obtained from owners with option to lease if the ground proves workable. Areas we should like to test with the auger drill rig are marked on the two maps attached by "auger". Areas we should like to cut with slushers are marked "cut".

Similar areas may be marked on the maps that accompanied the letter of April 5th, 1951. They will be in Burke county and on the Catawba river, the Henry Fork river, Jacob Fork river, Jack Creek, Whitener creek and others. We have no duplicates of these maps here to mark.

21.....Basis of geological factors leading us to expect to find commercial ore bodies are so numerous that they may not be listed in their entirety. Full reports on these features have been made and are referred to in the bibliography attached to our application letter of April 5th. Production records of both gold and monazite are well known and have appeared in print in North Carolina, U.S.G.S. and Bureau of Mines publications.

The simplest and most positive proof of the existence of monazite and heavy sands is by panning in nearly every river, creek and branch in the area.

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

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

DO NOT FILL IN THIS BLOCK

Docket No. Dma - 1002 X

Date received 6/26/51

Participation

SOUTHERN MINERALS INCORPORATED
805 West Fifth Street
Winston Salem, N.C.

Name and address of applicant

Date June 22, 1951

FILL IN THIS BLOCK

Date of application by letter, April 5, 1951

Estimated cost $63,382.00

Mineral or metal Monazite, chromite, zircon and associated heavy minerals

Percentage of Government participation 90%

Location of mine Burke county, N.C. on Henry Fork river, Silver creek, Rock Creek and Catawba river

Date of filing MF-100 June 22, 1951

DMA Docket Number, if available DMA 1002 X

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? North Carolina corporation

*2. If a partnership, state names and addresses of partners? XX

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders? Sheet 1 attached

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. Sheet 1 attached

*5. Are you the owner or the lessee of the property? Lessee

6. If owner, state what claims, liens, or encumbrances, if any, are against the property? XX

7. If lessee, attach a copy of the lease and state if it is in good standing? Copies of leases in letter April 5/51

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement? Sheet 1 attached

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? 10% of estimated cost; sufficient to pay our part

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*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. See sheet 1 attached and maps attached

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

NOTE.—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 (*b*) 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.

*11. State the present and former names of the property, if any. Huffmans, B. A. & Miles/Duke Power Company

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. Within radius 10 miles Morganton, N.C.

*13. State source and quantity of water available for operations and its sufficiency at all seasons. State amount of power to be used, rate per hour or other cost, and source. Ample at all times

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. None

15. State in detail how the ore could be shipped and how and where milled. by rail to processing plants

*16. History:

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. See Bibliography in April 5th letter

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations. xx

*17. Production:

(*a*) If mine is in production, furnish the following information: Not in production

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

(*a*) Describe the ore or mineral deposits briefly. Alluvial and elluvial deposits

(*b*) Submit available maps and assay data. Two attached in addition to those submitted 4/5/51

(*c*) Give estimated tonnage and grade of each class of ore reserves. xxx

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

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Sheet #2

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data. See bibliography together with new work by U.S.G.S and A.E.C. etc.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each.

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings. none

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings. none

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each. per letter 4/5/51

(*f*) Cost of rental for equipment which the operator proposes to rent. xx

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work. none

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above. none

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent. Testing program to begin after crops are in and machinery received

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.

SOUTHERN MINERALS INCORPORATED (Name of Company) By Philip K. Barbour (Signature of authorized official)

June 22, 1951 (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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

SOUTHERN MINERALS
INCORPORATED
(A North Carolina Corporation)

Sheet #1
To accompany MF-103

MORGANTON, N. C.

1....Officers, directors and 5 largest stockholders

President, Philip R. Barbour, 805 West Fifth Street, Winston Salem, N.C.
Vice President, William H. Herbert, Robert Heller Associates Inc., Cleveland, O
(Home address; 2525 Euclid Heights Boulevard, Cleveland, O.)
Secretary, Parker W. Morris, Parker Morris Associates, 1040 West First St., Winston Salem, N.C.
Assistant Secretary, Mrs Reeda G. Herbert, 2525 Euclid Heights Boulevard, Cleveland, Ohio
Treasurer, Philip R. Barbour

Directors; Parker W. Morris
Philip R. Barbour
Dr David Sayer, Bowman Gray School of Medicine, of Wake Forest College, Baptist Hospital, Winston Salem, N.C.
William H. Herbert
Rex Champion, 508 King Charles Road, Raleigh, N.C.

(Note; the above officers and directors hold office until the annual meeting July 20, 1951)

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Walter H. Carter, Riddleberger and Carter, Front Royal, Virginia
H. Preston Pitts, Manager, Caldwell Hotel, Morganton, N.C.
Henry C. Newsome, Carolina Drug Co., West 4th Street, Winston Salem
Parker W. Morris

Attorneys; Craige and Craige, Wachovia Bank Bldg., Winston Salem, N.C.

2....Experience.

Philip R. Barbour was president and manager of Montana Lead, Inc., from 1926 to 1940 and in charge of corporate affairs and management of properties in Rimini, Lewis and Clark County, Montana. Also in iron mines in N. Michigan with Pickands Mather in 1924. Incorporated Southern Minerals in 1946

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PROPERTY.

Duke Power Company owns some 200,000 acres and descriptions are impossible except for the various areas to be tested only in Burke county, N.C. Locations of six tracts are marked on map of Silver Creek attached. Duke owns nearly all the bottom lands on the Catawba river and we should like to test these lands to see if dredging possibilities exist.

Location of lands of Joe Hurt marked on map of Silver Creek. Mineral rights owned by Cox-Wright-Hills family.

Location of our leased land on Henry Fork marked on maps submitted April 5, 1951; descriptions of lease in same letter.

Permission to test may be obtained from land owners; if the land tests well it may be leased. We would prefer to obtain exploration rights with option to lease if the land tests. This would obviate a great deal of time lost and expense in leasing before testing as the writer learned when leasing agent for Goldfield-Callahan Zinc and Tennant in 1948-49

SOUTHERN MINERALS
INCORPORATED

(A North Carolina Corporation)

Sheet # 2
To accompany MP-103

MORGANTON, N. C.

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The general plan is to explore the upper headwater areas of various creeks, the middle sectors of these creeks, and the lower areas in order to determine the respective tenors of the heavy sands in these areas.

All manner of drills have been used, also caissons and cribbed shafts and all have been unsuccessful.

The ground is similar to the monazite ground in Idaho in that there is very little gravel, perhaps 80% being less than 3/4 inch. We believe, therefore, that augur drill holes spaced close together across the bottom lands will give us a quick and quite accurate picture of the tenor of heavy sands in the lower and middle areas of the creeks, branches and rivers, or, in the areas that might be dredged and/or drag lined.

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The simplest and most positive proof of the existence of monazite and heavy sands is by panning in nearly every river, creek and branch in the area.

