DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 3047

DO NOT DETACH THIS SLIP

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This document has been recorded as

Exploration Assistance

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Copies to USBM, USGS and Region VII.

Routing Slip

To:	Code 400, Rm. 3538	Date	5/27/53
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400

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

JUN 9 1953

3047

Mr. David Banta
Banta Mining Company
1520 Dime Building
Detroit, Michigan

Re: Docket No. DMEA 3047 - Tungsten, Tin, Nickel, etc.
Banta Mining Company
Ross Tin Mine
Cherokee County, South Carolina

Dear Mr. Banta:

Reference is made to your recent application for aid in an exploration program at the subject property, where we note that you have drilled 5 diamond drill holes, with a total footage of 1,271.4 feet. You state that the next phase of exploration will be an additional 8,000 feet of diamond drilling for the purpose of blocking out ore. Because of DMEA Order-1, which specifies that the work of our exploration projects shall not go beyond a reasonable delimeation and sampling of the ore, and shall not include work prosecuted primarily for mining or preparation for mining, we are unable to aid you in blocking out ore.

With respect to most of the eligible minerals which you suspect are possibly present in the Ross Tin Mine, we note that when the complete results of the qualitative analyses are known, cores will be split and quantitative assays will be made. The form in which your analyst has submitted his reports and the mineral association indicate to us, however, that tungsten, nickel, cobalt, chrome, manganese, platinum, copper, beryl, and thorium, to the extent that such minerals may be present, occur only in minute and unworkable proportions.

As for the tin, please be advised that, prior to the date of mailing of your application, the commitment of funds allocated to DMEA for exploration assistance under the Defense Production Act was restricted to certain specified metals and minerals still in short supply. Tin was not specified and consequently was automatically removed from the list of metals or minerals eligible for exploration assistance. We regret to advise you, therefore, that we are without authority or funds to enter into a contract for the exploration for tin, and your application is accordingly denied.

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

Sincerely yours,

C. O. Mittendorf

Administrator

WSMartin/ls/GCSelfridge/esf
6/9/53

CC: Docket
Code 400
FT Reg. 7
Admr. R. File
R.W.Geehan, USBM
D.M.Lemmon, USGS
Operating Committee

MF-[illegible]3
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved: [illegible]
Budget Bureau No. 42-R1085.2.

Defense Minerals Administration
RECEIVED
MAY 25 1953

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

Not to be filled in by applicant

Docket No. DMEA-3047
Metal or Mineral
Date Received 5/25/53
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Banta Mining Company (A Michigan Corporation)
1520 Dime Building
Detroit, Michigan

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Ross Tin Mine (Owned by Ross Land Co.)
J. C. Bonner Farm (Owned by J. C. Bonner)

(*b*) State any mine name by which the property is known.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Held by Leases - Copies hereto attached.

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

All readily available.

5. *The exploration proj*—(*a*) State the mineral or minerals for which you wish to explore Tin, Beryl, Cobalt, Nickel, Platinum group, Rare Earths and Tungsten.

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within 15 days and be completed within 10 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated May 23, 1953

Banta Mining Company
(Applicant)

By David Banta, Pres.

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

DAVID BANTA
PRES. & GEN. MGR.

JOHN W. KOZAKAR
EXECUTIVE VICE PRESIDENT

ROBERT A. GRENN
SECRETARY

JOSEPH J. MALTESE
TREASURER

BANTA MINING COMPANY
1520 DIME BUILDING
DETROIT, MICHIGAN

FIELD OFFICE:
GAFFNEY,
SOUTH CAROLINA

May 7, 1953

Form M P - 103

Item 1. Name of applicant.-

(c) David Banta, Pres. & Gen. Mgr., 708 Union Street, Gaffney, South Carolina.

John W. Kozakar, Exec. V. P. Box 744, Detroit, Michigan.

Robert A. Grenn Sec. 1520 Dime Building, Detroit, Michigan.

Joseph A. Maltese, Treas. 140 Buckingham, Riverside, Ontario.

Item 5.

(d) Banta Mining Company is a young company organized and incorporated in Detroit, Michigan in 1952 and is domesticated in the State of South Carolina. The company was organized for the expressed purpose of developing and operating the Ross Tin Mine and other tin deposits of the Carolinas. Most of its principal stock holders are business and professional men including mining and geology industrial engineers and architectual engineers.

David Banta who is president and general manager of the company is in full charge and responsible for all field operations and will continue to supervise such work throughout its entire exploration program.

<u>Qualifications of David Banta.</u>

Born in Texas 1895.

Education - High school completed Como, Texas.

College education interrupted by service with the armed forces, World War 1.

Studies in geology, mining, various engineering courses and business through correspondence courses.

Experience -Thirth seven years experience in various phases of geology and mining including geophysical work, economic and structural geology, exploration by diamond drilling and other methods, research on various flow sheets and other phases of mining

including prospecting.

Also included was a geological surveys for plant sites in Montana and Idaho for the U. S. Atomic Energy Commission.

Six years of his geological and mining work was spent in the Carolinas, a great portion of which was research and the geologic study of the tin belt.

Item 6.

(a)	Independent contracts.-Approximately 8,000 feet of diamond drilling @ $4.50 per foot.	$36,000.00
(b)	Labor supervision, consultants.-Labor for cutting brush, clearing roads, core splitting and preparing samples and general work.	2,040.00
	Supervision and Engineering 34 weeks @ $200	6,800.00
	Consultants.	1,500.00
(c)	Operating material and supplies 300 core boxes @ $3.50.	1,050.00
(d)	Operating equipment-One small truck.	1,000.00
(e)	Rehabilitation and repairs-none.	
(f)	New buildings, improvements, installations.-None.	
(g)	Miscellaneous.-None.	
(h)	Contingencies.-Analyses and assaying cores	3,250.00
	Core storage and working space for core splitting 10 months @ $20.00	200.00

Item 7.

(a) Yes.

(b) In cash by sale of additional stock.

Total - - - - - - - $51,490.00

FILE COPY
SURNAME:

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

Mr. David Banta
Banta Mining Company
1520 Dime Building
Detroit, Michigan

Re: Docket No. DMEA 3047 - Tungsten, Tin, Nickel, etc.
Banta Mining Company
Ross Tin Mine
Cherokee County, South Carolina

Dear Mr. Banta:

Reference is made to your recent application for aid in an exploration program at the subject property, where we note that you have drilled 5 diamond drill holes, with a total footage of 1,271.4 feet. You state that the next phase of exploration will be an additional 8,000 feet of diamond drilling for the purpose of blocking out ore. Because of DMEA Order-1, which specifies that the work of our exploration projects shall not go beyond a reasonable delineation and sampling of the ore, and shall not include work prosecuted primarily for mining or preparation for mining, we are unable to aid you in blocking out ore.

With respect to most of the eligible minerals which you suspect are possibly present in the Ross Tin Mine, we note that when the complete results of the qualitative analyses are known, cores will be split and quantitative assays will be made. The form in which your analyst has submitted his reports and the mineral association indicate to us, however, that tungsten, nickel, cobalt, chrome, manganese, platinum, copper, beryl, and thorium, to the extent that such minerals may be present, occur only in minute and unworkable proportions.

As for the tin, please be advised that, prior to the date of mailing of your application, the commitment of funds allocated to DMEA for exploration assistance under the Defense Production Act was restricted to certain specified metals and minerals still in short supply. Tin was not specified and consequently was automatically removed from the list of metals or minerals eligible for exploration assistance. We regret to advise you, therefore, that we are without authority or funds to enter into a contract for the exploration for tin, and your application is accordingly denied.

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

WSMartin/ls/GCSelfridge/esf
6/9/53

Sincerely yours,

C. O. Mittendorf

Administrator

for DA
6-9-53

CC: Docket
Code 400
FT Reg. 7
Admr. R. File
R.W.Geehan, USBM
D.M.Lemmon, USGS
Operating Committee

400

FILE COPY
SURNAME:

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

Martin
Rutledge
Kunkel
Hedges
Selfridge

Mr. David Banta
Banta Mining Company
1520 Dime Building
Detroit, Michigan

Re: Docket No. DMEA 3047 - Tungsten, Tin, Nickel, etc.
Banta Mining Company
Ross Tin Mine
Cherokee County, South Carolina

Dear Mr. Banta:

Reference is made to your recent application for aid in an exploration program at the subject property, where we note that you have drilled 5 diamond drill holes, with a total footage of 1,271.4 feet. You state that the next phase of exploration will be an additional [illegible],000 feet of diamond drilling for the purpose of blocking out ore. Because of DMEA Order-1, which specifies that the work of our exploration projects shall not go beyond a reasonable delineation and sampling of the ore, and shall not include work prosecuted primarily for mining or preparation for mining, we are unable to aid you in blocking out ore.

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

Sincerely yours,

C. O. Mittendorf

Administrator

CC: Docket
Code 400
FT, Reg. 7
Adm. Read. File
R. W. Geehan, USBM
D. M. Lemmon, USGS
Operating Committee

WSMartin/ls 6/8/53

FILE COPY
SURNAME:

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

400

Martin
Thayer
Rutledge
Geehan
Pinkel
Hedges

Not used
Revised

Mr. David Banta
Banta Mining Company
1520 Dime Building
Detroit, Michigan

Re: Docket No. DMEA-3047 - Tungsten, Tin, Nickel, etc.
Banta Mining Company
Ross Tin Mine
Cherokee County, South Carolina

Dear Mr. Banta:

Reference is made to your recent application for aid in an exploration program at the subject property. This is to inform you that, prior to the date of mailing of your application, the commitment of funds allocated to the DMEA for exploration assistance under the Defense Production Act was restricted to certain specified metals and minerals still in short supply. Tin was not specified and consequently was automatically removed from the list of metals or minerals eligible for exploration assistance.

We regret to advise you therefore that, insofar as your application relates to tin, we are without authority or funds to enter into a contract for exploration, and your application is accordingly denied.

With respect to the other eligible minerals which you suspect are possibly present in the Ross Tin Mine we note that you have drilled 5 diamond drill holes, with a total footage of 1,271.4 feet and that when the complete results of the qualitative analyses are known, cores will be split and quantitative assays will be made. The form in which your analyst has submitted his reports* indicate to us, however, that tungsten, nickel, cobalt, chrome, manganese, platinum, copper, beryl and thorium, to the extent that such minerals may be present, occur only in minute and unworkable proportions.

You state further that the next phase of exploration will be an additional 8,000 feet of diamond drilling for the purpose of blocking out ore. Because of DMEA Order-1, which specifies that the work of exploration projects shall not go beyond a reasonable delineation and sampling of the ore, and shall not include work prosecuted primarily for mining or preparation for mining, we are unable to aid you in blocking out ore.

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

(*) and the mineral association

Sincerely yours,

Administrator

WSMartin:foc 6-2-53
cc: Docket
Code 400
FT. Reg. 7
Adm. Reading File
cc: R. W. Geehan, USBM
D. M. Lemmon, USGS
Operating Committee

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

Mr. David Banta
Banta Mining Company
1520 Dime Building
Detroit, Michigan

Re: Docket No. DMEA 3047 - Tungsten,
Tin, Nickel, etc.
Banta Mining Company
Ross Tin Mine
Cherokee County, South Carolina

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With respect to most of the eligible minerals which you suspect are possibly present in the Ross Tin Mine, we note that when the complete results of the qualitative analyses are known, cores will be split and quantitative assays will be made. The form in which your analyst has submitted his reports and the mineral association indicate to us, however, that tungsten, nickel, cobalt, chrome, manganese, platinum, copper, beryl, and thorium, to the extent that such minerals may be present, occur only in minute and unworkable proportions.

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

Sincerely yours,

Administrator

DMEA- 3047

DAVID BANTA
PRES. & GEN. MGR.

JOHN W. KOZAKAR
EXECUTIVE VICE PRESIDENT

ROBERT A. GRENN
SECRETARY

JOSEPH J. MALTESE
TREASURER

BANTA MINING COMPANY

1520 DIME BUILDING

DETROIT, MICHIGAN

FIELD OFFICE:
GAFFNEY,
SOUTH CAROLINA
708 Union St.

May 22, 1953

Supplimental to Preliminary Diamond Drill Report.

It was the objective of Banta Mining Company to develop a tin producing mine on the properties known as "The Ross Tin Mine" and "The Bonner Farm". Although tin occurs across the entire mineralized zone which is more than 300 feet wide, for the most part it is not in commercial quantities. Except for the occassional rich pockets, assays show an average of about .027% tin.

An examination of the drill cores show a good quantity of beryl and tungsten across the mineralized zone. The tungsten occurs as scheelite and fluoresces blue-white under a mineral light indicating a good grade.

Qualitative analyses are being made by Mr. Charles R. Huddle, analyst for Ivanhoe Mining & Smelting Co. Eleven samples representing all rock formation across the mineralized zone have been partially analyzed. Although a final report has not been received, a verbal report gives "good reaction" for the following minerals;

Nickel	Cobalt	Beryl
Platinum	Tungsten	Copper
Chromium	Gallium	Silver
Tin and	Rare Earths.	

A signed analysis report of four samples not complete is as follows;

Sample	41	45	46	47
Nickel	Present	Present		
Beryllium	Present	Present		
Rare earths minerals	Present		Present	Present
Tin (stannous)	Present	Present	(not tested)	
Cobalt		Present	Present	Present
Manganese				Present

Signed by Charles R. Huddle, analyst.

It is now the objective of Banta Mining Company to develop and exploit the above named minerals. When the complete results of the qualitative analyses are known, cores will be split and quantitative assays made in accordance with minerals present and their occurrence.

The next phase of exploration will be an additional 8000 feet of diamond drilling for the purpose of blocking out ore. If the mineralized zone continues its indicated width and continues along the line of strike as indicated then a possible thirty million tons of ore should be expected for open pit mining.

Respectfully,

David Banta

David Banta

DAVID BANTA
PRES. & GEN. MGR.

JOHN W. KOZAKAR
EXECUTIVE VICE PRESIDENT

ROBERT A. GRENN
SECRETARY

JOSEPH J. MALTESE
TREASURER

BANTA MINING COMPANY

1520 DIME BUILDING

DETROIT, MICHIGAN

FIELD OFFICE:
GAFFNEY,
SOUTH CAROLINA

708 Union Street
Gaffney, S. C.
April 20, 1953

Officers, Directors and Stockholders,
Banta Mining Company,
1520 Dime Building,
Detroit, Michigan

Gentlemen:

This letter of transmital of my report on the "Preliminary Diamond Drill Campaign" of the Ross Tin Mine, together with the supporting report and drill logs made by J. P. Jennings Jr., Geologist, will also suppliment these reports.

My previous extensive experience in the Western States and in Canada has been that the geological structure was fairly simple. In diamond drilling the rock changes were well defined and the rock was usually where it should be expected. By this I mean that if we were drilling in diabase or diorite and went into quartz the change was well defined and the same in going out of quartz into amigdeloid, basalt or other rocks. Also when we once determined the dip of the formation we could depend on the dip holding true in most cases. Mineralization was seldome complicated.

In this Southeastern Piedmont belt the general geology is very old rocks of the Archean age some of which is billion and four hundred million years old which is so metamorphosed that identification is almost impossible and especially when they blend gradually into other rocks. They are also in narrow bands frequently changing from one rock to another. Some of the metamorphic rocks are of the later cambrian age while most of the igneous rocks including granites, pegmatite and quartz are of late carboniferous age.

In certain sections the geological structure is extremely difficult to determine because the metamorphic rocks, in mountain building periods, have been pushed, folded, thrust faulted and sheared by inconcievable pressure. The folds sometime change the direction of the dip of the rock.

It is in these highly disturbed and weakened rock sections that the igneous rocks push up in a molten mass through laminations, fractures and faults in the metamorphic rocks. The igneous intrusions are usually mineralized and in addition the chemical changes that take place in metamorphism of the older rocks create some mineralizations.

Determining the various possibilities of mineralization and what minerals to suspect might be present in any rock here is a real challenge. Often the greater values are not visable or if so they can not be identified.

All of the geology that has ever been written about the Carolina tin belt places the tin occurrence in the 57 mile belt of pegmatite. Since the beginning of our exploration program, much geological information not heretofore known has been gathered. In one copper-gold property which contains some tungsten and is 35 miles off the tin belt and where no pegmatite is present we have found that the ore carries 1% tin. Near Grover, N. C. tin is found associated with columbium and tantalum and occurs in altered amphibolite as the host rock. Also tin occurs in or associated with manganese and other minerals in a belt paralleling the tin-pegmatite belt.

To the unseasoned geologist or engineer the cores we have obtained from our diamond drilling, for the most part, would appear pitifully barren of economic values. However, careful study and an attitude of suspecting all minerals that might be associated in the host rock and some minerals considered away from home has been very revealing to date.

Minerals suspected as possibly present in the Ross Tin Mine are tin, copper, gold, nickel, tungsten, beryl, lithium, columbium and tantalum.

Eleven assays have been made for tin from core over a very wide area (approximately 285 feet). The host rock in the eleven samples consisted of five different kinds of rock (hornblende, biotite gneiss, and actenolite-pegmatite-garnetiferous biotite gneiss-actenolite carrying sulphides-chlorite,quartz and feldspar carrying sulphides. In every tin assay across this entire width at least a small amount of tin was reported present. It should be remembered that the spectacular tin values occur spasmotically aggregated in shoots or small spots. The dissiminated tin values across the wide mineralized belt indicate the ore zone.

Several assays have been made for copper, gold and nickel. Small values of copper and gold were reported in most of the assays. No nickel has been reported but its presence is still suspected.

A mineral light was purchased and all core was examined for tungsten in the form of scheelite. This mineral occurs over a wide belt. Tungsten occurring as wolframite, huebnerite or ferberite is also strongly suspected.

Beryl seems to be visable in some of the cores. It is not uncommon for beryl to be present in pegmatite.

Qualitate analyses are being made of eleven samples covering all different rock formations across the mineralized belt. These analyses will act as a guide for complete quantitative analysis of all the core.

Respectfully,

David Banta

David Banta

137.5

DAVID BANTA
PRES. & GEN. MGR.

JOHN W. KOZAKAR
EXECUTIVE VICE PRESIDENT

ROBERT A. GRENN
SECRETARY

JOSEPH J. MALTESE
TREASURER

BANTA MINING COMPANY
1520 DIME BUILDING
DETROIT, MICHIGAN

FIELD OFFICE:
GAFFNEY,
SOUTH CAROLINA

REPORT ON THE ROSS TIN MINE
AFTER FIRST PHASE
OF
PRELIMINARY DIAMOND DRILLING

Gaffney, South Carolina

March 11, 1953

DAVID BANTA
PRES. & GEN. MGR.

JOHN W. KOZAKAR
EXECUTIVE VICE PRESIDENT

ROBERT A. GRENN
SECRETARY

JOSEPH J. MALTESE
TREASURER

BANTA MINING COMPANY
1520 DIME BUILDING
DETROIT, MICHIGAN

FIELD OFFICE:
GAFFNEY,
SOUTH CAROLINA

HISTORY OF THE ROSS TIN MINE AND THE OBJECTIVES OF BANTA MINING COMPANY

HISTORY

In 1902 tin occurring as cassiterite ($Sn.O_2$) was discovered by Capt. S. S. Ross on the property now known as the Ross Tin Mine.

During a period 1902 to 1907 mining operations were carried on, first as a placer operation in a small area on the hill slope near a branch. As the placer work progressed up the slope the ore was found in place in the form of greisen or altered pegmatite with its constituent feldspar altered to kaolin.

A verticle shaft was sunk on the hanging wall side to a total depth of 121 feet. At the 65 foot level a drift was driven 87 feet southwest following the strike of the ore. From this level two winzes were sunk and a short drift was driven on the 91 foot level. One winz was later raised to the surface making an inclined shaft. According to reports all this work was in the ore shoot. Reports state that the ore would average 5% tin.

On the 65 foot level a small amount of stopeing was done and the ore, being soft altered rock, was washed in a sluice.

Alteration of the rock extends to a depth of more than a hundred feet so the underground workings were dangerous and difficult.

It is believed that the collapse of the shafts and the eventual death of Capt. Ross caused the cessation of operations in 1907. All the old workings have long since completely collapsed and have been lost.

From the original workings a total of 130 tons of cassiterite concentrates were shipped to England for smelting and the tin was sold for approximately 25 cents per pound.

In 1937 Southern Tins Inc. under the direction of this writer relocated the old shafts. Some of the old workings were reopened and a prospect shaft was sunk to a depth of 60 feet for the purpose of examining the ore body. So far as this work went it tended to prove the correctness of previous reports. However, on account of bad ground and the complete collapse of the reopened inclined shaft the work was abandoned.

OBJECTIVES

In view of the extensive surveys for domestic tin, its shortage and indeed, its strategic importance to the United States the objectives of the Banta Mining Company is to do sufficient preliminary diamond drilling at the Ross Tin Mine to determine, first, its geologic structure and the continuity of the pegmatite dikes carrying the tin, second, quantity and quality of the ore, and third, the merits of the mine as a producer. Then on to its complete exploration, development and exploitation.

Under aggressive management a relatively low grade of ore, if in sufficient quantity, can be worked economically at the present price of tin.

The results of the preliminary diamond drill campaign, although far from complete, is herein contained in this report. A general and comprehensive report of the Ross Tin Mine and its geology was made in 1949.

Banta Mining Company

David Banta

David Banta, Pres. Gen. Mgr.

DAVID BANTA
PRES. & GEN. MGR.

JOHN W. KOZAKAR
EXECUTIVE VICE PRESIDENT

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SECRETARY

JOSEPH J. MALTESE
TREASURER

BANTA MINING COMPANY
1520 DIME BUILDING
DETROIT, MICHIGAN

FIELD OFFICE:
GAFFNEY,
SOUTH CAROLINA

ROSS TIN MINE

Geological Report

Preliminary Diamond Drilling

LOCATION

The Ross Tin Mine is conveniently located about one and a half miles northeast of Gaffney, Cherokee County, South Carolina in the Gaffney-Kings Mountain Quadrangle of the U. S. Geological Survey.

PHYSICAL FEATURES

The land is rolling to hilly. About one third of it is covered with small timber. Elevations on the property range from 650 feet above sea level in the branch to 755 feet on the highest point. A topographic map of part of the property is herein included.

GENERAL GEOLOGY

The general geology has been discussed in detail in the 1949 report and in previous U. S. G. S. reports.

In commenting on the genesis of the ore Graton (U.S.G.S. 1906) concluded that "the ore deposits are dikes pushed up from a molten mass at great depth and that the cassiterite is one of the original constituents of the ore magma". This distinguishes the deposit as dikes rather than veins and is born out by the fact that no tin has been found in the wall rock.

Sloan (South Carolina State Geologist 1907) reports the sequence of rock formation about as follows;

Beginning on the footwall side,"pyroxene enclosing pyrrhotite, quartz with cassiterite and pyrrhotite, feldspar and fibrolite impregnated with cassiterite, muscovite and altered pyroxene containing numerous pegmatite bodies which are barren of tin and hornblende-mica schist, aplite gneiss with tourmaline replacing feldspar, pegmatite intrusions in

zone of altered pyroxene and the hangingwall being quartz-mica slate and decomposed hornblende with finely granular quartz veins from stringers to several feet thick a short distance from the pegmatite dike. The quartz containing deep brown tourmaline, ilmanite, (pyrite, pyrrhotite and arsenopyrite). These veins being genetically related to the pegmatite and granite".

The general rock formation is the Archean gneisses cut by the later Carboniferous igneous granites, pegmatites and quartz. The granites invaded the Archean. Later the pegmatites intruded and finally quartz represents the final product of cooling magma.

Some of the Archean gneisses are metemorphosed almost beyond recognition. Some of the chloritic quartzites undoubtedly are of Cambrian age and the diabase to the east is of Triassic age.

A detailed description of a cross section of the property would obviously be long and boresome because of the frequent changes in the rock. These changes are not well defined but gradually blend from one rock to another. Some of it is in narrow bands and most of it is greatly metamorphosed.

A cross section beginning with the Whiteside granite on the hanging wall side is a series of sericite, serpentine in aplite gneiss, hornblende gneiss (pyroxene), chlorite and quartz, actenolite and pegmatite. Biotite and hornblende gneisses are most abundant. Much of the biotite gneiss is garnetiferous. The sericite which is 20 feet thick in at least one place is impregnated with rutile, garnet and possibly beryl.

STRUCTURAL GEOLOGY

It is the aim of Banta Mining Company to thouroughly and properly explore the merits of the Ross Tin Mine. For this reason the present diamond drill campaign was planned to first determine the geologic structure rather than to try to calculate values with a limited number of holes.

The older rocks have been subjected to intense folding, thrust faulting and metamorphism and causing laminations or foliations and producing schistosity. This excessive deformation adds greatly to the complexity of the structure of the rocks.

The general strike of the country rock is about N-60°-E. Because of the great disturbances of the rock at the Ross Mine the strike is in many directions. However, the general trend is about N-48°-E and the dip is to the southeast

ranging from 30° to 65° with the most predominant dip being about 58°.

Because the ore magma was pushed up in a molten mass through the laminations of the rock when the surface was much higher than it is today the pegmatitic dikes are very irregular in shape and form many branches or fingers. It is to be expected that these branches would be more numerous and in smaller bodies near the upper limits of their extension. By these same conclusions they would be expected to gradually converge and finally form one large pegmatite ore body.

Although the drilling has not been extensive enough to conclusively prove the structure, very strong evidence favors the conclusion that they do converge into larger dikes.

ECONOMIC GEOLOGY

The mineralized area is a belt of Roan gneiss about 600 feet wide between Whiteside granite on the east and Carolina gneiss on the west. The full width of this area has now been drilled. Its length along the strike has not been determined.

Most of the mineralization occurs in the zones of greatest weaknesses where the rock has been subjected to enormous pressure and movement. Alteration of the rock also extends to a greater depth in the zones of greatest shearing, folding and faulting.

Minerals of the zone are tin occurring as cassiterite ($Sn\ O_2$) in pegmatite dikes. Copper and gold occurs in small values in sulphides disseminated in biotite gneiss and in biotite with quartz, feldspar and chlorite.

Most of the pegmatitic dikes are in the biotite gneiss which is probably one of the oldest and weakest rock in the area. Some of these dikes are impregnated with cassiterite. One dike with an outcrop of greisen about a foot thick was cut at a verticle depth of approximately 175 feet and at that point it had increased in thickness to about four feet and was heavily impregnated with cassiterite.

Most all the pegmatite shows some indications of mineralization and it tends to become more disseminated as the dike become more substantial at depth. Assaying at this time is far from complete.

Sulphides in the forms of pyrite and chalcopyrite are rather abundant throughout most of the mineralized area and especially in the biotite and garnetiferous biotite gneiss. Seven trial assays were made of rock carrying average sulphides and the results of some showed copper values of .20% and a small value in gold. These values do not make ore

but would be interesting as bonus values in open pit mining.

PROSPECTING AND EXPLORING

Records of previous mining operations have been studied and a detailed geological survey has been made. Some pits have been dug and old shafts opened and examined.

The diamond drill program includes two phases of drilling, 1st to drill for structure to determine the exact position of the ore-body, the shape and continuety to depth of the dikes and the converging or consolidation of the upper branches at depth, and 2nd the blocking out of ore.

The first phase of the work has now been sufficiently completed to justify the starting of the second phase.

During the first phase of the program five holes, with a total footage of 1,271.4 ft. were completed to the individual depths and the positions shown herein.

ANALYSIS OF RESULTS TO DATE

At time of writing no tin assay returns are available. However, certain conclusions may be drown from the results of the drilling completed.

Hole No. 1. Angle 53°. Rock altered to saprolite to a depth of 117 feet. From 117 ft. to 217.2 ft. the rock was altered so that it was difficult to core and some core was lost. At 146 ft. to 150.4 ft. the sludge from the drill indicated pegmatite. Because of alteration of the feldspar in the pegmatite it was granular and only a few very small pieces of core was recovered. Several narrower pegmatite bodies were indicated by the sludge but most of the pegmatite core was lost.

Hole No. 2. Angle 53°. Alteration of rock was expected in this hole and drilling was carefully done in an effort to save the core but none was recovered. However, some of the sludge was panned and saved. This hole was drilled to cut the known ore-body a few feet below the old mine workings.

Hole No. 3. Angle 53°. This hole was placed near the southwest edge of the lateral extension of the mineralized zone and very little pegmatite was encountered. Too many voids in the rock to return drill water.

Hole No. 4. The rock at this location was much less altered and core recovery was generally good. At 220.2-226.0 feet where a pegmatite body was heavily impregnated with cassiterite 2.8 feet of core was lost. From 120.2 feet to the bottom of this hole (502 ft.), a width of 281.8 feet, an abundance of pegmatite is present. It occurs from stringers to several

feet thick in bands of biotite gneiss and hornblende gneiss.

Hole No. 5. Located over old mine workings and drilled vertically. Because of shallow work and completely altered rock a soil sampler was used to take the samples. At about 80 feet the rock became too hard for the soil sampler and diamond drilling was done to a depth of 119 feet. The rock was not hard enough to core and very little core was recovered. The pegmatite when altered is especially difficult to core because alteration of the feldspar leaves the quartz granular. Much effort was made to return the drill water so the sludge could be recovered but the ground was too open for this.

CONCLUSIONS

1. The numerous small pegmatite bodies near the surface, some of which outcrop, carry erratic values of tin.

2. The pegmatite bodies or branches near the upper limits of the intrusions converge and become consolidated into a solid orebody at a few hundred feet below the present surface.

3. The erratic and generally spectacular values near the surface become smaller crystals or small grains more evenly dissiminated throughout the orebody as the branches converge into a more substantial dike.

4. All previous mining has been carried on by gopher-holing or gouging at the surface. The drilling has indicated a very wide pegmatitic body at depth. If the assays show that the dissiminated values are of commercial grade mining operations on a large tonnage would be possible.

5. The results of the drilling gives encouragement to continue work of further drilling at close intervals to confirm the continuity of the indicated mineralized zone and the subsiquent blocking out ore.

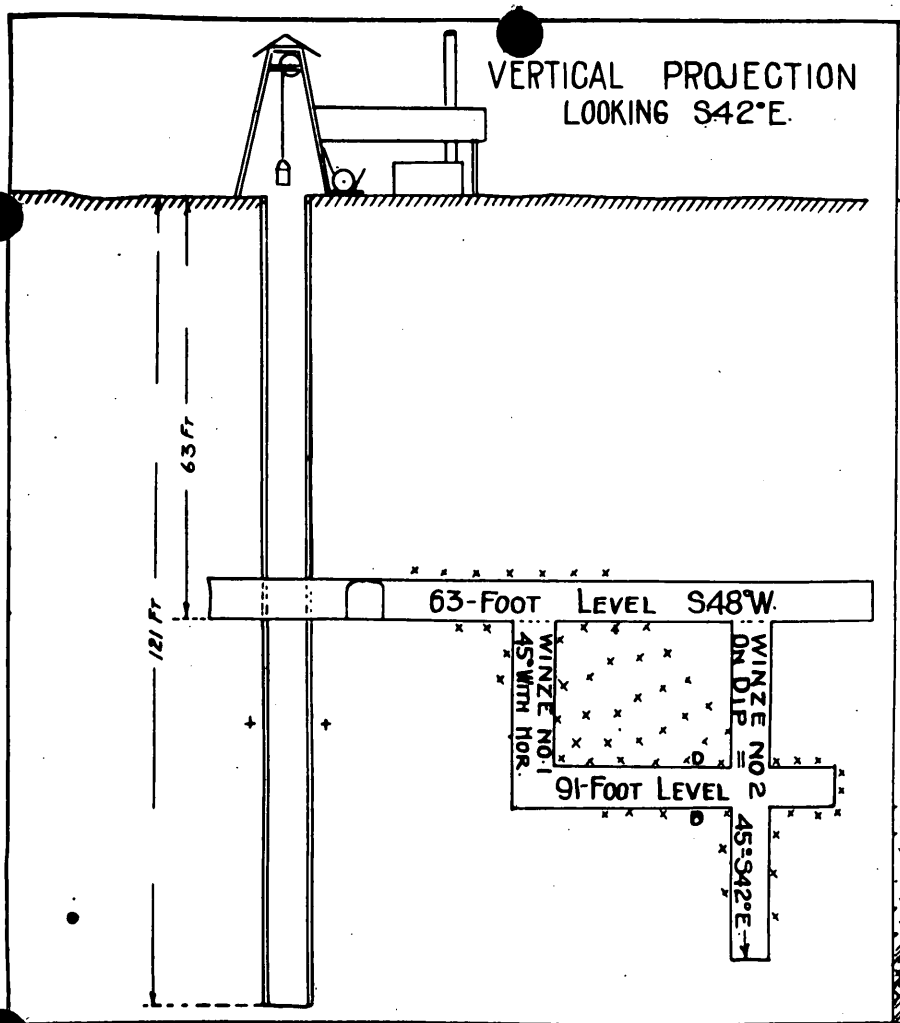
6. The chief point to be kept in mind in consideration of this deposit is that if the ore proves to be of commercial value a large tonnage of ore is indicated. As revealed by the drill logs there is widespread occurrence of pegmatite throughout the entire mineralized zone.

7. The mine is just outside the City Limits of Gaffney. Good truck roads are on the property and a paved road is within a quarter mile. Railroad facilities, power and mill site are all readily available. Climate is ideal for year round operation.

Banta Mining Company

David Banta

David Banta
Pres. & Gen. Mgr.