Deny
Applying for an exploration
permit received by Bureau
from the Geol Survey Robt Lawrence
at Burnsville Turner after consultation
Acad Chas Jenkins WB
WF 103

Mr. Bass
Dma - 1002

SOUTHERN MINERALS
INCORPORATED

(A North Carolina Corporation)

MORGANTON, N. C.

805 West 5th Street,
Winston Salem, N.C.
April 5, 1951

Turned over to Bassett Apr 20

RECEIVED
3 Fin
APR 9 - 1951
DEFENSE MINERALS ADMINISTRATION
OFFICE OF ADMINISTRATION

Dr James Boyd,
Defense Minerals Administrator,
Department of the Interior,
Washington, D.C.

Dear Sir;

Subject; Request for exploration funds.

We herewith respectfully apply for funds to explore and prospect for; (1) monazite, and cerium and the rare earths, and, (2) for accessory minerals and metals such as beryl, chrome, columbium, tantalum, and ferro-alloy ores such as wolframite, in the South Mountains area in Burke, Cleveland, Catawba, McDowell, Rutherford and other counties in North Carolina.

LOCATIONS.

(A)...Initial exploration will be on the Henry Fork river, 10.2 miles from Morganton via Highway #18 south to Shelby. These lands are under long term leases with option to purchase by this company. Our sillimanite deposit called Smith Cliff is on one of these tracts and some monazite, together with mica, graphite, and pegmatite minerals are associated with the sillimanite in hard rock.

The tenor of heavy sands as panned from the Henry Fork river and from an alluvial bar is high. Hunter of the T.V.A. and White of the University of North Carolina who discovered the sillimanite deposit in 1945, panned considerable monazite from the bar and river. Monazite was mined within a mile of the Smith Cliff in the period 1885 to 1910.

This location is marked "A" on the soil map of Burke county attached.

Legal description of these tracts are;

1. A tract of land near Walker Chapel Church in Lower Fork Township in Burke County, North Carolina, being sixteen acres, more or less, and more particularly described as follows: From the place of beginning, which is a black oak tree, the first course is West 40 poles or 660 feet to a stake; thence, second course North 40 poles or 660 feet to a chestnut oak; thence third course, North 45 degrees East 20 poles or 330 feet to a stake; thence fourth course East 35 poles or 577½ feet to a stake; thence, fifth course South 60 poles or 990 feet to a stake; thence sixth course along the north bank of Henry Fork river, or a branch of that river, 14 poles or 231 feet to a dogwood tree; thence seventh course West 17 poles or 280½ feet to a point; thence eighth course North 20 poles or 330 feet to the black oak tree which is the place of beginning. Recorded in Burke County, N.C. in the Office of the Register of Deeds, and in Book 60, page 461, March 20, 1947.

2. SECOND TRACT; Beginning on a double dogwood the North side of upper ~~Fork~~ South Fork river in Michell Huffman's now Kelly Carswell line and runs East with said line 104 poles to a rock and pointers on a ridge; then North 45 East with Huffman's line now P. A. Carswell line 20 poles to a stake; then North 32 poles to a stake in the Speculation line; then North 80 West with said line 125 poles to a stake in said line; then South 60 poles to the river; then down the river 14 poles to the Beginning, containing 44 acres, more or less. Recorded in Burke County North Carolina in the Office of the Register of Deeds and in Book 60, page 609, March 18, 1948

3. A tract of land, being eighty two acres (82) more or less, in South Fork Township, near Walker Chapel Church, which, from a point, the place of beginning, the first course is South 83 degrees West 334 poles, or 5511 feet, to a stake in holler, thence second course South 79 degrees East 144 poles, or 2376 feet to a chestnut oak marked "R.W." on a steep bluff, thence third course North 45 degrees East 20 poles

or 330 feet, to a point, thence fourth course due East 85 poles, or 1402½ feet to a stake, thence fifth course South 83 degrees East 105 poles, or 1723½ feet to a stake, thence sixth course North 20 degrees West 70 poles, or 1153 feet, to a point which is also the place of beginning. Recorded in Office of Register of Deeds in Burke County in Book 60, page 523, August 8, 1947.

Other heavy sand bearing areas in the South Mountains District to be explored are;

(B)....Duke Power Company lands which consist of a total of some 200,000 acres in North and South Carolina and Georgia, and which include most of the bottom lands of the Catawba River from Lake James near Marion, N.C. to Camden, S.C. and also a large part of the Savannah River above Augusta, Georgia.

We have the privilege of prospecting these lands, and after exploring and testing, to select and lease areas that can be profitably operated. These lands are mostly alluvial, and the tenor of heavy sands, though not as high as headwater lands, is much greater than the tenor of heavy sands in Trail Ridge, Florida. Some tracts of Duke lands are located close to headwaters in the South Mountains.

Maps are available to us from various agents of the Company in the three States mentioned. Areas marked "B" on the Burke county soil map, and on Plate 14 from Pardee's Professional Paper 213, both attached, give approximate locations of Duke Power Company lands.

(C)....Brindletown and upper Silver Creek area in Burke county on which we have an agreement and option to lease the mineral rights. Title to these rights have been held in the same family since about 1828, and presently there are more than 84 heirs, so time may be required before formal signature of the lease.

Map of this area is attached, and the area is marked "C" on both the soil map and Plate 14 of P.P 213.

(D)....Huntsville Mountain area of about 2500 acres in McDowell County, between Glenwood and Dysartville on which we have the permission to prospect and explore and option to lease on royalty basis, if it tests satisfactorily.

The approximate area is marked "D" on Plate 14 of P.P. 213

(E)....Dysartville-Vein Mountain area of some 4500 acres of mineral rights in both McDowell and Rutherford counties. The owner has asked us to explore and prospect this area and will lease to us if tests are satisfactory.

The approximate area is marked "E" on Plate 14 from P.P.#213

(F).... Miscellaneous tracts. There are hundreds of small tracts and farms in the headwater areas and branches of the larger creeks such as Henry Fork, Jacob Fork, Rock, Camp, Knob, Little Knob, Ward, Cane, Silver, Muddy, Clear, Satterwhite and others which may be leased before or after prospecting, exploring and testing. We have options to lease a number of these; the writer leased dozens of such tracts several years ago and is well acquainted with a great many small land owners in the headwaters area of the South Mountains.

Tenor.

The tenor of heavy sands in the headwaters is as high as 20%, and of the heavy sands the monazite may also be around 20%. A sample from the Brindletown area was recently analyzed both at Tuscaloosa and West Chicago and ran between 15% and 20% monazite with 3.8% chromite and 18% ilmenite, with garnets, epidotes, zircon, magnetite and other minerals described as "black opaques". Magnetic fractions of this sample showed allanite (orthite) in the opaque black minerals. The sample is probably typical

but not representative. The gold was removed from the heavy sands.