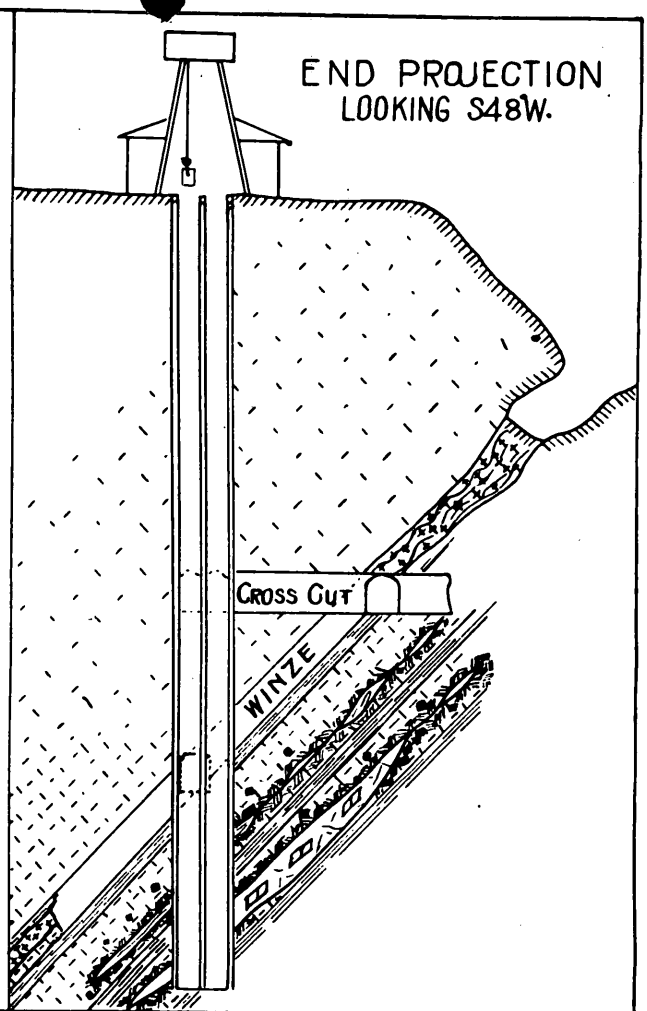
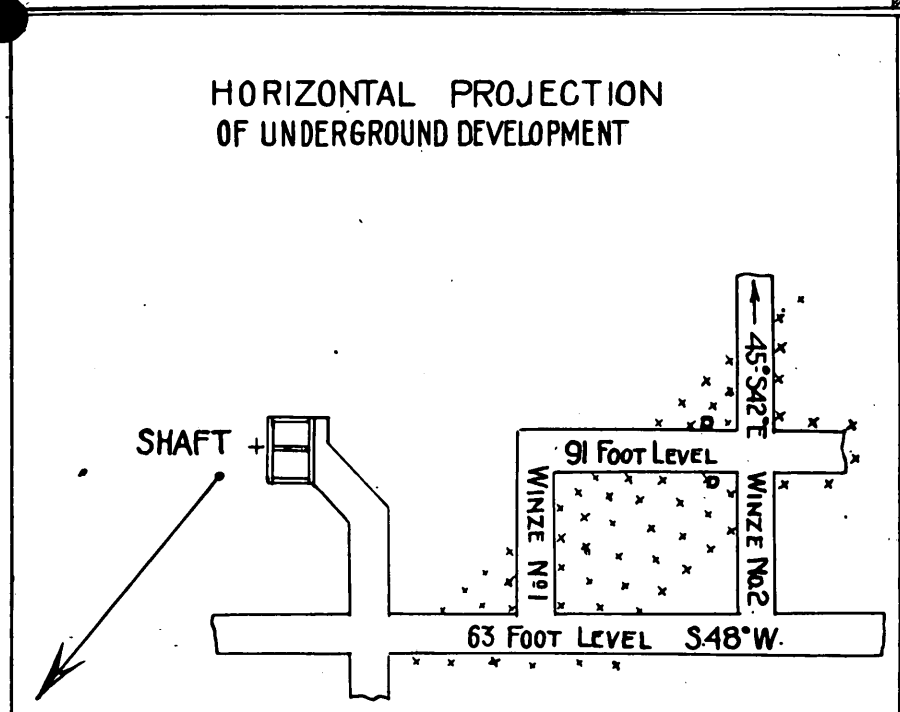
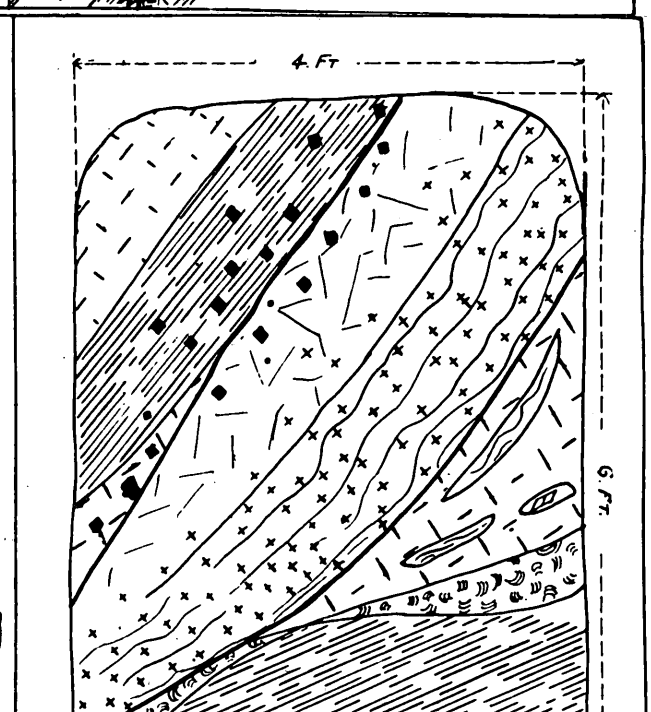


PLATE V.





SECTION TIN ORE-BODY
EXPOSED AT "DD" ON 91 FOOT LEVEL

PLATE VI.

ROSS TIN MINE

- ++ Tin Ore (Cassiterite)
- Pyrite and Pyrrhotite
- Pyroxene
- Amphibole
- Hornblende Saprolite
- Pegmatite Oligoclase
- Quartz
- Cyanite and Fibrolite
- Aplite Gneiss
- Brown Mica

From "Catalog of Mineral Deposits" By Earl Sloan, S.C. Geologist. 1907

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 1
Angle 53°
Strike N-42-W

Started 12/26/52
Finished 12/31/52

Depth 217.2
Elevation 737
Location from 91.0-S
vertical shaft 106.6-E
Sec. 74 Block 99

LOG	DESCRIPTION	Assay No.	SnO_2	Ni.	Cu.	Au.
00.0-117.2	Casing					
117.2-117.4	Serpentine in Aplite Gneiss. (Feldspar and fine Quartz).					
117.4-122.3	Feldspar with Quartz-Shattered and decomposed. Core lost 4.0					
122.3-129.1	Biotite Gneiss somewhat altered. Light medium Sulphides. Core lost 4.3 Ft.					
129.1-130.0	Hornblende Gneiss (Pyroxene). Narrow bands of Feldspar carrying cassiterite. Medium light Sulphides.					
130.0-132.4	Garnetiferous Biotite Gneiss considerably altered. Medium light Sulphides.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No.	1			Depth	217.2
Angle	53°	Started	12/26/52	Elevation	737
Strike	N-42-W	Finished	12/31/52	Location from vertical shaft	91.0-S 106.6-E

Sec. 74 Block 99

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.	
132.4- 132.6	Hornblende Gneiss-Sulphides in seams.						
132.6 142.3	Biotite Gneiss Greatly altered. Very light Sulphides. Core lost 8.3 Ft.						
142.3- 142.8	Actenolite and Hornblende.						
142.8- 143.4	Hornblende Gneiss and fine Biotite Gneiss.						
143.4- 144.6	Chlorite and Quartz with very light Sulphides. 144.0 - 145.3	9H1	.005		None	Tr	
144.6- 153.6	Core lost 9.0 147.0 145.5 145.7-145.9 147.2-147.5	754H1 653H1 2T1H1 2T2H1	 .041 .038	None None	None STr	.01 .01	Fe 8.5 Si.1
153.6- 154.1	Hornblende Gneiss.						
154.1- 154.5	Chlorite, quartz and Feldspar.						
154.5 154.8	Hornblende Gneiss.						

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 1
Angle 53°
Strike N-42-W

Started 12/26/52
Finished 12/31/52

Depth 217.2
Elevation 737
Location from 91.0-S
vertical shaft 106.6-E
Sec. 74 Block 99

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
154.6-156.3	Actenolite and Sulphides (closely related to Hornblende gneiss).					
156.3-157.1	Chlorite and Quartz With Sulphides Contains bands of Actenolite.					
157.1-159.5	Serpentine in Aplite Gneiss.					
159.5-165.3	Biotite Gneiss Medium heavy Sulphides					
165.3-167.0	Chlorite, Quartz and Feldspar. Light Medium Sulphides.					
167.0-170.8	170.1-170.4 Core lost.	755H1		None	Tr	.01
170.8-172.0	Actenolite and Sulphides.					
172.0-178.9	Actenolite, Quartz and Oligiclase going into Pegmatite. Some Sulphides					
178.9-181.0	Actenolite and Sulphides.					

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BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 1
Angle 53°
Strike N-42-W

Started 12/26/52
Finished 12/31/52

Depth 217.2
Elevation 737
Location from vertical shaft 91.0-S 106.6-E
Sec. 74 Block 99

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
181.0-182.0	Biotite Gneiss. Medium Sulphides.					
182.0-182.5	Hornblende Gneiss. Greatly altered. Sulphides.					
182.5-183.1	Feldspar and Quartz. Some Cassiterite. Light Sulphides. 182.6-182.9	55LH1		None	VSTr	.01
183.1-185.2	Biotite Gneiss. Considerably altered. Good grade Vermiculite.					
185.2-185.5	Feldspar and Quartz.					
185.5-189.2	Garnetiferous Biotite Gneiss. Medium Sulphides.					
189.2-189.5	Garnetiferous Biotite Gneiss and Actenolite.					
189.5-191.2	Garnetiferous Biotite Gneiss. Heavy Sulphides.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No.	1			Depth	217.2
Angle	53°	Started	12/26/52	Elevation	737
Strike	N-42-W	Finished	12/31/52	Location from vertical shaft	91.0-S 106.6-E
					Sec 74 Block 99

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
191.2-191.4	Feldspar and Quartz.					
191.4-198.5	Garnetiferous Biotite Gneiss					
	146.0 Heavy Sulphides. Core lost 4.1	557H1		None	.23	.02
198.5-199.6	Actenolite and Sulphides					
	Heavy Sulphides					
199.6-200.9	Garnetiferous Biotite					
	Heavy Sulphides					
200.9-201.7	Garnetiferous Biotite					
	Medium Sulphides					
201.7-202.2	Hornblende Gneiss. Light Sulphides					
	in seams.					
202.2-202.8	Garnetiferous Biotite Gneiss					
202.8-202.9	Actenolite and Sulphides					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 1
Angle 53°
Strike N-42-W

Started 12/26/52
Finished 12/31/52

Depth 217.2
Elevation 737
Location from vertical shaft 91.0-S 106.6-E
Sec. 74 Block 99

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
202.9-204.0	Garnetiferous Biotite Gneiss Light Sulphides					
204.0-206.7	Biotite Gneiss intruded by Pegmatite core lost 2.7					
206.7-209.8	Feldspar and Quartz-Possible Cassiterite. Core lost 3.0 206.7-207.7	10H1	.04			
209.8-210.4	Actenolite very light Sulphides					
210.4-217.2	Chlorite and Quartz. Light Sulphides. Vermiculite					
217.2	Final Depth.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No.	2			Depth	139.0
Angle	53°	Started	1/1/53	Elevation	734
Strike	N-42-W	Finished	1/2/53	Location from vertical shaft	74.0-S 72.0-E

Sec. 74 Block 68

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
	Note: Alteration and decomposition of the rock extended beyond the depth of this hole (139.0 Ft.). No core was made. The only information obtained was by panning return sludge from the drill.					
00.0-115.0	Casing.					
115.0-116.0	Biotite Gneiss (altered). Large quantity of Vermiculite.					
116.0-119.4	Pegmatite. Feldspar altered to Kaolin freeing the quartz in granuals. Sludge contained Cassiterite. 117.0 119.0	2T3H4 2T4H4	.019 .021			
119.4-121.4	Biotite Gneiss containing Vermiculite.					
121.4-124.4	Biotite Gneiss carrying heavy Sulphides. 123.4	S1H2		None	.20	

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 2
Angle 53°
Strike N-42-W

Started 1/1/53
Finished 1/2/53

Depth 139.0
Elevation 734
Location from 74.0-S
vertical shaft 72.0-E

Sec. 74 Block 68

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
124.9-126.4	Biotite Gneiss carrying Sulphides.					
126.4-128.4	Biotite Gneiss containing Vermiculite. 126.9	52H2		None	.22	
128.4-130.6	Actenolite and Sulphides.					
130.6-131.8	Garnetiferous Biotite Gneiss.					
131.8-133.8	Actenolite and Sulphides.					
133.8-139.2	Actenolite and Hornblende.					
139.2	Final depth.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No.	3			Depth	294.2
Angle	53°	Started	1/4/53	Elevation	742
Strike	N-36-W	Finished	1/14/53	Location from vertical shaft	127.0-S 200.0-E

Sec. 83 Block 93

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
00.0-51.0	Casing					
51.0-59.0	Biotite Gneiss. 3.1 Unaltered 4.9 considerably altered. Very light sulphides. Water lost at 52.0 Ft. Regained by lowering casing.					
59.0-59.3	Chlorite and Quartz. Light Sulphides.					
59.3-59.5	Biotite Gneiss.					
59.5-73.0	Chlorite and Quartz. Light medium Sulphides. At 69.0 Mud Seam. At 71.0 Lost Water.					
73.0-86.8	Core lost.					
86.8-87.3	Hornblende Gneiss.					
87.3-89.5	Chlorite and Quartz. Heavy Sulphides.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 3
Angle 53°
Strike N-36-W

Started 1/4/53
Finished 1/14/53

Depth 294.2
Elevation 742
Location from vertical shaft 127.0-S 200.0-E

Sec. 83 Block 93

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
89.5-91.4	Core lost.					
91.4-92.5	Hornblende Gneiss.					
92.5-95.6	Garnetiferous Biotite and Actenolite. Bands of actenolite carrying brown tourmaline. Heavy Sulphides. At 96.9-97.9 Soft seam.					
95.6-105.9	Core lost.					
105.9-107.9	Biotite Gneiss very light Sulphides.					
107.9-110.6	Garnetiferous Biotite Gneiss and Actenolite. Very heavy sulphides.					
110.6-112.4	Garnetiferous Biotite Gneiss. Heavy Vermiculite.					
112.4-112.8	Garnetiferous Biotite Gneiss and Actenolite. Heavy Vermiculite.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No.	3			Depth	294.2
Angle	53°	Started	1/4/53	Elevation	742
Strike	N-36-W	Finished	1/14.53	Location from vertical shaft	127.0-S 200.0-E

Sec.83 Block 93

LOG	DESCRIPTION	Assay No.	SnO_2	Ni.	Cu.	Au.
112.8-114.0	Garnetiferous Biotite Gneiss. Heavy Vermiculite.					
114.0-115.3	Garnetiferous Biotite Gneiss and Actenolite. Light Sulphides.					
115.3-116.6	Biotite Gneiss. .8 Ft. core lost.					
116.6-117.1	Garnetiferous Biotite Gneiss and Actenolite.					
117.1-117.6	Chlorite and Quartz.					
117.6-149.2	Garnetiferous Biotite Gneiss and Actenolite. Heavy Vermiculite. At 144.0-145.5 soft seam. Core lost 4.1					
154.2-169.4	Garnetiferous Biotite Gneiss and Actenolite. Light Sulphides. Core lost 2.5					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 3
Angle 53°
Strike N-36-W

Started 1/4/53
Finished 1/14/53

Depth 294.2
Elevation 742
Location from vertical shaft 127.0-S 200.0-E

Sec. 83 Block 93

LOG	DESCRIPTION	Assay No.	SnO_2	Ni.	Cu.	Au.
169.4-179.4	Chlorite and Quartz.					
179.4-191.6	Biotite Gneiss .5 Core lost. Core lost 4.1					
191.6-200.3	Garnetiferous Biotite Gneiss. Light sulphides.					
200.3-202.5	Biotite Gneiss. Medium Sulphides.					
202.5-232.1	Garnetiferous Biotite Gneiss. Heavy Vermiculite. Light Sulphides. Core lost .4					
232.1-233.5	Hornblende Gneiss.					
233.5-236.1	Actenolite containing Quartz passing into Pegmatite.					
236.1-237.6	Heavy Vermiculite in Garnetiferous Biotite Gneiss.					

BONTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 3
Angle 53°
Strike N-36-W

Started 1/4/53
Finished 1/14/53

Depth 294.2
Elevation 742
Location from 127.0-S
vertical shaft 200.0-E
Sec. 83 Block 93

LOG	DESCRIPTION	Assay No.	SnO_2	Ni.	Cu.	Au.
237.6-243.8	Garnetiferous Biotite Gneiss and Actenolite.					
243.8-244.4	Garnetiferous Biotite Gneiss.					
244.4-245.9	Actenolite.					
245.9-246.6	Garnetiferous Biotite Gneiss and Actenolite.					
246.6-248.7	Garnetiferous Biotite Gneiss.					
248.7-249.4	Quartz					
249.4-251.5	Garnetiferous Biotite Gneiss.					
251.5-267.6	Garnetiferous Biotite Gneiss and Actenolite. Core lost 1.3					
267.6-284.2	Garnetiferous Biotite Gneiss Heavy Vermiculite. Sulphides.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 3
Angle 53°
Strike N-36-W

Started 1/4/53
Finished 1/14/53

Depth 294.2
Elevation 742
Location from vertical shaft 127.0-S 200.0-E

Sec. 83 Block 93

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
284.2-286.8	Biotite Gneiss.					
286.8-292.5	Garnetiferous Biotite Gneiss. 291.9-292.3	11 H3	.004			
	Feldspar Gneiss, Pegmatite and Chlorite. Vermiculite. Sulphides.					
292.5-294.2	Garnetiferous Biotite Gneiss and Actenolite.					
294.2	Final depth.					

E NTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No.	4			Depth	502.0
Angle	53	Started	1-20-53	Elevation	747
Strike	N-42-W	Finished	2-17-53	Location from vertical shaft	106.0-N 398.0-E

Sec. 86 Blk. 83

LOG		DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.	
00.0-37.0		Casing						
37.0-47.4		Hornblende Gneiss-altered. Core lost 9.5						
47.4-50.6		Chlorite and Quartz with some Feldspar. Some Sulphides.						
50.6-51.0		Actenolite with Sulphides.						
51.0-51.3		Biotite Gneiss-altered.						
51.3-52.5		Pegmatite-Shattered. Core lost 1.0						
52.5-53.4		Hornblende Gneiss with some Quartz and Feldspar.						
53.4-61.9		Chlorite and Quartz and some Pegmatite.						
61.9-73.5		Chlorite and Quartz with bands of Garnetiferous Biotite Gneiss.						

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 4
Angle 53
Strike N-42-W

Started 1-20-53
Finished 2-17-53

Depth 502.0
Elevation 747
Location from vertical shaft 106.0-N 398.0-E
Sec. 86 Blk. 83

LOG	DESCRIPTION	Assay No.	SnO_2	Ni.	Cu.	Au.
73.5-74.5	Hornblende Gneiss and Actenolite.					
74.5-76.6	Garnetiferous Biotite Gneiss. Light Sulphides.					
76.6-77-1	Garnetiferous Biotite Gneiss, Hornblende Gneiss and Actenolite. Heavy Quartz.					
77.1-77.9	Biotite Gneiss-altered. Core lost 0.1.					
77.9-78.4	Actenolite and Sulphides.					
78.4-79.2	Garnetiferous Biotite Gneiss.					
79.2-80.5	Biotite Gneiss, Feldspar and heavy Quartz impregnated with Rutile.					
80.5-83.4	Hornblende Gneiss and Actenolite.					
83.4-84.5	Garnetiferous Biotite Gneiss.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 4
Angle 53
Strike N-42-W

Started 1-20-53
Finished 2-17-53

Depth 502.0
Elevation 747
Location from vertical shaft 106.0-N 398.0-E
Sec. 86 Blk. 83

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
84.5-92.2	Garnetiferous Biotite Gneiss, Actenolite, Quartz and Feldspar. At 85.2 heavy Chlorite and Quartz impregnated with Rutile.					
92.2-115.0	Sericite schist carrying garnet. Orthaclase, Ilmenite and possibly some fine grains of Cassiterite. Rock very hard and solid.					
115.0-122.6	Garnetiferous Biotite Gneiss with bands of Quartz and Feldspar carrying Sulphides.					
122.6-123.5	Quartz carrying sulphides, garnet and ilmenite.					
123.5-129.8	Garnetiferous Biotite Gneiss.					
129.8-130.4	Glassy Quartz.					
130.4-138.4	Actenolite and sulphides.					

B NTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No.	4			Depth	502.0
Angle	53	Started	1-20-53	Elevation	747
Strike	N-42-W	Finished	2-17-53	Location from vertical shaft	106.0-N 398.0-E

Sec. 86 Blk. 83

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
138.4- 138.7	Pegmatite.					
138.7- 141.1	Hornblende gneiss.					
141.1- 148.1	Garnetiferous Biotite Gneiss.					
148.1- 148.6	Quartz carrying sulphides, garnet and ilmenite.					
148.6- 160.1	Garnetiferous Biotite Gneiss with considerable quartz carrying sulphides, garnet and ilmenite.					
160.1- 163.8	Sericite schists carrying sulphides, garnet and ilmenite.					
163.8- 192.2	Garnetiferous Biotite Gneiss with Quartz and narrow bands of hornblende.					
192.2- 211.7	Biotite gneiss.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No.	4			Depth	106.0-N
Angle	53	Started	1-20-53	Elevation	747
Strike	N-42-W	Finished	2-17-53	Location from vertical shaft	106.0-N 398.0-E

Sec. 86 Blk. 83

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
211.7-215.6	Chlorite and quartz carrying sulphides.					
215.6-217.1	Sericite schist.					
217.1-219.2	Biotite gneiss and Chlorite with quartz. Core lost 1.0					
219.2-220.2	Garnetiferous Biotite Gneiss.					
220.2-226.0	Pegmatite carrying cassiterite. 223.6-225.2 Core lost 2.8	5H4	.029			
226.0-229.2	Garnetiferous Biotite Gneiss.					
229.2-231.8	Chlorite and quartz.					
231.8-236.2	Biotite gneiss and Chlorite with quartz.					
236.2-245.7	Garnetiferous Biotite gneiss.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No.	4			Depth	502.0
Angle	53	Started	1-20-53	Elevation	747
Strike	N-42-W	Finished	2-17-53	Location from vertical shaft	106.0-N 398.0-E

Sec. 86 Blk. 83

LOG	DESCRIPTION	Assay No.	Sn O2	Ni.	Cu.	Au.
245.7-250.7	Chlorite with quartz and Pegmatite.					
250.7-255.7	Biotite gneiss and Chlorite with quartz. Considerable sulphides.					
255.7-280.0	Chlorite with quartz and some Biotite gneiss.					
280.0-319.9	Chlorite with quartz, Biotite gneiss and Pegmatite. Heavy sulphides to 270.0	644 744	.021 .039			
	281.3-281.9 297.7-298.3					
319.9-365.0	Biotite gneiss and Chlorite with quartz.					
365.0-366.0	Actenolite.					
366.0-369.0	Biotite gneiss and Chlorite with quartz.					
369.0-369.5	Actenolite.					

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 4
Angle 53
Strike N-42°-W

Started 1-20-53
Finished 2-17-53

Depth 502.0
Elevation 747
Location from 106.0-N
vertical shaft 398.0-E

Sec. 86 Blk. 83

LOG	DESCRIPTION	Assay No.	SnO_2	Ni.	Cu.	Au.
369.5-395.8	Biotite gneiss and Chlorite with quartz.					
395.8-405.8	Garnetiferous Biotite gneiss and Chlorite with quartz all carrying numerous pegmatite stringers.					
405.8-408.1	Biotite gneiss with disseminated sulphides.					
408.1-418.2	Garnetiferous Biotite gneiss and Chlorite with quartz. Also numerous pegmatite stringers.					
418.2-419.2	Biotite gneiss.					
419.2-502.0	60% Pegmatite stringers to 4 feet thick carrying visable cassiterite in some places and 40% Biotite gneiss. 445.2 - 446.2	8H4	.038			

BANTA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 5
Angle Verticle
Strike Zero

Started 1-31-53
Finished 2-2-53

Depth 119.0
Elevation 730
Location from vertical shaft 81.0-S 15.0-E

LOG	DESCRIPTION	Assay No.	SnO_2	Ni.	Cu.	Au.
	This hole was drilled to a depth of 80 feet with a coil sampler and from 80 to 119 feet with diamond bit.					
00.0-23.0	No sample.					
23.3-25.3	Biotite gneiss.					
25.3-35.5	No sample.					
35.5-39.0	Biotite gneiss.					
39.0 55.8	No sample.					
55.8-58.0	Greisen					
58.0-65.4	No sample.					
65.4-68.4	Greisen					

BATA MINING COMPANY
ROSS TIN MINE

DIAMOND DRILL REPORT

Hole No. 5
Angle Verticle
Strike Zero

Started 1-31-53
Finished 2-2-53

Depth 119.0
Elevation 730
Location from 81.0-S
vertical shaft 15.0-E

Sec. 74-Blk. 15

LOG	DESCRIPTION	Assay No.	SnO_2	Ni.	Cu.	Au.
68.4-80.0	No sample					
80.0-96.5	Greisen					
96.5-100.0	Core lost.					
100.0-102.0	Actenolite and sulphides.					
102.0-107.0	Pegmatite.					
107.0-111.0	No sample					
111.0-119.0	Biotite gneiss.					

May 27, 1953

Mr. David Banta
Banta Mining Company
1520 Dime Building
Detroit, Michigan

DMEA-3047
Subject: Exploration Assistance
Re:

My dear Mr. Banta:

The receipt of your application dated May 23, 1953 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3047 and referred to the Iron and Ferro-Alloys Division.

Kindly refer to DMEA-3047 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams
Chief, Operations Control
and Statistics Division

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

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

Not to be filled in by applicant

Docket No. DMEA-3047
Metal or Mineral
Date Received 5/25/53
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Banta Mining Company (A Michigan Corporation)
1520 Dime Building
Detroit, Michigan

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Ross Tin Mine (Owned by Ross Land Co)
J.C. Bonner Farm (Owned by J. C. Bonner)

(*b*) State any mine name by which the property is known.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Held by Leases - Copies hereto attached

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

All readily available.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Tin, Beryl, Cobalt, Nickel, Platinum groupe, Rare earths and Tungsten.

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within 15 days and be completed within 10 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated May 23, 1953

Banta Mining Company
(Applicant)

By David Banta, Pres.

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

DAVID BANTA
PRES. & GEN. MGR.

JOHN W. KOZAKAR
EXECUTIVE VICE PRESIDENT

ROBERT A. GRENN
SECRETARY

JOSEPH J. MALTESE
TREASURER

BANTA MINING COMPANY

1520 DIME BUILDING

DETROIT, MICHIGAN

FIELD OFFICE:
GAFFNEY,
SOUTH CAROLINA

May 7, 1953

Form M F - 103

Item 1. Name of applicant.-

(c) David Banta, Pres. & Gen. Mgr., 708 Union Street, Gaffney, South Carolina.

John W. Kozakar, Exec. V. P. Box 744, Detroit, Michigan.

Robert A. Grenn Sec. 1520 Dime Building, Detroit, Michigan.

Joseph A. Maltese, Treas. 140 Buckingham, Riverside, Ontario.

Item 5.

(d) Banta Mining Company is a young company organized and incorporated in Detroit, Michigan in 1952 and is domesticated in the State of South Carolina. The company was organized for the expressed purpose of developing and operating The Ross Tin Mine and other tin deposits of the Carolinas. Most of its principal stock holders are business and professional men including mining and geology industrial engineers and architectual engineers.

David Banta who is president and general manager of the company is in full charge and responsible for all field operations and will continue to supervise such work throughout its entire exploration program.

<u>Qualifications of David Banta</u>.

Born in Texas 1895.

Education - High school completed Como, Texas.

College education interrupted by service with the armed forces, World War 1.

Studies in geology, mining, various engineering courses and business through correspondences courses.

Experience -Thirth seven years experience in various phases of geology and mining including geophysical work, economic and structural geology, exploration by diamond drilling and other methods, research on various flow sheets and other phases of mining.

including prospecting.

Also included was a geological surveys for plant sites in Montana and Idaho for the U. S. Atomic Energy Commission.

Six years of his geological and mining work was spent in the Carolinas, a great portion of which was research and the geologic study of the tin belt.

Item 6.

(a)	Independent contracts.-Approximately 8,000 feet of diamond drilling @ $4.50 per foot.	$36,000.00
(b)	Labor supervision, consultants.-Labor for cutting brush, clearing roads, core splitting and preparing samples and general work.	2,040.00
	Supervision and Engineering 34 weeks @ $200	6,800.00
	Consultants.	1,500.00
(c)	Operating material and supplies 300 core boxes @ $3.50.	1,050.00
(d)	Operating equipment-One small truck.	1,600.00
(e)	Rehabilitation and repairs-none.	
(f)	New buildings, improvements, installations.-None.	
(g)	Miscellaneous.-None.	
(h)	Contingencies.-Analyses and assaying cores	3,250.00
	Core storage and working space for core splitting 10 months @$20.00	200.00

Item 7.

(a) Yes.

(b) In cash by sale of additional stock.

Total - - - - - - $51,490.00

STATE OF SOUTH CAROLINA)
:
COUNTY OF CHEROKEE)

MINING LEASE

This agreement made and entered into this 26th day of February, 1953, by and between J. C. Bonner of Cherokee County, South Carolina, hereinafter called Lessor, and Banta Mining Company, a Michigan Corporation, hereinafter called Lessee:

WITNESSETH:

1. That lessor in consideration of the sum of One ($1.00) Dollar, paid by lessee, the receipt of which is hereby acknowledged and in further consideration of the rents and royalties to be paid, and the covenants and conditions to be kept and performed, as herein named, by the lessee, does hereby contract to rent and lease and by these presents does rent and lease to Banta Mining Company, its successors and assigns, the following described real estate, to wit:

> "ALL that certain piece, parcel or tract of land lying and being situate in Limestone Township, District 28, State and County above named, bounded by lands of J. H. Harrison, W. C Millwood, Holden Spencer, ourselves and others, and being a portion of what is known as the W C. Millwood farm. BEGINNING at a stake in the center of the branch on Holden Spencer's line and running N. 21-20 E. 33.78 chains to an iron pin, J H. Harrison and A. L. Lawing's corner; thence N. 68 W. 20.00 chains to a stake in the Sanders branch; thence up and with the meanders of Sanders branch, 22.00 chains to the mouth of the first named branch; thence up and with the meanders of the branch to the beginning corner, 32.14 chains, containing fifty-six and one-half (56.5) acres, more or less. It is agreed that The Ross Land Company and its successors shall have a road or an outlet for their property at rear of A. L. Lawings tract. This road shall be along the land line at rear of Harrison's tract. This is the identical tract of land heretofore conveyed to J. S. Elliott by deed of Ross Land Company, which is recorded in Deed Book "2-H", page 638, Clerk's Office, Cherokee County, S. C.
> ALSO: ALL that certain piece, parcel or lot of land lying and being situate in Limestone Township, State and County above named, bounded by lands of W. C. Millwood, myself and others. BEGINNING at an iron pin on the West side of the Filter Plant Road, Millwood's corner, and running N. 68-23 W. 961 feet to an iron pin on the line of Ross Land Company; thence N. 21-10 E. 15 feet to an iron pin; thence S. 68-23 E. 961 feet to a stake at the Filter Plant Road; thence S. 21-10 W. 15 feet to the beginning corner, containing one-third/8th acre, more or less. This is the identical property heretofore conveyed to J. S. Elliott by deed of J. H. Harrison, dated the 27th. day of October, 1931 and recorded in Deed Book "2-H",page 639, Clerk's Office, Cherokee County, S. C.
> ALSO: A seven and one-half foot strip of land adjoining the fifteen foot strip of land which I have already deeded to Mr. Elliott and in addition,

a pole line or power line right across my land, PROVIDED that this road be a private one for the use and use only of the parties thereto and that the said J. H. Harrison is to have free rights to the road and the power line. And as further CONDITION to this DEED, J. H. Harrison reserves the right to pass any rights which he gains herewith to parties to whom he might later sell lots of land. This is the identical strip of land heretofore conveyed to J.S. Elliott by deed of J. H. Harrison, dated the 9th. of March, 1935, and recorded in Volume "2-L", page 349, Clerk's Office, Cherokee County, S. C. The above described property is subject to easement reserved by J. H. Harrison to use the road and power line described in his deed recorded in Deed Book "2-L", page 349; also, this property is conveyed subject to easement of Southern Public Utilities Company for power line right-of-way, as shown by easement from J. S. Elliott and Mary M. Elliott to Southern Public Utilities Company, dated March 13, 1935, and recorded in Deed Book "2-K", page 472."
This is the identical property heretofore conveyed to J. C. Bonner by deed of J. S. Elliott, dated the 29th. day of May, 1946 and recorded in Deed Book "3-I", at page 526, in the office of the Clerk of Court for Cherokee County, S. C.

2. This lease shall run for the term of fifteen (15) years from the date hereof and may be renewed for fifteen (15) years more at the expiration thereof. This lease is given for the purpose only of exploring for and mining, taking out and removing therefrom merchantable shipping tin, gold, lead, silver, coal, oil or other mineral or substance which is or which hereafter may be found on, in or under said land, together with the right to construct all buildings, make all excavations, openings, ditches, drains, railroads, wagon roads, and other improvements upon said premises, which are or may become suitable or necessary for mining and removing of tin, gold, lead, silver, oil or other mineral or substance from the said premises, with the right to cut and use such timber thereon as may be necessary for the construction of buildings and for other usual purposes of such mining operations and for their own functions the full stumpage value thereof, special care being exercised to clear up and remove all combustible debris in order to prevent fires.