The thoria content of South Mountains monazite will probably average around 5%; the ceria will be from 30% upwards, and will probably be higher in ceria than monazite from Brazil or India. Ceria content of allanite will be not less than 26%. Content of other rare earths will no doubt be similar to those as given in Yost, Russel and Garner's "Rare Earths and their Compounds".

Gold was mined, mostly in the Brindle and Silver Creek area, from 1825 to 1849; monazite was mined from 1885 to 1910. Mining methods were crude. Monazite was produced in great part by shovels and sluices without riffles.

Monazite mining was described by contemporary engineers and geologists and reference is made to the attached bibliography which lists quite complete accounts of the period 1885 to 1910. Attached to this request are excerpts from Economic Paper No 8 of the N.C. Geological survey by Joseph Hyde Pratt in 1904, and also excerpts from Economic Paper No. 15 by the same author in 1908. Also to be submitted with this request will be a copy of N.C. Bulletin No 25, written by Joseph Hyde Pratt in 1916 on Zircon, Monazite and Other Minerals. The other references on the bibliography are in the library of the Department of the Interior.

It is useless to attempt to estimate the content of monazite per cubic yard from written reports or hearsay or reports by the old men who mined monazite. One such verbal statement by a farmer named Belo Huffman, a reliable man, is that he and his father could and did mine a "peck of monazite" by shovels and sluices from noon to dark. Apparently it is true that the same branch could be worked for monazite as much as four times a year or season, for as Levy pointed out the South Mountains are in a state of constant erosion and rains would wash monazite from hillsides into the branch, re-filling it.

Heavy sands can be panned from branches, from top soil on hillsides and even from road and highway cuts. In some places it will be only a few inches deep; in branches and creeks down to perhaps eight feet deep. It seems logical to assume that monazite may be found from the surface down in bottom lands. It has been mined within 3 miles of the Catawba river at Icard, Hildebran and Connolley Springs

Monazite mining stopped abruptly when a German cartel lowered the world price with Brazilian production of monazite. Since then there have been a few efforts to test parts of the area, but primarily for gold.

Simon Lake of submarine fame leased many farms on the Catawba and Johns river in 1911 and built a dredge, apparently of a suction type. The flood of 1916 washed this dredge down the river some 5 or 6 miles and it is now under the waters of Lake Rhodhiss. The farms are now all the property of the Duke Power Company. Lake had two companies, the Catawba Dredging Company and the Submarine Gold Machinery Mining Company, and efforts to locate maps, logs and tests and production records of these defunct corporations have failed so far.

U.S. Smelting Refining and Mining drilled many holes in 1931 on Silver Creek and a few on South Muddy in McDowell county; the engineer is said to have noted both tin and some of the platinum group metals. Goldfield, Callahan Zinc and Tennant bought these maps and logs and checked three of the U.S. Smelting company's line of holes, primarily for gold. They found that jigs worked well on recovery of heavy sands.

Richter, Millard and others have tested for gold near the head of Silver with shafts, Empire drills and many other means. The gold content might run around .18¢ per cubic yard; there are rumors of holes that ran $1.00 a yard. Most tests have been unsatisfactory. The water table is very high in all bottom lands, making it difficult to maintain shafts or even caissons to the soft saprolite bedrock for accurate quantitative tests. Pressure forces water into the shaft or hole through the soft bedrock as well as the sandy ground on the sides of the holes. In February a hole was sunk with an ingenious well drilling outfit with an augur arrangement on

a bucket, and it was thought that a core could be produced. It stopped on hard pan or gravel and went down only about 15 feet. The hole was tried by a Western dredge operator.

Apparently the bottom lands in the South Mountains area are similar to the monazite dredging ground in Idaho in the sense that neither have much gravel over 2 inches in size and that most of the gravel is around 3/8 inch, or "Pea gravel" as found on bed rock in Silver Creek. Gravel in North Carolina, however, is highly marketable with the present road building program.

Clearly the heavy sand tenor is higher in the headwaters of the creeks and branches in the South Mountains as noted by Levy in the "Rare Earths" (London, 1915) and more recently by sampling and panning throughout the area.

Yardage in the headwaters is small, however, compared to the yardage in bottom lands along such rivers as the Catawba, or the large creeks as Henry Fork, Jacob Fork, Silver, Cane and others heretofore mentioned.

The Catawba has sufficient yardage for several medium sized dredges—if there are values that might be recovered profitably.

The larger creeks might sustain small dredges, 2½ and 3 cubic foot buckets, again, if there are values that might be recovered profitably. Dredges, incidentally, should be equipped to replace the washed sand and soil to avoid erosion and silting of dams above lakes and the land should be left with drainage channels and cleared of brush and timber.

The headwater areas may best be worked by drag lines and washing plants. Again the washed sand and soil should be pumped back on the land, but this is dependant on the wishes of the owner if the land is leased and worked. If purchased it might make little difference, although it is said there is a law forbidding sluicing in McDowell county.

The branches where the tenor of heavy sands in highest, may well be worked with tugger hoists and scrapers, or "slushers", putting the sand and soil into trommels and then jigs. In some cases monazite bearing topsoil could be washed off hill sides into sluice boxes, or better still into jigs.

A large diameter augur drill on a Jeep or a truck would be as satisfactory for prospecting and exploration as any other method, and would have the very great advantage of much speedier determination of the tenor of the heavy sands, including monazite, cerium and the rare earths. It would be qualitative, but the borings could be carefully weighed, screened and jigged and thus give at least a partial estimate of tenor of heavy sands in the areas of great yardage. And there is a large area to be explored.

Trenches across the smaller branches in the headwaters made by slushers would definitely prove up the heavy sand content.

Material from any holes or excavations could be run through jigs, separated electro-magnetically, the fractions could be further cleaned up with laboratory tables and by sink and float.

Mineral Occurences

1. Besides gold, monazite, zircon, fergusonite, xenotime, rutile, garnet, corundum and beryl were noted on page 65 of Professional Paper 213 by Pardee and Park.
2. Genth in N.C. Geological Bulletin #1 in 1875 noted the following;
   platinum--sent to Prof. Shepard of the U.S. Geological Surveu by Gen. Clingman and found near Jeanestown (a "ghost " camp now, like Brindletown)
   palladium, said to be native. Sent to Prof. Shepard

Diamond. Variously noted in N.C. bulletins. Genth reported that Dr Stephenson of Gainesville, Ga., found one at the Brindletown ford and sent it to Prof. Featherstonehaugh of the U.S. Geological Survey. Ten authentic diamonds are said to have been found.
Tetradymite. Genth said found at Capt. Mills (Brindletown) in Burke and at Capt. Kirksey's in McDowell.
Corundum-small red and white grains in Burke, Rutherford and McDowell
Iserite-in three counties named above
Brookite " "
Senarmontite or Valentinite--"native antimony" reported found in Burke
Beryl-both bluish and green and found at Capt. Mills
Zircon-yellowish, brown and brownish white, pink, blue, amethystine--Burke county
Epidote-Rutherford county, and plentiful on Cane Creek
Rutherfordite
Xenotime
Wolframite. General Clingman reported to Genth that it was frequent in Burke county.
Montanite--reported at the Mills mine with tetradymite
Monazite--found with zircon and diamond at Col. Mills..