3. The lessee shall within a period of six (6) months from the execution of this instrument enter into and upon said lands with such force of labor, machinery and appliances as is necessary to dig, mine and otherwise expeditiously and promptly

prospect said lands and develop any minerals lying thereon and in; it being the clear intent of this agreement that the lessee is to vigorously, properly and with sufficient force of labor and machinery examine and open mines upon said premises and develop same, and such examinations, diggings and mining are to be continuous, and are to begin with six (6) months from the date of this instrument. Lessee further agrees to spend not less than the sum of Five Thousand ($5,000.00) Dollars, during the first twelve (12) months of this lease in prospecting and exploring said property and shall make known quarterly to the lessor the full facts and results of his findings. Any cessation of such work and mining for a period of six (6) months after commencement as aforesaid unless cessation of such work be for sufficient and unavoidable cause, shall render this contract null, void and of none effect. However, it is the clear understanding that this lease is given for the purpose of prospecting and exploring as well as for actual mining operations. If, after the exploration and drilling work has been done, a sufficient body of ore has been proved to justify mining operations, then a period of twelve (12) months shall be allowed the lessee for the purpose of negotiating and obtaining additional capital, during which period no work is required to be done to keep the lease in full force and effect. After the above mentioned period of twelve (12) months has elapsed, development work shall be construed to be mining operations within the meaning of this contract, and such mining operations shall be commenced at that time. However, mining operations may be suspended by mutual consent of both parties to this agreement at such times that it is advantageous to both parties to do so. Such consent to cessation of mining operations shall be in writing and signed by both parties. Any cessations of mining when agreed to by both parties as set out above shall not void this contract. The lessee may put in engines and machinery, build roads and do such things on said premises as may be necessary or usual to carry on such mining operations; all such engines, machinery, buildings and improvements so put up or erected and material found on the land, shall form part of the realty, it being understood that the lessee, in the termination of this lease, by paying up arrears which may be or become due and owing and payable on this

lease to said lessor, may remove, within ninety (90) days after such termination, such buildings, engines, machinery and improvements; PROVIDED, that all mining of tin, gold, lead, silver, coal, oil or other mineral or substance shall be in such manner only as is usual and customary in skillful and proper mining operations of similar character, when conducted by the Proprietors themselves, and so as not to do, cause, or permit any unnecessary or unusual permanent injury to the same, or inconvenience or hindrance in the subsequent operations of the mines; and at the termination of this agreement, whether by the acts of the parties or either of them, or by limitations or otherwise, shall be left in good order and good workmanlike condition; and in working of said mining, the lessee shall deposit all earth and rubbish at such places and in such manner as will not obstruct or embarrass future operations of said mines; and lessee shall not remove or impair any support, timbers, frame work or shafts necessary or proper for the use and maintenance of such mines or the approaches thereto, nor shall any tram road, railroad tracks, ditches, of a permanent nature, made by the lessee be impaired, removed or destroyed by said lessee, at the termination of this lease. However, the lessor may require the lessee to fill all open ditches and cover all shafts made by lessee in a substantial manner for the protection and safety of the lessor and his tenants and the public.

4. The lessee shall pay to the lessor a royalty or rental on all tin, gold, lead, silver, coal, oil or other mineral or substance removed from said premises during the existence of this lease of ten (10%) percent of the gross value of such minerals or substances that are shipped and sold without any deduction for expenses whatsoever, except that lessor shall pay freight on his ten (10%) percent. PROVIDED, that the lessor shall receive a minimum of One Thousand ($1,000.00) Dollars per annum in royalties or rents from said property and in case said royalties, as provided for above, shall not equal or exceed the sum of $1,000.00 in each and every twelve-months period of operations, then said lessee shall pay to said lessor the difference between the royalties paid and the $1,000.00; this deficiency, if any, is to be paid within thirty (30) days after the end of each twelve-months period. Payments of

such royalty or rental shall be made on the fifteenth (15) day of each and every calendar month after the date of this lease and shall continue throughout the life of this lease and any extensions thereof. All payments shall be made to said lessor or his lawful agent. At the time of each shipment of any minerals or substances said lessee shall transmit to lessor a copy of all bills of lading for said shipment. Also the name of J. C. Bonner, the said lessor, shall appear on all bills of lading or statements to the buyers of said goods and the buyers of said minerals or substances shall be instructed to transmit to said lessor a statement of the amount of goods received in each shipment and the price of same. Lessee is to furnish lessor at each time that royalties or rentals are due, or any other reasonable times that demand is made, his books, invoices and statements showing receipts from sales of any minerals or substances. Lessee or his successors or assigns agrees to keep accurate books of record in Cherokee County, South Carolina, covering all phases of his operation. The lessor herein, or such persons as shall be designated by the lessor, shall have the right to inspect the property covered in this lease at any reasonable times. This shall include inspection of shafts, tunnels, wings, etc. and shall be at the lessor's risk. And the lessor shall at all times have possession and hold a lien on all tin, gold, lead, silver, coal, oil or other mineral or substances and all improvements made on said premises, as security for any unpaid balance on rents, royalties or taxes due and payable under this lease, and which lien may be enforced against such property in like manner as liens conferred by chattel mortgages are entitled to be enforced under the laws of the State of South Carolina.

(A) Lessee agrees to carry adequate workmen's compensation insurance on all employees and to accept full responsibility for any injuries or damage either to persons or property caused from his operations, or by his omissions. And the said lessee shall defend in court the said lessor should the lessor be made a party to any law suits arising from such injury or damage. In like manner the lessee shall accept the full responsibility for damages to other property such as stream pollution, etc. and shall defend said lessor in any action or cause of action arising from the same.

(B) Lessee shall use only such portions of said property as are necessary for mining operations and shall not interfere with the farming operations of the lessor or his tenants any more than possible. In the event that the lessee shall need to use part of the farming land, he shall notify lessor in time to prevent the planting of same. In case the land is already planted and it is necessary for the lessee to use same, then said lessee shall pay said lessor and his tenants the amount of damages done their crops.

5. The lessee agrees to pay all taxes, general or special upon land so leased, which may be assessed or become due, either against the land or the product mined, or any personal property on the leased land, from and after the date thereof, and at the termination of this lease to quietly and peacefully surrender possession of such land to the lessor.

6. The lessee shall not assign or transfer this lease without the written consent of lessor, however, the lessor cannot arbitrarily refuse to consent to assignment, but can refuse to consent when the assignee is financially such that the interests of the lessor, J. C. Bonner, would be seriously jeopardized by having to rely upon the assignee for payment of rentals and royalties instead of having Banta Mining Company to rely upon; and can refuse to consent to the assignment if the assignee is a person or concern of questionable business principles or of questionable moral character. The lessee shall have the right at any time to terminate this agreement insofar as it requires lessee to mine tin, gold, lead, silver, coal, oil or other mineral or substance on said lands, by giving ninety(90)days notice in writing to lessor, delivering personally or by mail; thereupon said lease shall terminate and all arrearages and sums due up to the date of termination shall be paid.

7. The lease is granted under the express condition that, if the rental or royalties and taxes due hereunder, are not paid when due or in the event of the termination of this lease as herein provided, or in case lessee shall fail to keep any of the covenants and conditions, then it shall be lawful for lessor, at his option, upon said leased premises, with or without previous notice or process, to re-enter, and the same to have and possess again as of his first and former estate, the lessee and all persons claiming under said

lease, wholly to exclude therefrom.

8. The lessee shall be responsible for any fires or damage that may occur to said lands except such as clearly occur by the acts of strangers or acts of God.

9. Lessor agrees and does hereby grant to lessee free ingress and egress to and from the leased lands, for the purpose only of mining and transporting therefrom tin, gold, lead, silver, coal, oil or other minerals or substances, as may be necessary or expedient in carrying out said mining operations.

10. The covenants, agreements and conditions of this lease shall run with the land and be binding upon the heirs, executors, administrators, successors and assigns of each and all of the parties hereto.

11. Lessor hereby warrants and agrees to defend the title to the said lands herein described, and agrees that the lessee shall have the right at any time to redeem for lessor, by payment, any mortgages or other liens on the above described lands in the event of default of payment by lessor, and be subrogated to the rights of the holder thereof. It is further specifically agreed that the lessor does hereby grant to the lessee, the right, option and privilege of purchasing the said real estate described in this lease, at the price of Five Hundred Thousand ($500,000.00) Dollars, during the beginning of the developments on this property or mining thereon, under this contract or any renewal thereof. Any royalties or rentals paid before this option to purchase is exercised shall not be applied on the purchase price as above stated.

IN TESTIMONY WHEREOF WE SIGN, this the 26th day of February, 1953.

Signed, Sealed and Delivered
in the Presence of:

J. C. Fort

Evelyn G. Hammett
As to Lessor

K. Bonner (SEAL)
LESSOR.

Signed, Sealed and Delivered in the Presence of:

BANTA MINING COMPANY,
A MICHIGAN CORPORATION (SEAL)

J. C. Foot

By: David Banta (SEAL)
David Banta, President.

Evelyn G. Hammett
As to President.

By: John Kozakar (SEAL)
John Kozakar, Executive Vice-Pres.

Louise Walker

By: Robert A. Grenn (SEAL)
Robert A. Grenn, Secretary.

Bertha Parker
As to Executive Vice-Pres. and Secretary.

LESSEE.

STATE OF SOUTH CAROLINA)
COUNTY OF CHEROKEE)

PERSONALLY appeared before me Evelyn G. Hammett and made oath that she saw the within named J. C. BONNER, as Lessor, sign, seal and as his act and deed deliver the within written Mining Lease, and that she with J. C. Foot witnessed the execution thereof.

Sworn to Before me this
26th day of February, 1953. Evelyn G. Hammett

J. C. Foot (SEAL)
Notary Public for South Carolina.

My Commission Expires: AT the will of the Governor.

STATE OF SOUTH CAROLINA)
COUNTY OF CHEROKEE)

PERSONALLY appeared before me Evelyn G. Hammett and made oath that she saw the within named Banta Mining Company, a Michigan Corporation, by David Banta, its President, sign, seal and as its act and deed deliver the within written Mining Lease, and that she with J. C. Foot witnessed the execution thereof.

Sworn to before me this
the 26th day of February, 1953. Evelyn G. Hammett

J. C. Foot (SEAL)
Notary Public for South Carolina.

My Commission Expires: At the Will of the Governor.

STATE OF MICHIGAN)
:
COUNTY OF WAYNE)

PERSONALLY appeared before me Bertha Parker and made oath that She saw the within named Banta Mining Company, a Michigan Corporation, by John Kozakar, its Executive Vice-President, and by Robert A. Grenn, its Secretary, sign, seal and as its act and deed deliver the within written Mining Lease, and that She with M. Louise Walker witnessed the execution thereof.

Sworn to before me this
14th day of March, 1953.

Bertha Parker

Arthur C Lumley (SEAL)
Notary Public for Michigan
My Commission Expires: Jan 29, 1954

STATE OF SOUTH CAROLINA)
:
COUNTY OF CHEROKEE)

RENUNCIATION OF DOWER

I, J. C. Lott, Notary Public, do hereby certify unto all whom it may concern, that Mrs. Mary H. Bonner, the wife of the above named J. C. Bonner, did this day appear before me, and upon being privately and separately examined by me, did declare that she does freely, voluntarily, and without any compulsion, dread or fear of any person or persons, whomsoever, renounce, release and forever relinquish unto the within named Banta Mining Company, a Michigan Corporation, its successors and assigns, all her interest and estate, and also her right and claim of Dower of, in or to all and singular the Premises within mentioned and released.

Given under my hand and seal this
26th day of February, 1953.

Mary H. Bonner

J. C. Lott (SEAL)
Notary Public for South Carolina.
My Commission Expires: At the Will of the Governor.

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STATE OF SOUTH CAROLINA

COUNTY O F CHEROKEE

J. C. BONNER,

LESSOR,

-to-

BANTA MINING COMPANY,
A MICHIGAN CORPORATION,

LESSEE.

MINING LEASE

(Duplicate)

Recorded Deed Book Vol.. " 4-C" at page 227
William E Bell, Clerk of Court for
Cherokee County, SC

CLERK OF
CLERK OF COURT

STATE OF SOUTH CAROLINA)
: **MINING LEASE**
COUNTY OF CHEROKEE)

This agreement made and entered into this 31st day of _____, 195_, by and between the Ross Land Company, a corporation of Cherokee County, South Carolina, hereinafter called lessor, and David Banta of Gaffney, S. C., hereinafter called lessee:

WITNESSETH:

1. That lessor in consideration of the sum of One ($1.00) Dollar, paid by lessee, the receipt of which is hereby acknowledged and in further consideration of the rents and royalties to be paid, and the covenants and conditions to be kept and performed, as herein named, by the lessee, does hereby contract to rent and lease and by these presents does rent and lease to David Banta, his heirs and assigns, the following described real estate, to wit:

> "ALL that certain piece, parcel or tract of land containing One Hundred Two and One-half (102½) acres, more or less, situate, lying and being about one and one-half miles North-east from Gaffney, in Limestone Township, Cherokee County, South Carolina, and having according to plat thereof made by John M. Jenkins, Surveyor, dated June 15, 1931, with amendments thereon, the following metes and bounds, to wit: Beginning on Sander's Branch and running thence S. 41-32 E. 30-80 chains to iron; thence N. 60-42 E. 5.42 chains to iron; thence N. 4½ W. 5.80 chains; thence S. 84-50 E. 28.33 chains; thence N. 11 W. 6.85 chains; thence N. 21-20 E. 3.00 chains to branch; thence down and with said branch N. 33 3/4 W. 8.00 chains; N. 62-2 W. 2.50 chains; N. 20½ W. 3.00 chains; N. 77½ W. 1.84 chains; N. 32-10 W. 6.70 chains; N. 18 W. 2.60 chains; N. 55 3/4 W. 6.73 chains; N. 62 E. [illegible] chains to Sander's Branch; thence up and with Sander's Branch S. 55½ W. 7.00 chains; S. 70 W. 6.50 chains; S. 38 W. 8.00 chains; S. 60 W. 5.00 chains; S. 86½ W. 8.00 chains; S. 87 W. 4.60 chains to iron pin, the beginning corner. LESS: a tract of 9 1/3 acres of land heretofore conveyed therefrom by the Ross Land Company from the North-eastern corner of same to J. Willie Spencer; and EXCEPT a tract of land containing 3/5ths. of an acre, more or less, heretofore conveyed to Limestone Manufacturing Company by deed of Ross Land Company, dated June 28th, 1949 and recorded July 28th, 1949, in Deed Book "3-Q", at page 558, in the office of the Clerk of Court for Cherokee County, S. C."

2. This lease shall run for the term of fifteen (15) years from the date hereof and may be renewed for fifteen (15) years more at the expiration thereof. This lease is given for the purpose only of exploring for and mining, taking out and

removing therefrom merchantable shipping tin, gold, lead, silver, coal, oil or other mineral or substance which is or which hereafter may be found on, in or under said land, together with the right to construct all buildings, make all excavations, openings, ditches, drains, railroads, wagon roads, and other improvements upon said premises, which are or may become suitable or necessary for mining and removing of tin, gold, lead, silver, oil or other mineral or substance from the said premises, with the right to cut and use such timber thereon as may be necessary for the construction of buildings and for other usual purposes of such mining operations and for their own functions the full stumpage value thereof, special care being exercised to clear up and remove all combustible debris in order to prevent fires.

3. The lessee shall within a period of ninety (90) days from the execution of this instrument enter into and upon said lands with such force of labor, machinery and appliances as is necessary to dig, mine and otherwise expeditiously and promptly prospect said lands and develop any minerals lying thereon and in; it being the clear intent of this agreement that the lessee is to vigorously, properly and with sufficient force of labor and machinery examine and open mines upon said premises and develop same, and such examinations, diggings and mining are to be continuous, and are to begin within ninety (90) days from the date of this instrument. Lessee further agrees to spend not less than the sum of Twenty Thousand ($20,000.00) Dollars, during the first twelve (12) months of this lease in prospecting and exploring said property and shall make known quarterly to the lessor the full facts and results of his findings. Any cessation of such work and mining for a period of six (6) months after commencement as aforesaid unless cessation of such work be for sufficient and unavoidable cause, shall render this contract null, void and of none effect. However, it is the clear understanding that this lease is given for the purpose of prospecting and exploring as well as for actual mining operations. If, after the exploration and drilling work has been done, a sufficient body of ore has been proved to justify mining operations, then a period of twelve (12) months shall be allowed the lessee for the purpose of negotiating and obtaining additional capital, during

which period no work is required to be done to keep the lease in full force and effect. After the above mentioned period of twelve (12) months has elapsed, development work shall be construed to be mining operations within the meaning of this contract, and such mining operations shall be commenced at that time. However, mining operations may be suspended by mutual consent of both parties to this agreement at such times that it is advantageous to both parties to do so. Such consent to cessation of mining operations shall be in writing and signed by both parties. Any cessations of mining when agreed to by both parties as set out above shall not void this contract. The lessee may put in engines and machinery, build roads and do such things on said premises as may be necessary or usual to carry on such mining operations; all such engines, machinery, buildings and improvements so put up or erected and material found on the land, shall form part of the realty, it being understood that the lessee, in the termination of this lease, by paying up arrears which may be or become due and owing and payable on this lease to said lessor, may remove, within ninety (90) days after such termination, such buildings, engines, machinery and improvements; PROVIDED, that all mining of tin, gold, lead, silver, coal, oil or other mineral or substance shall be in such manner only as is usual and customary in skillful and proper mining operations of similar character, when conducted by the Proprietors themselves, and so as not to do, cause, or permit any unnecessary or unusual permanent injury to the same, or inconvenience or hindrance in the subsequent operations of the mines; and at the termination of this agreement, whether by the acts of the parties or either of them, or by limitations or otherwise, shall be left in good order and good workmanlike condition; and in working of said mining, the lessee shall deposit all earth and rubbish at such places and in such manner as will not obstruct or embarrass future operations of said mines; and lessee shall not remove or impair any support, timbers, frame work or shafts necessary or proper for the use and maintenance of such mines or the approaches thereto, nor shall any tram road, railroad tracks, ditches, of a permanent nature, made by the lessee be impaired, removed or destroyed by said lessee, at the termination of this lease. However, the lessor may require the lessee to fill

all open ditches and cover all shafts made by lessee in a substantial manner for the protection and safety of the lessor and its tenants and the public.

4. The lessee shall pay to the lessor a royalty or rental on all tin, gold, lead, silver, coal, oil or other mineral or substance removed from said premises during the existence of this lease of ten (10%) percent of the gross value of such minerals or substances that are shipped and sold without any deductions for expenses whatsoever, except that lessor shall pay freight on his ten (10%) percent. PROVIDED, that the lessor shall receive a minimum of One Thousand ($1,000.00) Dollars per annum in royalties or rents from said property and in case said royalties, as provided for above, shall not equal or exceed the sum of $1,000.00 in each and every twelve-months period of operations, then said lessee shall pay to said lessor the difference between the royalties paid and the $1,000.00; this deficiency, if any, is to be paid within thirty (30) days after the end of each twelve-months period. Payments of such royalty or rental shall be made on the fifteenth (15) day of each and every calendar month after the date of this lease and shall continue throughout the life of this lease and any extensions thereof. All payments shall be made to said lessor or his lawful agent. At the time of each shipment of any minerals or substances said lessee shall transmit to lessor a copy of all bills of lading for said shipment. Also the name of the Ross Land Company, the said lessor, shall appear on all bills of lading or statements to the buyers of said goods and the buyers of said minerals or substances shall be instructed to transmit to said lessor a statement of the amount of goods received in each shipment and the price of same. Lessee is to furnish lessor at each time that royalties or rentals are due, or any other reasonable times that demand is made, his books, invoices and statements showing receipts from sales of any minerals or substances. Lessee or his successors or assigns agrees to keep accurate books of record in Cherokee County, South Carolina, covering all phases of his operation. The lessor herein, or such persons as shall be designated by the lessor, shall have the right to inspect the property covered in this lease at any reasonable times. This shall include inspection of shafts, tunnels, wings, etc. and

shall be at the lessor's risk. And the lessor shall at all times have possession and hold a lien on all tin, gold, lead, silver, coal, oil or other mineral or substances and all improvements made on said premises, as security for any unpaid balance on rents, royalties or taxes due and payable under this lease, and which lien may be enforced against such property in like manner as liens conferred by chattel mortgages are entitled to be enforced under the laws of the State of South Carolina.

(A) Lessee agrees to carry adequate workmen's compensation insurance on all employees and to accept full responsibility for any injuries or damage either to persons or property caused from his operations, or by his omissions. And the said lessee shall defend in court the said lessor should the lessor be made a party to any law suits arising from such injury or damage. In like manner the lessee shall accept the full responsibility for damages to other property such as stream pollution, etc. and shall defend said lessor in any action or cause of action arising from the same.

(B) Lessee shall use only such portions of said property as are necessary for mining operations and shall not interfere with the farming operations of the lessor or his tenants any more than possible. In the event that the lessee shall need to use part of the farming land, he shall notify lessor in time to prevent the planting of same. In case the land is already planted and it is necessary for the lessee to use same, then said lessee shall pay said lessor and his tenants the amount of damages done their crops.

5. The lessee agrees to pay all taxes, general or special upon land so leased, which may be assessed or become due, either against the land or the product mined, or any personal property on the leased land, from and after the date thereof, and at the termination of this lease to quietly and peacefully surrender possession of such land to the lessor.

6. The lessee shall not assign or transfer this lease without the written consent of lessor, however, the lessor cannot arbitrarily refuse to consent to assignment, but can refuse to consent when the assignee is financially such that the interests of the Ross Land Company would be seriously jeopardized by having to rely upon the assignee for payment of rentals and royalties instead of

having David Banta to rely upon; and can refuse to consent to the assignment if the assignee is a person or concern of questionable business principles or of questionable moral character. The lessee shall have the right at any time to terminate this agreement insofar as it requires lessee to mine tin, gold, lead, silver, coal, oil or other mineral or substance on said lands, by giving ninety (90) days notice in writing to lessor, delivering personally or by mail; thereupon said lease shall terminate and all arrearages and sums due up to the date of termination shall be paid.

7. The lease is granted under the express condition that, if the rental or royalties and taxes due hereunder, are not paid when due or in the event of the termination of this lease as herein provided, or in case lessee shall fail to keep any of the covenants and conditions, then it shall be lawful for lessor, at his option, upon said leased premises, with or without previous notice or process, to re-enter, and the same to have and possess again as of his first and former estate, the lessee and all persons claiming under said lease, wholly to exclude therefrom.

8. The lessee shall be responsible for any fires or damage that may occur to said lands except such as clearly occur by the acts of strangers or acts of God.

9. Lessor agrees and does hereby grant to lessee free ingress and egress to and from the leased lands, for the purpose only of mining and transporting therefrom tin, gold, lead, silver, coal, oil or other minerals or substances, as may be necessary or expedient in carrying out said mining operations.

10. The covenants, agreements and conditions of this lease shall run with the land and be binding upon the heirs, executors, administrators, successors and assigns of each and all of the parties hereto.

11. Lessor hereby warrants and agrees to defend the title to the said lands herein described, and agrees that the lessee shall have the right at any time to redeem for lessor, by payment, any mortgages or other liens on the above described lands in the event of default of payment by lessor, and be subrogated to the rights of the holder thereof. It is further specifically agreed that the lessor does hereby grant to the lessee the right, option and

privilege of purchasing the said real estate described in this lease, at the price of Five Hundred Thousand ($500,000.00) Dollars, during the beginning of the developments on this property or mining thereon, under this contract or any renewal thereof. Any royalties or rentals paid before this option to purchase is exercised shall not be applied on the purchase price as above stated.

IN TESTIMONY WHEREOF WE SIGN, this the 31st day of December, 1952.

Signed, Sealed and Delivered in the Presence of:

Drusilla Brackett
E. M. Johnson
As to President.

J. C. Fort
Evelyn G. Hammett
As to Secretary & Treasurer.

J. C. Fort
Evelyn G. Hammett
As to David Banta.

ROSS LAND COMPANY, A CORPORATION,

By: W. W. Akers Jr. (SEAL)
President

BY: Edward R. Jeffries (SEAL)
Secretary & Treasurer

David Banta (SEAL)
David Banta.

STATE OF NORTH CAROLINA)
COUNTY OF GASTON)

PERSONALLY appeared before me Drusilla Brackett and made oath that he saw the within named ROSS LAND COMPANY, by its President, W. W. Akers, Jr., sign, seal and as its act and deed deliver the within written contract, and he with E. M. Johnson witnessed the execution thereof.

Sworn to before me this 31 day of Dec, 1952.

Drusilla Brackett

E. M. Johnson (SEAL)
Notary Public for North Carolina.

My Commission Expires: Commission Expires August 28th, 1954

STATE OF SOUTH CAROLINA)
:
COUNTY O F CHEROKEE)

PERSONALLY appeared before me Evelyn G. Hammett and made oath that she saw the within named ROSS LAND COMPANY, by its Secretary and Treasurer, Edward R. Jefferies, sign, seal and as its act and deed deliver the within written contract, and that she with J. C. Fort witnessed the execution thereof.

Evelyn G. Hammett

Sworn to before me this the 31st day of December, 1952.

J. C. Fort (SEAL)
Notary Public for South Carolina.

STATE OF SOUTH CAROLINA)
:
COUNTY O F CHEROKEE)

PERSONALLY APPEARED before me Evelyn G. Hammett and made oath that she saw the within named David Banta, sign, seal and as his act and deed deliver the within written contract, and that she with J. C. Fort witnessed the execution thereof.

Evelyn G. Hammett

Sworn to before me this the 31st day of December, 1952.

J. C. Fort (SEAL)
Notary Public for South Carolina.

ASSIGNMENT AND ACCEPTANCE OF LEASE

For value received, David Banta and Edna Banta, his wife, hereby assign all their right, title and interest in and to the within Lease unto the Banta Mining Company, a Michigan Corporation, its successors and assigns.

In consideration of the above assignment and the written consent of the party of the first part thereto, Banta Mining Company, a Michigan Corporation, hereby assumes and agrees to make all the payments and perform all the covenants and conditions of the within Lease, by said party of the second part to be made and performed.

WITNESS our hands and seals this 31st day of December, A. D., 1952.

Signed, Sealed and Delivered in the Presence of:

J. C. Fort

Evelyn G. Hammett

As to David and Edna Banta.

J. C. Fort

Evelyn G. Hammett

As to David Banta.

Eve Wilson

Bertha Sarber

As to John Kozakar and Robert A. Grenn.

David Banta
David Banta

Edna Banta
Edna Banta

BANTA MINING COMPANY, A Michigan Corp.

By: David Banta
David Banta, President.

By: John Kozakar
John Kozakar, Executive Vice-Pres.

By: Robert A. Grenn
Robert A. Grenn, Secretary.

STATE OF SOUTH CAROLINA)
:
COUNTY OF CHEROKEE)

PERSONALLY appeared before me Evelyn G. Hammett and made oath that she saw the within named David Banta and Edna Banta, his wife, sign, seal and as their act and deed deliver the within Assignment of Lease, and that she with J. C. Fort witnessed the execution thereof.

Sworn to before me this the 31st day of December, 1952.

Evelyn G. Hammett

J. C. Fort (SEAL)
Notary Public for South Carolina.

STATE OF SOUTH CAROLINA)

COUNTY O F CHEROKEE)

PERSONALLY appeared before me Evelyn F. Hammett and made oath that she saw the within named BANTA MINING COMPANY, A Michigan Corporation, by David Banta, its President, sign, seal and as its act and deed deliver the within written Acceptance of Lease, and that she with J. C. Fort witnessed the execution thereof.

Sworn to before me this the 31st day of December, 1952.

Evelyn F. Hammett

J. C. Fort (SEAL)
Notary Public for South Carolina.

STATE OF MICHIGAN)

COUNTY OF WAYNE)

PERSONALLY appeared before me Bertha Farber and made oath that she saw the within named BANTA MINING COMPANY, A Michigan Corporation, by John Kozakar, its Executive Vice-President, and by Robert A. Grenn, its Secretary, sign, seal and as its act and deed deliver the within written Acceptance of Lease, and that he with Eve Wilson witnessed the execution thereof.

Sworn to before me this the 23 day of January, 1953.

Bertha Farber

Clifton O'Neill (SEAL)
Notary Public for Michigan.

My Commission Expires: 12-1-53

CONSENT TO ASSIGNMENT

Ross Land Company hereby consents to the assignment of the within Lease to Banta Mining Company, a Michigan Corporation, on the express condition, however, that no further assignment of said Lease or subletting of the premises or any part thereof shall be made without its written assent first being had thereto, according to the terms of the lease herein assigned.

WITNESS our hands and seals this 31st day of December, A. D., 1952.

Signed, Sealed and Delivered in the Presence of:

Drusilla Brackett

Gladys Forrester

As to President.

J. C. Fort

Evelyn F. Hammett

As to Secretary & Treasurer.

ROSS LAND COMPANY

By: [illegible]
President.

By: Edward R. Jefferies
Secretary and Treasurer.

STATE OF NORTH CAROLINA)

COUNTY OF GASTON)

PERSONALLY appeared before me Drusilla Brackett and made oath that she saw the within named ROSS LAND COMPANY, by its President, W. W. Ahern, Jr., sign, seal and as its act and deed deliver the within written Consent to Assignment, and that she with Gladys Forrester witnessed the execution thereof.

Sworn to before me this the 31 day of December, 1952.

Drusilla Brackett

Gladys Forrester (SEAL)
Notary Public for North Carolina.

My Commission Expires: 10-31-53

STATE OF SOUTH CAROLINA)

COUNTY OF CHEROKEE)

PERSONALLY appeared before me Evelyn G. Hammett and made oath that she saw the within named ROSS LAND COMPANY, by its Secretary and Treasurer, Edward R. Jefferies, sign, seal and as its act and deed deliver the within written Consent to Assignment, and that she with J. C. Fort witnessed the execution thereof.

Sworn to before me this the 31st day of December, 1952.

Evelyn G. Hammett

J. C. Fort (SEAL)
Notary Public for South Carolina.

Recorded Deed Book Vol. " 4-C" at page 226

William E Bell

William E Bell, Clerk of Court for Cherokee County , S C

Pass Land Deed
To
David Barta

4C
226

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Carolina, County of Cherokee, described ~~as follows~~ 1/

in Mining Lease of Ross Land Company to Banta Mining Company, dated the 31st. day of December, 1952, and recorded in Book B 4-C, at page 226, in the office of the Clerk of Court for Cherokee County, South Carolina,

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Banta Mining Company, a Michigan corporation,

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production 3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 30,000.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 18th. day of May, 1953.

Ross Land Company, Inc. [Seal]

By [signature] [Seal]
President

By Edward R. Jeffries [Seal]
Secretary & Treasurer

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Carolina, County of Cherokee, described ~~as follows~~ 1/

in Mining Lease of Ross Land Company to Banta Mining Company, dated the 31st. day of December, 1952, and recorded in Book B4-C, at page 226, in the office of the Clerk of Court for Cherokee County, South Carolina,

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Banta Mining Company, a Michigan corporation,

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production 3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 30,000.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 18th. day of May, 1953.

Ross Land Company, Inc. [Seal]

By [signature] [Seal]
President

By Edward R. Jeffries [Seal]
Secretary & Treasurer

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Carolina, County of Cherokee, described ~~as follows:~~ 1/

In Mining Lease of Ross Land Company to Danta Mining Company, dated the 31st. day of December, 1952, and recorded in Book B4-c, at page 226, in the office of the Clerk of Court for Cherokee County, South Carolina,

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Danta Mining Company, a Michigan corporation,

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 30,000.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 18th. day of May, 1953.

Ross Land Company, Inc. [Seal]

By [signature] [Seal]
President

By Edward R. Jeffries [Seal]
Secretary & Treasurer

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts; plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203 OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Carolina, County of Cherokee, described as follows 1/

In Mining Lease of Ross Land Company to Santa Mining Company, dated the 31st. day of December, 1952, and recorded in Book B 4-C, at page 226, in the office of the Clerk of Court for Cherokee County, South Carolina.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Santa Mining Company, a Michigan corporation,

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 30,000.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 10th. day of May, 1953.

Ross Land Company, Inc. [Seal]

By [signature] [Seal]
President

By Edward R. Jones [Seal]
Secretary & Treasurer

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

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MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Carolina, County of Cherokee, described as follows:1/

In a lease of Ross Land Company to Santa Mining Company, dated the 31st. day of December, 1952, and recorded in Book B4-C, at page 226, in the office of the Clerk of Court for Cherokee County, South Carolina,

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Santa Mining Company, a Michigan corporation,

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ [illegible], or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this [illegible] day of [illegible], 195[illegible].

Ross Land Company, Inc. [Seal]

By [signature] [Seal]
President

By Edward R. Jeffries [Seal]
Secretary & Treasurer

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

MF-203

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of South Carolina, County of Cherokee, described as follows 1/

In the case of Ross and Company, a [illegible], dated the [illegible] Plat, as of [illegible], 1[illegible], and recorded in Book B4-C, at page 226, in the office of the Clerk of Court for Cherokee County, South Carolina.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Ross Land Company, Inc.

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production 3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ _____, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this [illegible] day of [illegible], 195[illegible].

Ross Land Company, Inc. [Seal]

By [signature] [Seal]
President

By Edward R. [signature] [Seal]
Secretary & Treasurer

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

DAVID BANTA
PRES. & GEN. MGR.