3...Joseph Hyde Pratt in N.C. Bulletin 25 lists the following as associated with monazite;

Ilmenite	garnet	Brookite	corundum
Magnetite	zircon	xenotime	epidote
Chromite	rutile	Fergusonite	beryl
Kyanite	pyrite		

4...B.S. Hopkins in Chapters on the Lesser Known Elements lists the following as occuring in North Carolina, but not definitely in the South Mountains;

Clarkeite	Euxenite	Samarskite
Sperrylite	Polycrase	
xenotime	Fergusonite	

5...Dings Magnetic Separator Company of Milwaukee reported that allanite was found in a sample sent them from Brindletown in March 1951.

EQUIPMENT

1..B-35 Mobile Drill complete with hydraulic feed and drilling tools, not including bits, heads or augurs	$1,940.00
15-Sections 75' MD121500 Mobile augurs	637.50
2--MD31C69 Mobile drill heads--4½ inch	46.00
500--MD95FB Borium Tipped bits	74.00
1---CJ-3A Willys-Overland Jeep including excise tax, delivery to factory in Indianapolis from Toledo, and mounting charge of B-35 hydraulic rig	$1,795.78
Freight from Indianapolis to Morganton, N.C.	?
1-24 Duplex Denver Mechanical concentrating pan with 1½ h.p. gasoline engine and pump (weight 1170 lbs)	945.00
Freight from Denver to Morganton	?
1-No 6 Denver Trommel-jig placer unit with 4 h.p. gas engine	2,338.00
Freight from Denver to Morganton (weight 4,400)	

SOUTHERN MINERALS
INCORPORATED

(A North Carolina Corporation)

MORGANTON, N. C.

EQUIPMENT, continued

1..Chicago Pneumatic Model CP-160,Class PG-20 portable gasoline engine driven air compressor complete with electric starter and mounted on two pneumatic tired wheels,price f.o.b.factory	$4,700.00
Freight from factory	?
1..Chicago-Pneumatic Model CP sump pump,fob Greensboro,N.C.	303.00
1--No 13 A Denver Wilfley lab oratory concentrating table with one sand deck and one slime deck,plus motor	314.00
Freight from Denver	?
1--Type EBK Dings Magnetic Cross Belt Separator,6 inch size	8,000.00
Freight from Milwaukee	?
1--8" x10" Denver Type "H" jaw crusher,etc,less motor	1,239.00
1-10 H.P.Motor and base 1800 RPM 22/440 volt	255.00
Weight of crusher 2,630	
" " 403	
1--27" x14" Denver Crushing rolls with 15 hp motor and drive for 3 phase,60 cycle,220/440 volt total weight 10,600 lbs -cost	4,595.00
Freight on above three items from Denver	?
1--Double drum tugger hoist Approximately	800.00
1--Slusher " "	200
1--Dodge Power Wagon equipped with winches front and rear,approx.	5,000.00
Air pipe and air hose approximately	300.00
1--gasoline driven chain saw " "	400.--
Miscellaneous; Cable and blocks,lumber for slides,light weight pipe for water, (preferably flexible plastic pipe),lumber for sluice,water tank, weighing scales,sizing screens,tools,boom and hand hoist,trailer for trommel jig,etc	3,000.00
Possible total freight bills	1,500.00
Total	$38,382.28

Operating overhead;wages for 6 men for 6 months	$12,000.00	
Laboratory fees,gasoline,power bills,contingencies,etc;	12,000.00	24,000.00

Total amount of funds requested for exploration Henry Fork,Catawba river and South Mountains Project $63,382.28

Respectfully submitted,

P. R. Barbour

President
Southern Minerals,Incorporated

805 West 5th Street,
Winston Salem,N.C.

Publications.

16th Annual Report, U.S.G.S. 1896, Part 4, Pages 667-693, by Nitze
N.C. Geological Bulletin # 9, 1895, bu Nitze. (out of print)
Mineral Resources 1901-1905
Transactions of A.I.M.E. Volume 40, pages 315-340
Mineral Resources 1906-1910
U.S.G.S. Bulletin # 340, 1908
Information Circular, Bureau of Mines #6847- Petar
" " " " 6321-Santmyers
" " " " 7233
U.S. Bureau of Mines Bulletin # 212, 1923--Moore, Lind, Marden, etc.
" " Technical Paper #110, 1915-Kithil
" " " " 2651, 1922-Schlundt
Economic Paper No 8, N.C. Geological Survey, Pratt, 1904--attached abstract
" " 15 " " " " 1908 " "
U.S. Geological Survey Professional Paper #213, 1949, Pardee and Park
" " " Bulletin # 340 by Sterrett
" " " " # 666X by Waldemar Schaller
N.C. Bulletin # 25 by Joseph Hyde Pratt, 1916--attached
Rare Earths and their Compounds, Yost Russel and Garner, John Wiley 1947
Chapters in the Chemistry of the Less Familiar Elements, B.S. Hopkins, Stipes Pub. Co Champaign, Ill.
U.S. Bureau of Mines Yearbooks.
The Rare Earths, Levy, London, 1915

Maps

Morganton Quadrangle, U.S.G.S. Topographical sheet, 1899 and 1903
Soil Map of Burke County, U.S. Dept of Agriculture, 1926 Attached
Gold Placers and Lodes in the Southwest Part of the Morganton Quadrangle, Plate 14 from P.P.# 213, from unpublished map by Keith and Sterrett 1905-10 (Blown up)
Map of Brindletown area by Justice in 1940 showing Mills property

MONAZITE.
Abstracts from State of North Carolina and U.S. Government Reports

A....North Carolina Geological Survey, Economic Paper No. 8, by Joseph Hyde Pratt, Raleigh, 1904.

MONAZITE AND ZIRCON.
Introduction.

On account of monazite and zircon being mined for similar purposes-i.e., for the rare earth oxides they contain-they are treated together in this report. The oxides obtained from these minerals are used in the manufacture of mantles for various incandescent lamps and for the glowers of electric lights. The demand for monazite is increasing and considerable of that mined in the State is now being exported to Germany. All of the zircon mined, however, is consumed in the United States in the manufacture of the glowers for the Nernst electric lamp.

COPY

MONAZITE *
(* United States Geological Survey; Mineral Resources of the U.S. 1903)

Monazite, which is essentially an anhydrous phosphate of the rare earth metals, cerium, lanthanum and didymium, usually contains a varying but small percentage of thoria. It is the presence of this latter oxide that gives monazite its commercial value. There is a very wide variation in the percentage of thoria that the monazite contains, but the commercial monazite that is put on the market contains from 3 to 9% of this oxide. The thoria, together with very small amounts of lanthanum and didymium oxides, are used in the manufacture of the cylindrical hood or mantle of the Welsbach and other incandescent gas lights. The cerium oxalate obtained in the separation of the other oxides, is used to a limited extent in pharmacy.