[illegible]N W. KOZAKAR
EXECUTIVE VICE PRESIDENT

ROBERT A. [illegible]NN
SECRETARY

JOSEPH J. MALTESE
TREASURER

BANTA MINING COMPANY

1520 DIME BUILDING

DETROIT, MICHIGAN

FIELD OFFICE:
GAFFNEY,
SOUTH CAROLINA

708 Union Street
May 25, 1953

Defense Minerals Exploration Administration
Washington 25, 1953

Gentlemen:

A few days ago we mailed application for D. M. E. A. assistance in the exploration of The Ross Tin Mine near Gaffney, S. C.

We neglected to enclose prints of our proposed diamond drill program. Four copies of same are herewith enclosed.

Yours very truly,

Banta Mining Company

David Banta

David Banta

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 26 1953

THE ROSS TIN MINE

Structural Geology

J. P. Jennings, Jr.
Geologist

Southeastern Diamond Drilling Co.

DIAMOND CORE DRILLING
FOUNDATION BORINGS
SOUNDINGS
GEOPHYSICAL SURVEYS
MINING ENGINEERS
GEOLOGISTS

ROOM 900 FLAT IRON BUILDING
ASHEVILLE, NORTH CAROLINA
TELEPHONE 3-5451

APR 25 1953

March 31, 1953

Mr. David Banta, President and General Manager
Banta Mining Company
Gaffney, South Carolina

Dear Sir:

In March 1953, you commissioned the writer to submit to your company a brief report on the writer's opinion of the Geological structure, as he might find present, at the Ross Tin Mine, Gaffney, South Carolina.

The writer has been on the property, has examined all of the Diamond Drill Cores obtained from drilling holes one through five on the property, and has formed a picture in his mind of the subsurface Geologic conditions present as interpreted from the above study. But, without access to the cores this study would have been impossible. The saprolite, a product of weathering, on the property is so deep that few outcrops can be found. I would question somewhat the dip and strike each may yield as to being true. Furthermore, I have gone over some of the various reports, as written by others, on this property and it is readily visible that their lack of access to any drill cores in the past has greatly handicapped their conclusions pertaining to subsurface Geologic structure present. In fact, the writer finds no record of any Diamond Drilling previous to your initial drilling program completed in February 1953.

It is an honor to submit my report to you and as I write it I do so without any prejudice whatsoever.

Respectfully submitted, I am

Very truly yours,

J. P. Jennings, Jr.

J. P. Jennings, Jr., Geologist
SOUTHEASTERN DIAMOND DRILLING COMPANY

QUALIFICATIONS

The writer is the fifth generation in his family to pursue a mining profession.

He was reared in the Anthracite Mining fields in Pennsylvania where his father was a consulting mining engineer. Preliminary schooling was in that area.

He completed his undergraduate training in Mining Geology with a B. S. Degree in that subject at Lafayette College, Easton, Pennsylvania. Subsequent courses in Field Geology, Structural Geology, and Mining Geology were afforded the writer at Pennsylvania State College, California Institute of Technology and Yale University. He completed this training in 1938.

Since 1938 the writer has been engaged as a Geologist, Mining Engineer, and Mine Superintendent by organizations such as Panaminas, Inc., a subsidiary of Ventures Ltd.; by Mr. Robert Y. Moffitt; by the Ivanhoe people; by Messrs. George and Tom Tuff; the Campbell Limestone Company and many others in the Southeast. In 1945 he became engaged in connection with the Southeastern Diamond Drilling Company and since that time has been in charge of all drilling operations and geological work undertaken by this company on many properties and areas from Maryland to Florida and Louisiana. This work has been on all types of geological work and drilling and pertaining to problems relating to mines and mining properties for concerns such as the Tennessee Copper Company and on problems pertaining to dams, tunnels, bridges, heavy building construction, and others for organizations such as the U. S. Corp of Engineers, various municipalities, and many private industries such as Du Pont, etc.

ROSS TIN MINE

Structural Geology

The area involving the Ross Tin Mine is a mineralized area embracing a section of Roan Gneiss having a width of approximately 600 feet and lies between the Carolina Gneiss on the West and the Whiteside Granite on the East. A study of the drill cores shows that almost the full width of the upper mineralized fingers in the mineralized zone have been crossed or penetrated by the drilling to date. This drilling has been confined to the upper limits of the zone. The writer can easily classify at least twelve types of formation penetrated by the first five drill holes and refers to his logs for this information.

If all five drill holes were plotted on the same profile (reference is made to Mr. Banta's profile of Diamond Drill holes one, two, three, four, and five as of February 23, 1953) and if each structure or bed as cut and plotted in any one hole were to be projected upward or downward to the next drill hole it could be quickly seen that these structures cannot be connected from hole to hole. As a graphic example man I present the following:

> Place your two hands together side by side with thumbs and palms downward and match both index fingers so that both hands touch as if they were one. Spread all fingers apart with the exception of the index fingers so that in reality there are seven fingers pointing outward. In this fashion draw or pencil an outline of each finger starting with the wrist and ending at the opposite wrist on a sheet of paper. Assuming that a horizonal line joining the tip of each middle finger were to result as the surface profile draw downward from it at any point a line meeting this imaginary surface line at an angle of approximately 45° to 65°. It will be seen that three or four fingers will be cut by the angled pencil line representing the Diamond Drill hole. The fingers will represent three or four structures or beds cut by the subject line and the areas between the fingers will represent other beds cut by the subject line. The writer uses this illustration to try to simply show and picture what is interpreted by him as the geological subsurface structural conditions existing as he sees them on the subject mining property.
>
> It will be further noticed that the areas between the fingers bottom out. (ie) Have no depth downward because the pencil lines resulting in this little sketch are solid and V shaped downward. The fingers themselves are closed at the top in the pencil line sketch but are open on the bottom and seem to join in a mass zone downward. These fingers are the areas of greatest mineralization. They are light in color and seem or appear to be beds of Archean sediments highly metamorphosed and soaked with silica vapors resulting from a mass intrusive below.

ROSS TIN MINE - Structural Geology

Diamond Drill hole number four was the deepest hole drilled and probably cut an area on our little sketch just below the little finger, the ring finger, and the middle finger on the left side of the sketch. This hole showed all three fingers blending themselves together as the uppermost limits of a plug below. Examination of the core in hole number four from 400 feet to the bottom of the hole shows that the majority of it is the best source for a massive, highly disseminated ore body.

Many of the writers refer to the ore bodies as being dikes not veins. The writer agrees with them. Records show a concentration of tin values in these dikes. These dikes are the fingers in our sketch and are fairly narrow and irregular. The cores show no tin values at the contacts on either side of the fingers nor in the areas between the fingers.

CONCLUSIONS

The dikes carrying mineral values are fingers extending upward near the surface from a mass somewhere below which gave birth to the mineralized zones.

The uppermost limits of the mass below was probably cut in drill hole number four.

Structural control of the tin bearing zones is very important as an aid to future mineable tonnage. It will aid in yielding a very large low grade disseminated mass rather than an undesirable small tonnage of high grade ore.

Extreme caution should be taken in carrying out further drilling because other minerals such as Scheelite, Gold, Copper, and Acid-Source minerals were all noted by the writer in going over the cores.

Log of D.D.H. 1

Angle at 53°

Depth 217.2'

0.0 - 117.2	Saprolite or Overburden. (This zone was cased)
117.2 - 117.4	Serpentine Gneiss.
117.4 - 122.3	Feldspar with Quartz-Shattered and decomposed. Core lost 4.0
122.3 - 129.1	Biotite Gneiss somewhat altered. Light medium Sulphides. Core lost 4.3Ft.
129.1 - 130.0	Hornblende Gneiss (Pyroxene). Narrow bands of Feldspar carrying cassiterite. Medium light Sulphides.
130.0 - 132.4	Garnetiferous Biotite Gneiss considerably altered. Medium light Sulphides.
132.4 - 132.6	Hornblende Gneiss-Sulphides in seams.
132.6 - 142.3	Biotite Gneiss Greatly altered. Very light Sulphides. Core lost 8.3 Ft.
142.3 - 142.8	Actenolite and Hornblende.
142.8 - 143.4	Hornblende Gneiss and fine Biotite Gneiss.
143.4 - 144.6	Chlorite and Quartz with very light Sulphides. (Cut for Assay)
144.6 - 153.6	Core lost 9.0 (Cut for Assay)
153.6 - 154.1	Hornblende Gneiss.
154.1 - 154.5	Chlorite, Quartz and Feldspar.
154.5 - 154.8	Hornblende Gneiss.
154.8 - 156.3	Actenolite and Sulphides. (closely related to Hornblende Gneiss)
156.3 - 157.1	Chlorite and Quartz With Sulphides Contains bands of Actenolite.

157.1 - 159.5	Serpentine Gneiss.
159.5 - 165.3	Biotite Gneiss Medium heavy Sulphides.
165.3 - 167.0	Chlorite, Quartz and Feldspar. Light Medium Sulphides.
167.0 - 170.8	Dike Material Feldspar - Quartz Actenolite. (Cut for Assay)
170.8 - 172.0	Actenolite and Sulphides.
172.0 - 178.9	Pegmatite.
178.9 - 181.0	Actenolite and Sulphides. 2.0 core loss.
181.0 - 183.8	Biotite Gneiss. Medium Sulphides.
183.8 - 184.8	Hornblende Gneiss. Greatly altered. Sulphides.
184.8 - 185.1	Feldspar and Quartz. Some Cassiterite. Light Sulphides. (Cut for Assay)
185.1 - 187.6	Biotite Gneiss. Considerably altered. Good grade Vermiculite.
187.6 - 187.9	Feldspar and Quartz and Actenolite.
187.9 - 189.2	Garnetiferous Biotite Gneiss. Medium Sulphides.
189.2 - 189.5	Garnetiferous Biotite Gneiss and Actenolite.
189.5 - 191.2	Garnetiferous Biotite Gneiss. Heavy Sulphides.
191.2 - 191.4	Feldspar and Quartz.
191.4 - 198.5	Garnetiferous Biotite Gneiss Heavy Sulphides. Core lost 4.1 (Cut for Assay)
198.5 - 199.6	Actenolite and Sulphides Heavy Sulphides.
199.6 - 200.9	Garnetiferous Biotite Heavy Sulphides.

200.9 - 201.7	Garnetiferous Biotite Medium Sulphides.
201.7 - 202.2	Hornblende Gneiss. Light Sulphides in seams.
202.2 - 202.8	Garnetiferous Biotite Gneiss.
202.8 - 202.9	Actenolite and Sulphides.
202.9 - 204.0	Garnetiferous Biotite Gneiss Light Sulphides.
204.0 206.7	Biotite Gneiss intruded by Pegmatite core lost 2.7 (Cut for Assay - Scheelite?)
206.7 - 209.8	Feldspar and Quartz-Possible Cassiterite. Core lost 3.0 (Cut for Assay)
209.8 - 210.4	Actenolite very light Sulphides.
210.4 - 217.2	Chlorite and Quartz. Light Sulphides. Vermiculite.

D.D.H. 2

Angle at 53°

Depth 139.0'

0.0 - 115.0	Saprolite. (This zone was cased)
	No core available from this drill hole. I have talked with the drill man who drilled this hole. He advises rock beyond casing was so altered and weathered that coring was impossible. The only information obtained was from returned sludge during drilling.
115.0 - 116.0	Biotite Gneiss (altered). Large quantity of Vermiculite.
116.0 - 119.4	Pegmatite. Feldspar altered to Kaolin freeing the quartz in granuals. Sludge contained Cassiterite.
119.4 - 121.4	Biotite Gneiss containing Vermiculite.
121.4 - 124.9	Biotite Gneiss carrying heavy Sulphides.
124.9 - 126.4	Biotite Gneiss carrying Sulphides.
126.4 - 128.4	Biotite Gneiss containing Vermiculite.
128.4 - 130.6	Actenolite and Sulphides.
130.6 - 131.8	Garnetiferous Biotite Gneiss.
131.8 - 133.8	Actenolite and Sulphides.
133.8 - 139.2	Actenolite and Hornblende.

D.D.H. 3

Angle at 53°

Depth 294.2'

0.0 - 51.0	Casing - Saprolite.
51.0 - 59.0	Biotite Gneiss. 3.1 Unaltered 4.9 considerably altered. Very light Sulphides. Water lost at 52.0 Ft. Regained by lowering casing.
59.0 - 86.8	Chlorite and Quartz. Mud seam at 69.0 water lost at 71.0 mineralized zone. (Cut for Assay)
86.8 - 87.3	Hornblende Gneiss.
87.3 - 89.5	Chlorite and Quartz. Heavy Sulphides.
89.5 - 91.4	Pegmatite.
91.4 - 95.6	Hornblende Gneiss. Garnetiferous Biotite and Actenolite. Bands of actenolite carrying brown tourmaline. Heavy Sulphides. At 96.9-97.9 Soft seam.
95.6 - 105.9	Pegmatite.
105.9 - 107.9	Biotite Gneiss Very Light Sulphides.
107.9 - 110.6	Garnetiferous Biotite Gneiss and Actenolite. Very heavy sulphides.
110.6 - 112.4	Garnetiferous Biotite Gneiss. Heavy Vermiculite.
112.4 - 112.8	Garnetiferous Biotite Gneiss and Actenolite.
112.8 - 114.0	Garnetiferous Biotite Gneiss.
114.0 - 139.2	Biotite Gneiss from 114.5 --117.0. (Cut for Assay)
139.2 - 169.4	Garnetiferous Biotite Gneiss and Actenolite. Light Sulphides. Core lost 2.5

169.4 - 179.4	Chlorite and Quartz.
179.4 - 191.6	Biotite Gneiss 0.5 Core lost. Core lost 4.1
191.6 - 200.3	Garnetiferous Biotite Gneiss. Light sulphides.
200.3 - 202.5	Biotite Gneiss. Medium Sulphides.
202.5 - 232.1	Garnetiferous Biotite Gneiss. Heavy Vermiculite. Light Sulphides. Core lost 0.4
232.1 - 233.5	Hornblende Gneiss.
233.5 - 236.1	Actenolite containing Quartz passing into Pegmatite.
236.1 - 237.6	Heavy Vermiculite in Garnetiferous Biotite Gneiss.
237.6 - 243.8	Garnetiferous Biotite Gneiss and Actenolite.
243.8 - 244.4	Garnetiferous Biotite Gneiss.
244.4 - 245.9	Actenolite.
245.9 - 246.6	Garnetiferous Biotite Gneiss and Actenolite.
246.6 - 248.7	Garnetiferous Biotite Gneiss.
248.7 - 249.4	Quartz.
249.4 - 251.5	Garnetiferous Biotite Gneiss.
251.5 - 267.6	Garnetiferous Biotite Gneiss and Actenolite. Core lost 1.3
267.6 - 284.2	Garnetiferous Biotite Gneiss Heavy Vermiculite. Sulphides.
284.2 - 286.8	Biotite Gneiss.
286.8 - 292.5	Garnetiferous Biotite Gneiss. Feldspar Gneiss. Pegmatite and Chlorite. Vermiculite. Sulphides. (Cut for Assay)
292.5 - 294.2	Garnetiferous Biotite Gneiss and Actenolite.

D.D.H. 4

Angle at 53°

Depth 502.0'

0.0 - 37.0	Casing (Saprolite or Overburden).
37.0 - 47.4	Hornblende Gneiss-altered. Core lost 9.5
47.4 - 50.6	Chlorite and Quartz with some Feldspar. Some Sulphides.
50.6 - 51.0	Actenolite with Sulphides.
51.0 - 51.3	Biotite Gneiss-altered.
51.3 - 52.5	Pegmatite-Shattered. Core lost 1.0
52.5 - 53.4	Hornblende Gneiss with some Quartz and Feldspar.
53.4 - 61.9	Chlorite and Quartz and some Pegmatite. At 60 feet ± Fluoresces (Scheelite?) (Cut for Assay)
61.9 - 73.5	Chlorite and Quartz with bands of Garnetiferous Biotite Gneiss.
73.5 - 74.5	Hornblende Gneiss and Actenolite.
74.5 - 76.6	Garnetiferous Biotite Gneiss. Light Sulphides.
76.6 - 77.1	Garnetiferous Biotite Gneiss, Hornblende Gneiss and Actenolite. Heavy Quartz.
77.1 - 77.9	Biotite Gneiss-altered. Core lost 0.1
77.9 - 78.4	Actenolite - highly sheered. (Assay for Ni.)
78.4 - 79.2	Garnetiferous Biotite Gneiss.
79.2 - 80.5	Biotite Gneiss, Feldspar and heavy Quartz impregnated with Rutile.
80.5 - 83.4	Hornblende Gneiss and Actenolite.
83.4 - 84.5	Garnetiferous Biotite Gneiss.