Monazite varies considerably in color, being light yellow to honey yellow, reddish, brownish and yellowish green, and has a resinous to vitreous luster. It is brittle, breaking with a conchoidal or uneven fracture, and is from 5 to 5.5 in hardness. The mineral is heavy, having a specific gravity of 4.64 to 5.3. By means of its color and specific gravity it can usually be readily identified.

LOCALITIES **
(**In the field work assistance was rendered by Douglas B. Sterrett of Yale Univ.)

Commercial deposits of monazite are not found in the original rocks, but in

the gravel deposits of the present and former streams, which have resulted from the disintegration and erosion of the crystalline rocks which contain the monazite. These rocks have been altered and decomposed to a condiderable depth, so that at the present time they are in a state of constant erosion; and their mineral constituents, monazite, zircon, magnetitte, etc., are being deposited in the soils and gravels. This is going on to such an extent that even after the soild and gravels have been once worked for monazite, they may be re-washed at the end of the year and prove profitable sources of monazite.

The supply of monazite is obtained from Cherokee and Spartanburg counties, S.C., and from Rutherford, McDowell, Burke, Cleveland and Lincoln counties, N.C. There are large numbers of small miners in most of the counties who produce from a few pounds to a ton of monazite per year. Many of them do not concentrate their product beyond that effected by sluice boxes, and they sell their material to some one of the four companies who are buying monazite, either for their own use or for exportation. These concentrates vary considerably in color, according to the locality from which they have been obtained, and there are consequently monazite concentrates of a red, red-brown, yellowish brown, yellowish green and yellow color.

RUTHERFORD COUNTY. One of the main centers of the monazite mining industry in the State is at Ellenboro, Rutherford county. Near this place is located the property of the German Monazite Company. This company is working 26 or more men, who wash out about 1½ tons of cleaned sand each week. Their workable gravel is from 20 to 100 yards wide and extends for half a mile up and down the creek. The overburden, which has to be removed, is from 1 to 5 feet in depth, some of which carries a small amount of monazite.

Three miles from Ellenboro, at the Louisa Smart mine, three different colored monazite sands are found, which are not more than 100 yards apart, one being a greenish color, another brownish red and the third yellowish. The first is found along a small branch just above the drying plant, the second is found higher up on the hill-side, about 60 feet from the stream. These two gravels are being sluiced but on a small scale at the present time. These gravels pan well and were quite free from garnet, and contained but a little of the black sand. The gravels are 3 feet thick, and are covered by 2 to 3 feet of an overburden of red clay. The third, or yellowish monazite sands, are now being washed; but they did contain some garnet and heavy iron minerals. The brownish sand readily concentrates to a product containing 80% monazite. This property would be more extensively worked but for a lack of a sufficient water supply. Near these gravel deposits, a pegmatitic dike 4 feet in width was observed cutting the hornblende gneiss. This dike contained a great many garnets up to the size of a walnut and also monazite, which was proved by panning the crushed rock.

There are several places near Ellenboro where monazite is being mined. One is on the property of Mr E. A. Martin, where a good percentage of monazite is obtained

COPY

in panning the stream gravels and also the gravel for some distance under the bank but the total area of the pay gravel is not large.

Another is on the west fork of Sandy Run creek, on the land of Mr J.C. Glover, where there is a considerable quantity of gravel, but it did not show a very very large percentage of monazite on panning. The gravels are from 2 to 3 feet in thickness under an overburden of from 1 to 2 feet. There is, however, a good water supply which is favorable for working the gravels in quantity. Only two sluice boxes were worked during the past year on this property.

Again, on a small tributary of Sandy Run creek, on the land of Mr J.D. Bridges, the stream gravel and the gravel and soil on the banks are exceedingly rich in monazite, but the area of the gravels is not very extensive.

Three miles southeast of Ellenboro, on a small branch running through the plantation of Mr D.B. Ferrill, the gravels have been pretty well worked out once and are now being worked over the second time, yielding fairly good results. Only one sluice box, however, was being worked during 1903, although there was a sifficient water supply for using several.

At Rutherfordton is another center of monazite mining and on the land of Mr A.D.K. Wallace, 2 miles from Rutherfordton, considerable work has been carried on. The gravels in the bottom land are often 100 feet across and from 1 to 3 feet thick. The overburden, which is not very heavy, contains some monazite and is washed similarily as the gravels. There are two branches on this property containing workable gravel deposits, varying from 50 to 150 feet in width and about a quarter of a mile in extent. There is a good water supply on this property.

About half a mile west of the Wallace deposits, on the land of Mr H. Harris, the gravels that extend up and down the stream for a distance of nearly a mile have have been washed.

At Pepperton Creek, where some mining has been done for monazite, the concentrates are low in monazite, being made up largely of black magnetic sand.

At Duncan, 17 miles from Ellenboro, on land controlled by Mr Henry Gettys, there are 30 acres of bottom land, extending about a mile along the creek, which contains considerable monazite. The stream gravels are to be washed first and then the bottom lands. Six or eight troughs will probably be used. In the same vicinity on the land of Mr B.A. Mode, the stream gravels and bottom gravels contain considerable monazite and there is a good supply of water.

CLEVELAND COUNTY.

On the land of Mr A.M. Hunt, 6 miles from Casar, there were two sluice boxes operated in 1903, although the gravel deposits would warrant more, and there was an abundant water supply with which to develop ehtm. The gravels panned very well, showing a good percentage of monazite. They varied in thickness from 2 to 3 feet, and there was good width of bottom land that had only been partially been worked out. Near the upper end of this land the stream gravels are profitable to work over a number of times, as there has been no work done on the adjoining property and the rains are constantly bringing down new sources of supply of monazite.

In the vicinity of Carpenter's Knob there are some very promising gravel deposits containing monazite, a number of which are being worked by the Incandescent Light and Chemical Co., of New York.

On the land of Mr J.C. Crow, the bottom lands gravels are from 30 to 75 yards wide and will average about 2 feet in thickness. During 1903 there were two sluice boxes at work on these gravels and 2 on the land of Mrs Eliza Spakes further up the stream. These lands are on the head waters of Little Knob Creek. Further down the creek, on the McSneed property, the monazite gravel was observed in one place to be 7 feet thick. Two sluice boxes were in operation on this property, but there is a sufficient supply of water to work more, which would be warranted by the quantity of gravel

COPY

Little Knob creek has been worked more or less from its source to its mouth but in many places the gravels have received new supplies of monazite, so that it will pay to wash them again.

On the property owned by the Incandescent Light and Chemical Company five sluice boxes were operated in 1903 and the stream gravel will be worked for about a mile. In a number of instances, bottom gravels that had formerly been worked are now being washed again at a profit. The gravel in some places is 3 feet thick.

This company also owns and are working monazite gravels on Gamp Creek in Burke county, and the Lattimore mine near Shelby, Cleveland county. They expect to erect a concentrating or cleaning mill near Carpenter's Knob.

Another good deposit of stream gravel and bottom land gravel is on the land of Mr M.E. Ledford, near Carpenter's Knob. These gravels pan very well and there is a good water supply.

On KNOB CREEK there are very extensive stream-gravels and considerable bottom lands gravels which, while they do not contain a very large percentage of monazite, are extensive in area, and as there is a good water supply they could be worked on a large scale and therefore could be mined profitably**********

Near Moorresboro, Cleveland county, there are a number of small producers of monazite. The most work is done on the land of Mr H.C. Burrus, who operated three sluice boxes or troughs in 1903. There is a considerable area of bottom lands, but only small portions of these are being washed for monazite. The branch flowing through this property has been worked for a distance of about a mile and contains workable deposits of 100 yards in width. The concentrates, however, contain a rather large percentage of the black sand.

BURKE COUNTY.

In Burke county on Brindletown Creek and its tributaries, are many properties containing good deposits of monazite gravels, such as those of Captain J.E. Mills, Mr John Kirksey and Mr Moore Epley.

(Note;------U.S. Geological Survey Professional Paper No 213, "Gold Deposits of the Southern Piedmont by J.T. Pardee and C.F. Park, Jr., Washington 1948 states with regard to the Mills property and Burke county;------

The Mills property, 13 miles southwest of Morganton, in the South Mountain region, is a large tract that includes the site formerly occupied by the mining camp of Brindletown. Many placer deposits have been mined on it. In a report made in 1916 by William E. Hidden it was estimated that the production of the tract has been more than $1,000,000. The gold was 0.825 to 0.827 fine and occurred mostly in small grains, though a few nuggets were found, the largest weighing 1½ ounces.

Considerable monazite sand was recovered with the gold. On the basis of recovery from test holes, Hidden estimated the gold content in remaining parts of the deposit at 50 cents to the cubic yard.

As described by Hidden, the mining history of this region began in 1828 with the discovery of gold at the ford of Brindle Creek, named from the Brindle family, the first settlers. The tract that includes this location came into the possession of Captain Mills, the grandfather of the present owner, Miss May Mills, about 1835, and except for the operations of a few leasors, it has been mined by the Mills family ever since (Note; Fench Coxe in Asheville told Barbour that his family had mined over a million in gold from this tract.). In the course of mining several small veins and stringers of gold-bearing quartz were uncovered, and for a time considerable gold was recovered with a 5 stamp mill operated on ore from the upper part of these veins and on loose fragments or float from the veins.

In addition to monazite, the placer concentrate contained more or less zircon, fergusonite (an unusual mineral, essentially an oxide of niobium and tantalum, with varying amounts of such rare metals as erbium, cerium, and uranium), xenotime, (yttrium phosphate), rutile, garnet and corundum. A large crystal of clear beryl was found in 1874.)

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MCDOWELL COUNTY. In McDowell County there are numerous good deposits of monazite on the waters of Muddy Creek, but an act of the Legislature prohibits the use of these streams for sluicing purposes, and thus prevents the mining of monazite on the adjacent properties.

There is a tendency among a large number of the farmers who own lands containing monazite gravels to work only the stream gravels, which they do two or three times a year, leaving the bottom land untouched except for farming. The heavy rains wash the sands in from the hill sides, from under the banks and from the streams above, thus renewing the monazite in the stream-gravel. These surface soils seem to contain a considerable per cent of monazite for 6 to 8 inches of their depth, which has resulted from the decomposition and disintegration of the adjacent rocks. The sands that are obtained from the sluice boxes are sometimes re-washed by the miners, but it is usually sold directly to some one of the companies owning the concentrating plants.

METHODS OF DRYING MONAZITE CONCENTRATES.

The weighed concentrates are dried in two different ways. One way consists of spreading the sand over an oiled or rubber cloth in the sun, where it dries very quickly, due partly to the heat absorbed by the dark iron sand. The other method of drying is by heating over a furnace. A small ditch from 4 to 8 feet long and 1 to 1½ feet wide and about 1 foot deep is dug, at one end of which there is built a rock or brick chimney. Over the ditch there is a sheet iron cover. The monazite is spread out on this sheet iron drying plate under which there is a hot fire.

CONCENTRATING MILLS.

The concentrating mills that are now being operated in the monazite district are those of the Carolina Monazite Company located at Shelby, N.C. and Gaffney, S.C.

That of the German Monazite Company at Oak Springs, Rutherford county, N.C.

And the Incandescent Light and Chemical Company near Carpenter's Knob, Cleveland county, N.C.

Further cleaning of the concentrates that are obtained from the sluice boxes by the miners has been perfected to such an extent that now a cleaned monazite sand can be obtained that is from 95 to 99 per cent monazite.

This has been effected by means of the Wetherill Electro-magnetic separator. The dried concentrates are placed in a hopper and from there fed to a classifier. The finer material, which contains the monazite, is allowed to pour over a revolving drum, and is thus scattered evenly over an 18 inch belt. This passes along under four powerful electro magnets, which have small belts to carry the material attracted by the magnets out of the magnetic field. As soon as such a point is reached the belt drops the sand, which passes through a chute to the proper receptacle, placed to receive it. The first magnet removes all the magnetic iron, the larger pieces of garnet and generally all of the titanic iron or ilmenite. If any of the latter passes this belt it is removed with all of the finer garnet sand by the second magnet. The third magnet is so adjusted as to remove only all the coarse monazite, and the fourth removes all of the finer pieces of monazite. The remaining sand, quartz, zircon, rutile, etc., is dropped off the end of the large belt and is run into the waste pile.

The garnet, which is of very good quality, having a hardness of 7.5 will, if obtained in some quantity, be of value for abrasive purposes. There is some gold contained in these tailings, but no attempt is made to save it.

In washing some of the monazite gravels, the gold which they contain is saved and in many instances has amounted to $1.00 or more per sluice box per day.

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COPY

N. CAROLINA GEOLOGICAL AND ECONOMIC SURVEY, Economic paper No. 15, by Joseph Hyde Pratt, Raleigh, 1908.

One of the most important events in connection with the monazite industry during the past year has been the extension of the monazite area into ALEXANDER COUNTY, where commercial deposits of this mineral have been located and purchased by the National Light and Thorium Company. It is interesting to note the extension of the monazite area since this mineral was first mined in the Carolinas in 1893, when it first became a real industry in the State. At that time the known field was an area about 2000 miles square in Burke, Catawba, Cleveland, Gaston, Lincoln, McDowell, Polk and Rutherford counties in N.C. and Spartanburg and Greenville counties S.C. Now the area is known to cover about 3,[illegible] square miles, including [illegible] the above, portions or all of Alexander, Caldwell and Iredell in N.C. and Anderson, Cherokee, Laurens, Oconee and Pickens in S.C.

The discovery in 1907 of the Alexander county monazite deposits is the direct result of prospecting by the National Light and Thorium Company of Youngstown, Ohio.

The commercial deposits of monazite in North Carolina are the gravel beds in streams and bottom lands and in certain places the surface soils which adjoin gravel deposits. Pill tests and lavorarory tests have been made upon the monazite bearing rock, but thus far no deposit has been discovered that could be mined prifitably.

Occasionally certain portions of the saprolitic rock in close proximity to the gravel beds, especially that immediately underlying them, has been scraped up and washed, giving a small margin of profit. The monazite in these gravel beds has resulted from the alteration and erosion of the monazite bearing rocks and this mineral has been concentrated by nature in these gravel deposits. The percentage of monazite in the sands extending from surface to bed rock is not over one per cent per cubic yard. This, however, is sufficient to make profitable mining. In many localities it has been the custom to sluice not only the gravels but all the overburden, inasmuch as even the top soil carries a small amount of monazite.

There are no large hydraulic plants in operation, but nearly all the monazite is obtained in sluice boxes fed by hand. These boxes are fitted at their upper end with a sieve or shaking hopper with a screen of about No 12 mesh. The boxes vary in length from 8 to 20 feet and in some instances are fitted with riffles holding mercury for catching the gold.

The concentrates have to be dried (here follows the description before wrotten.).

These dried sands are often further concentrated by means of the ordinary horseshoe magnet, which picks out all the magnetite.

The miners or producers of this sand are paid for it on the basis of a 100 per cent product. The sand brought into the magnetitic concentrator

COPY

plants is worth from 4 to 8 cents per pound. Its value is increased, however, after being run over these machines, from 12 to 20 cents per pound.

This material represents what is known as crude monazite sand and contains besides the monazite, varying amounts of magnetite, ilmenite, garnet, zircon, rutile, corundum, cyanite, quartz (occasionally), hornblende and, rarely, chromite. In order to separate the monazite from these associated minerals, it is necessary to run this crude sand through some electro-magnetic separator, such as the Wetherill, or some modification of this type of machine which is in most general use.

Magnetism.

There are many substances that are attracted by electro-magnets that are not apparently influenced at all by the strongest steel magnet, and for this reason many substances which were formerly considered non-magnetic have been proved to be magnetic when subjected to the intense magnetic field obtained in an electro-magnetic separator. All substances are, of course, either repelled or attracted by magnets, the former being called paramagnetic and the latter diamagnetic. The latter class is the most numerous, but since the introduction of the electro-magnets, the former class, which up to this time had been considered extremely small, has been largely increased. The paramagnetic substances are the metals iron, nickel, cobalt, manganese, chromium, cerium, palladium, platinum, osmium and many of their salts and compounds. The degree of attraction of these varies very widely, and thus it is possible by using the electro-magnetic separator, which can be regulated so as to give a very strong field and at the same time a field which is capable of fine adjustment, to separate not only the paramagnetic from the diamagnetic substances, but also to separate the paramagnetic from each other. As will be observed from the list of associated minerals of monazite given above, many of them are salts of the metals that are paramagnetic, and it is possible by use of the separators, mentioned above, to obtain a monazite sand of from 90 to 99% monazite, depending on the care that is exercised in separating it. It is the cerium in the monazite that makes it a magnetic substance.

The other products, as the other minerals, magnetite, ilmenite and garnet, can also be obtained in a very pure state. From a long series of experiments* (* Min. Res. U.S. Geological Survey, 1909) which have been carried on, it has been determined that when treated in the Wetherill electro-magnetic separator or a similar type of machine that magnetite sand is removed with an amperage of .2; ilmenite with 1.1; chromite with 1.6; garnet with 1.75; hypersthene ~~with~~ and olivine with 2.2; monazite with 3.5 and hornblende with 5.

USES OF MONAZITE AND ITS ASSOCIATED MINERALS.

The commercial value of monazite depends upon the incandescent properties of the rare earth oxides which it contains, such as cerium, lanthanum, didymium and thorium oxides, which are used in the manufacture of the Welsbach and other incandescent gaslight mantles. It is the thoria that is used in the largest amount and which gives the actual value to the monazite. In the reduction of the monazite sand, there are a long series of salts that are obtained in considerable quantity, which have made it possible to carry on extensive series of experiments with these rare earth oxides. It requires from 4 to 6 months to recover from the monazite sand its percentage of thoria and render it sufficiently pure to be used in the mantles.

(Much description and detail of the Welsbach light will be omitted).....

Another element obtained from the monazite is didymium, whose oxide is dark brown. Use is made for this for branding the mantles with an indelible brand...

Of the associated minerals, zircon has a considerable commercial value of 20 to 25 cents per pound for its zirconia content, which is used in the manufacture of the glower of the Nernst lamp.....certain of the rare earths or refractory oxides, will conduct an electric current and glow after they have been heated to redness. This discovery made by Dr Nernst in 1897 has resulted in the development of the Nernst glower which is composed of a mixture of the rare earth oxides

COPY

and is made in the form of a small rod or pencil of chalk like material having wire terminals on each end. When cold, the glower is an insulator, but by means of the wire the glower becomes heated to redness when a current is passed through these wires, and its resistance gradually decreases until it has reached a red heat, when with the current of 220 volts across the terminals, it starts to conduct the current and give light.

(description of heater to start the light, etc.*)

The yttria contents used in the manufacture of the Nernst glower are obtained principally from the mineral gadolinite, which has not thus far been found in North Carolina.

The magnettite and ilmenite may find a use in the manufacture of magnetic electrodes that are manufactured by General Electric Co.

The garnet grains are sharp and can be used for abrasive purposes in the manufacture of garnet paper, which is used extensively in the boot and shoe trade.

PRODUCTION

There was a falling off in production of monazite in N.C. in 1907 compared to 1906 account of continued low price of thorium nitrate, which caused a reduction in the price of monazite sand from 20 to 12 cents for the refined sand. This decrease made it impossible for a number of properties to operate profitably. Production amounted to 456,863 valued at $54,824 as compared with 697,275 pounds valued at $125,510., the production of 1906, this being a decrease of over 100% in value and about 50% in quantity. Production was obtained from Cleveland, Rutherford, Burke, Iredell, Alexander and Catawba given in order of importance of their production. This is 5/6ths of total production of U.S. One company, the British American Monazite Company, which was a producer in 1906 sold out their property and machinery in 1906. This is the company that tried to mine the monazite bearing rock, but found it too low a percentage of monazite, although they had no difficulty whatever in obtaining a very clean product.

PRODUCTION OF MONAZITE IN NORTH CAROLINA 1893-1907

Year	pounds	value
1893	130,000	$7,600.
1894	546,855	36,193
1895	1,573,000	137,150
1896	30,000	1.500
1897	44,000	1,980
1898	250,776	13,542
1899	350,000	20,000
1900	908,000	48,805
1901	748,736	59,262
1902	802,000	64,160
1903	773,000	58,694
1904	685,999	79,438
1905	894,368	107,324
1906	697.275	125,510
1907	456,863	54,824

****

COPY

April 21, 1951

Mr. Philip R. Barbour, President
Southern Minerals, Inc.
Winston-Salem, North Carolina

Subject: Exploration Program

Dear Mr. Barbour:

In compliance with your request, we are enclosing five copies of Forms MP-103 to be completed and filed in connection with an application for Government assistance for the exploration, development and mining of strategic minerals.

Under the Defense Act of 1950 an applicant having proven reserves of strategic minerals can obtain a procurement contract for such minerals as are in short supply. On the strength of these contracts, the applicant can obtain private financing in most instances.

The program recently approved for encouragement of exploration of strategic minerals calls for participation on the part of the applicant, as shown in Sec. 9 (a) (b) and (c) of the attached Regulation MD-5.

The details of the plan, explaining the projects that will be eligible for assistance, the terms and schedules of financing, repayment, and other pertinent information are enclosed.

Please indicate your willingness to provide your share of the funds needed to carry out the proposed exploration by completing the enclosed Forms MP-103, so that we can proceed further with consideration of your application, which may or may not require a field examination.

Sincerely yours,

James Barr

James A. Barr, Sr., Chief
Industrial Minerals Branch

JAB:mac
Ext 5273

Enclosures 6

cc: Mr. Barr
Mr. Strobel
F I L E S

April 18, 1951

Mr. Philip N. Barbour
President, Southern
Minerals, Incorporated
P. O. Box 2[illegible]
Winston-Salem, North Carolina

Dear Mr. Barbour:

This is in response to your letter of February 22, 1951 addressed to Dr. Rapp, requesting forms for applying for exploratory assistance in connection with your mineral properties in North Carolina.

The program for encouragement of exploration provides for direct government participation in the form of matching funds. The enclosed press notice and copy of DMA Form MS-5 set forth the policies and procedures. Application Form MF-100 and Form MF-103 also are enclosed.

If you wish to submit an application we shall be pleased to review and act on it as promptly as possible.

Very truly yours,

J. B. Gowen

J. B. Gowen, Acting Chief
Copper Branch, DMA

Enclosures 12

JBGowen:ba

Copy to Hewitt, Wilson, Executive Officer, DMA Field Team,
Region III, Norris, Tennessee, W. C. I.
Executive Secretary, W. C. I.
F i l e s

COPY

SOUTHERN MINERALS
INCORPORATED
(A North Carolina Corporation)

MORGANTON, N. C.

February 22, 1951

Dr. James Boyd, Director
Bureau of Mines
Department of Interior
Washington, D. C.

Dear Sir:

We have been advised by our attorneys, Mr. John D. McCormell and Mr. Archibald Craige, following an interview they had with you yesterday, February 21st, that you requested a letter direct from this company to you pertaining to an application for funds from the Secretary of the Interior for the purpose of assisting this company in certain exploration projects.

We understand that in a few days, the necessary forms for such applications will be printed, and we will be grateful if you would forward to us these papers when they are ready.

A portion of our properties are located in Burk County, North Carolina, known as Smith's Cliff on the Henry Fork River and we believe this to be the largest sillimanite deposit in this country. This Cliff was discovered in 1945 and since that time, there have been studies made by TVA and State Geologists, as well as considerable metallurgical work in various Bureau of Mines stations, particularly Tuscaloosa, Alabama.

Monazite, corundum, mica and graphite are associated with sillimanite, but monazite is found in alluvial sands of the South Mountain area associated with fergusonite, beryl, corundum, chromite, zircon, ilmenite and other heavy sands. Small amounts of tin, wolframite and platinum have been noted.

We desire to test these alluvial deposits for dredging, drag line, hydraulic and other mining possibilities.

We have an Atomic Energy Commission license to purchase, produce and later to process monazite.

#2 Dr. James Boyd February 22, 1951

From existing data, we have every reason to believe these properties warrant further investigation and development.

Very truly yours,

SOUTHERN MINERALS, INC.

By /s/ Philip B. Barbour
President

PBB:J

P. S. Please address replies to Southern Minerals, Inc.
c/o P. O. Box 2386, Winston-Salem, North Carolina.

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

March 30, 1951

Mr. P. H. Barbour, President
Southern Minerals Incorporated
1119 Peyton Randolph Drive
Falls Church, Virginia

Dear Mr. Barbour:

Your recent undated letter to Mr. Boyd, inquiring where mineral identifications can be secured on black sand concentrates, has been referred to me for reply.

I understand from our College Park station that in the meantime you have discovered our facilities there and that they are now examining some samples for you. I am sure that you will find the service to be quite competent.

Sincerely yours,

L. B. MOON

Lowell B. Moon
Chief, Minerals Division

LBM;hva

Copy to: L. F. Strobel
Tom Lyon
H. P. Greenwald, Region VIII, Pittsburgh, Penn.
Paul Ambrose, College Park, Maryland
Minerals Division
F i l e s

LANDON F. STROBEL

SOUTHERN MINERALS
INCORPORATED
(A North Carolina Corporation)

MORGANTON, N. C.

1119 Peyton Randolph Drive
Falls Church, Virginia

Dr James Boyd, Director,
United States Bureau of Mines,
Washington, D.C.

Dear Dr Boyd;

Mr Archibald Craige, of Craige and Craige, Winston Salem, N.C. had an interview with you on February 21st, relative to the facts that we might obtain funds for the exploration of sillimanite, monazite, allanite, zircon, chromite and other strategic and critical minerals in North Carolina.

So far the writer has not received application forms for such funds, but we have brought all data and samples to the above address.

We have the fractions as made by electro-magnets, but need more adequate identification of the "opaque black minerals". A preliminary test apparently shows these to be more radioactive than monazite.

Would you be so good as to tell us where we might have positive identification made ?

Very truly yours,

P. R. Barbour

President
Southern Minerals, Incorporated

14

3/27/51 Lyon – reply

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 27 1951
LANDON F. STROBEL
Executive Secretary

LANDON F. STROBEL

SOUTHERN MINERALS
INCORPORATED
(A North Carolina Corporation)

MORGANTON, N. C.

February 22, 1951

Dr. James Boyd, Director
Bureau of Mines
Department of Interior
Washington, D. C.

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#2 Dr. James Boyd February 22, 1951

From existing data, we have every reason to believe these properties warrant further investigation and development.

Very truly yours,

SOUTHERN MINERALS, INC.

By Philip R. Barbour
President

PRB:J

P. S. Please address replies to Southern Minerals, Inc. c/o P. O. Box 2386, Winston-Salem, North Carolina.

MAR 5 1951

to Tam Lyon
for reply