84.5 - 95.2	Garnetiferous Biotite Gneiss, Actenolite, Quartz and Feldspar. At 85.2 heavy Chlorite and Quartz impregnated with Rutile. (80 - 95) Ore horizon finger)
95.2 - 115.0	Sericite schist carrying garnet. Orthaclase, Ilmenite and possibly some fine grains of Cassiterite. Rock very hard and solid due to presence of Silica. (Cut for Assay)
115.0 - 122.6	Garnetiferous Biotite Gneiss with bands of Quartz and Feldspar carrying Sulphides.
122.6 - 123.5	Quartz carrying Sulphides, Garnet and Ilmenite and Actenolite (50%).
123.5 - 129.8	Garnetiferous Biotite Gneiss.
129.8 - 130.4	Glassy Quartz.
130.4 - 138.4	Actenolite and Sulphides.
138.4 - 138.7	Pegmatite with Cassiterite.
138.7 - 141.1	Hornblende Gneiss.
141.1 - 148.1	Garnetiferous Biotite Gneiss.
148.1 - 148.6	Quartz carrying Sulphides, Garnet and Fibrolite.
148.6 - 160.1	Garnetiferous Biotite Gneiss with considerable Quartz carrying Sulphides, Garnet and Ilmenite.
160.1 - 163.8	Sericite schists carrying sulphides, garnet and ilmenite. (Cut for Assay)
163.8 - 192.2	Garnetiferous Biotite Gneiss with Quartz and narrow bands of Hornblende.
192.2 - 211.7	Biotite Gneiss.
211.7 - 215.6	Choirite and quartz carrying sulphides.
215.6 - 217.1	Sericite schist. (Cut for Assay)

217.1 - 219.2	Biotite Gneiss and Chlorite with Quartz. Core lost 1.0
219.2 - 220.2	Garnetiferous Biotite Gneiss.
220.2 - 226.0	Pegmatite carrying Cassiterite. Core lost 2.8 (Cut for Assay)
226.0 - 229.2	Garnetiferous Biotite Gneiss.
229.2 - 231.8	Chlorite and Quartz.
231.8 - 236.2	Biotite Gneiss and Chlorite with Quartz.
236.2 - 245.7	Garnetiferous Biotite Gneiss.
245.7 - 250.7	Chlorite with Quartz and Pegmatite.
250.7 - 255.7	Biotite Gneiss and Chlorite with Quartz. Considerable Sulphides.
255.7 - 365.0	Quartz, Chlorite Pegmatite, possible ore zone showing tendency to a disseminated mass. (Cut for Assay)
	Split Core 306.0 - 309.0 separate and assay. Split Core from 335.0 - 344.0 and assay. Split Core from 358.0 - 361.0 and assay.
365.0 - 366.0	Actenolite.
366.0 - 369.0	Biotite Gneiss and Chlorite with Quartz.
369.0 - 369.5	Actenolite.
369.5 - 395.8	Biotite Gneiss and Chlorite with Quartz. (Split and assay sectional parts.)
395.8 - 405.8	Garnetiferous Biotite Gneiss and Chlorite with Quartz all carrying numerous Pegmatite stringers.
405.8 - 408.1	Biotite Gneiss with disseminated Sulphides.
408.1 - 418.2	Garnetiferous Biotite Gneiss and Chlorite with Quartz. Also numerous Pegmatite stringers.
418.2 - 419.2	Biotite Gneiss.

419.2 - 502.0	60% Pegmatite stringers to 4 feet thick carrying visable Cassiterite in some places and 40 % Biotite Gneiss. (Cut for Assay 442.0 - 467.0 in five sections.)

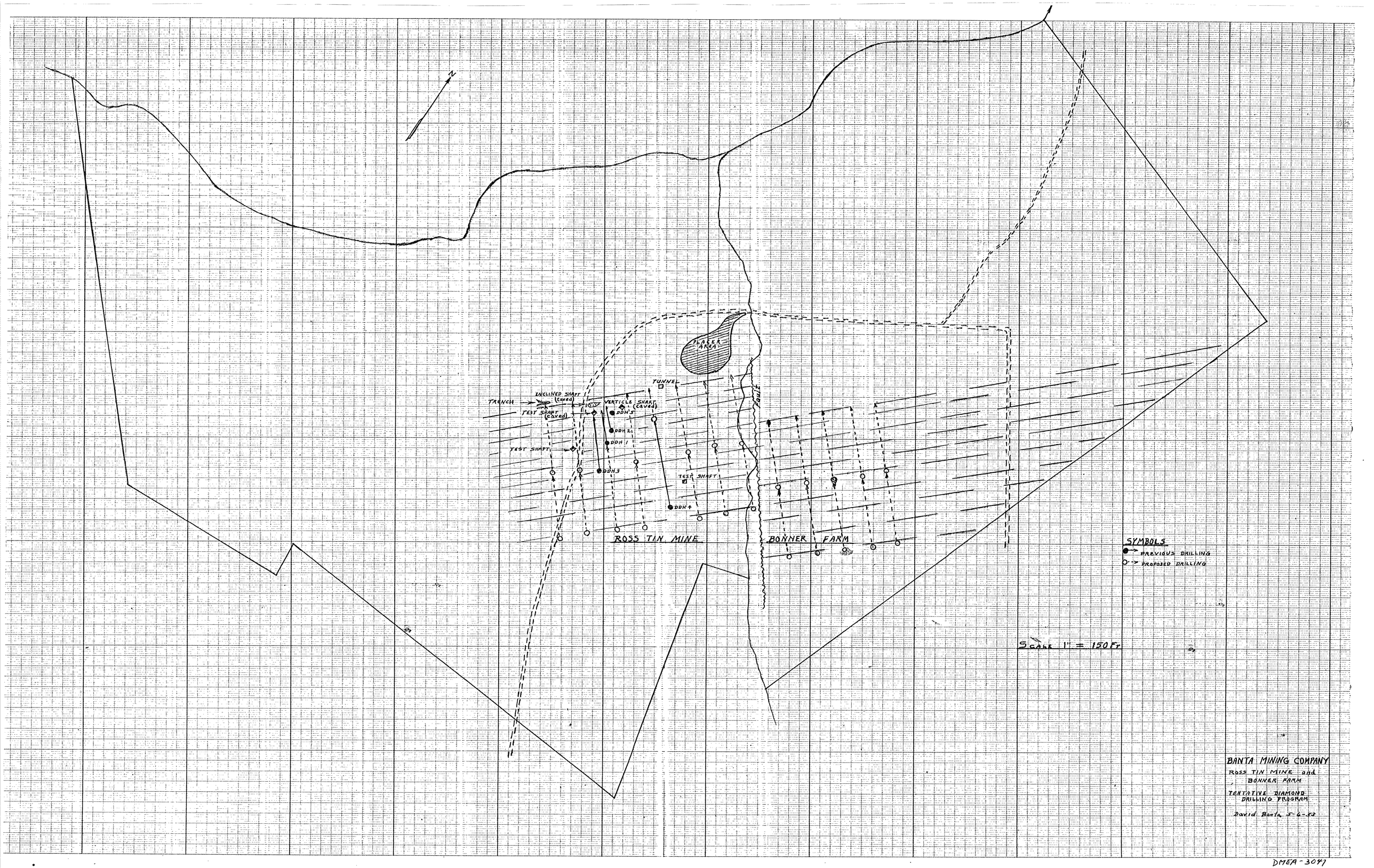
D.D.H. 5

Angle at Verticle

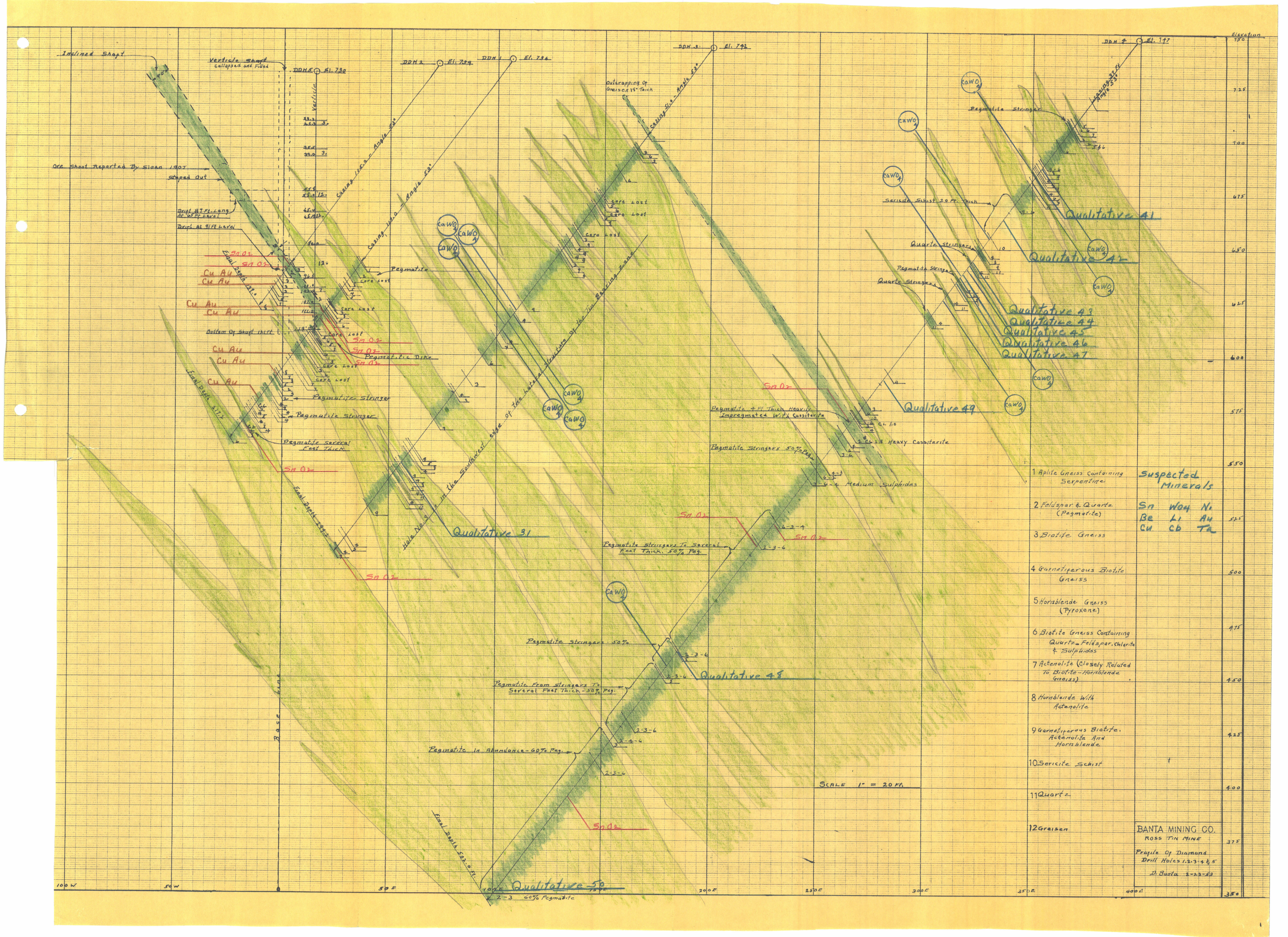
Depth 119.0'

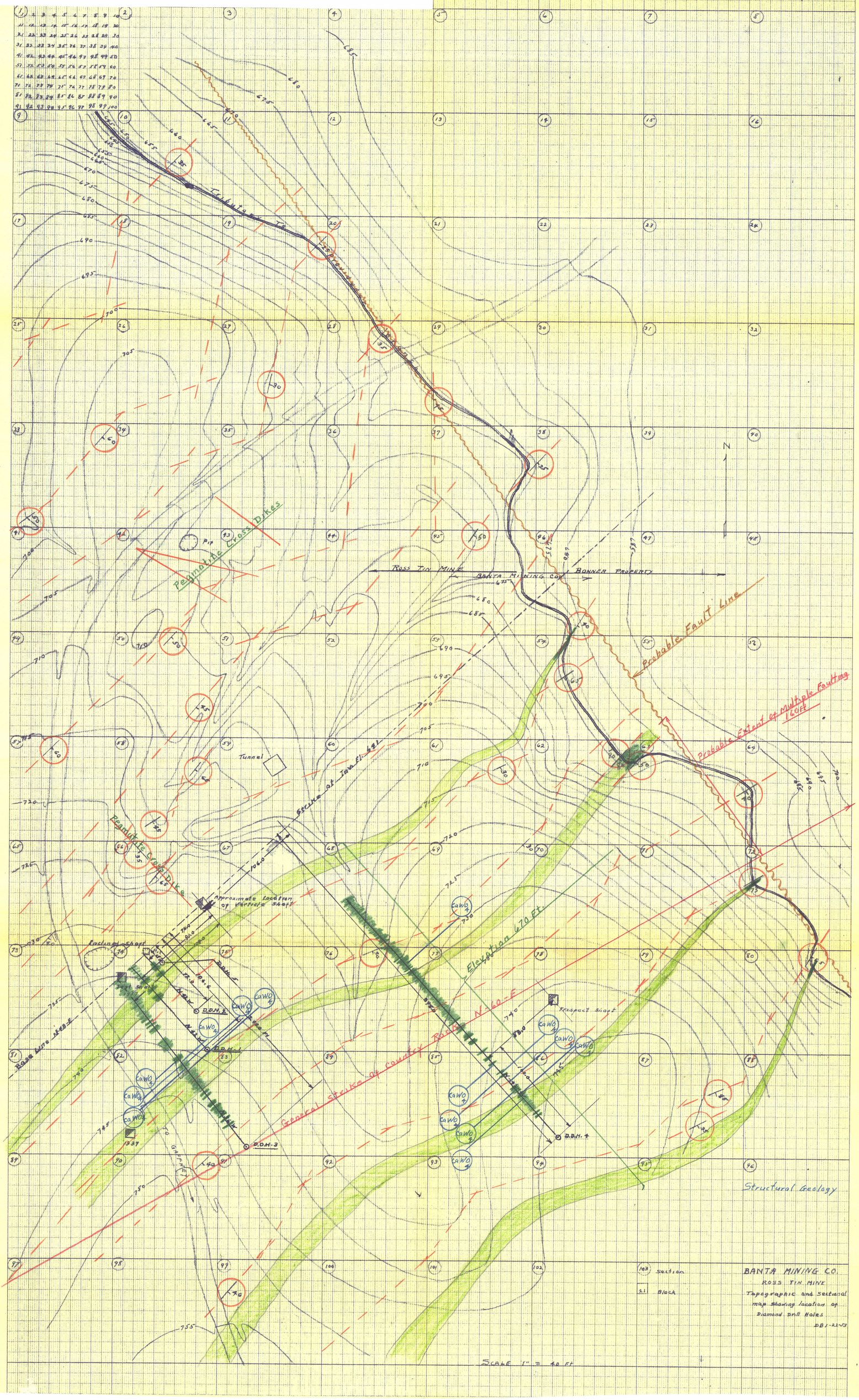
This hole was drilled to a depth of 80 feet with a soil sampler and from 80 to 119 feet with diamond bit.

0.0 - 23.0	No Sample.
23.3 - 25.3	Biotite Gneiss.
25.3 - 35.5	No Sample.
35.5 - 39.0	Biotite Gneiss.
39.0 - 55.8	No Sample.
55.8 - 58.0	Greisen.
58.0 - 65.4	No Sample.
65.4 - 68.4	Greisen.
68.4 - 80.0	No Sample.
80.0 - 95.6	Greisen.
95.6 - 100.0	Core lost
100.0 - 102.0	Actenolite and Sulphides.
102.0 - 107.0	Pegmatite.
107.0 - 111.0	No Sample.
111.0 - 119.0	Biotite Gneiss.


N
PLACER AREA
TUNNEL B
TRENCH
INCLINED SHAFT (CAVED)
TEST SHAFT (CAVED)
VERTICLE SHAFT (CAVED)
DDH 5
DDH 2
DDH 1
TEST SHAFT
DDH 3
TEST SHAFT
DDH 4
FAULT
ROSS TIN MINE
BONNER FARM
SYMBOLS
PREVIOUS DRILLING
PROPOSED DRILLING
SCALE 1" = 150 FT
BANTA MINING COMPANY
ROSS TIN MINE and BONNER FARM
TENTATIVE DIAMOND DRILLING PROGRAM
David Banta 5-6-83

DMEA-3047


Inclined Shaft
Vertical Shaft Collapsed and Filled
DDH 5 El. 730
DDH 2 El. 734
DDH 1 El. 736
DDH 3 El. 742
DDH 4 El. 747
Elevation
Ore Shoot Reported By Sloan 1907
Stoped Out
Drift 87 Ft. Long At 105 Ft. Level
Drift At 91 Ft Level
Final Depth 280
Sn Oz
Cu Au
Bottom Of Shaft 121 Ft.
Final Depth 117
Final Depth 143
Final Depth 250 Ft.
Casing 125 - Angle 53°
Casing 145 - Angle 53°
Casing 142 - Angle 53°
Casing 37 Ft Angle 53°
Pegmatite
Core Lost
Pegmatite Dike
Pegmatite Stringer
Pegmatite Several Feet Thick
Hole No. 3 In the Southeast
Qualitative 31
Outcropping Of Greisen 19" Thick
Southeast edge of the Lateral Structure of the Tin Bearing Zone
Pegmatite Stringers To Several Feet Thick. 50% Peg.
Pegmatite Stringers 50%
Qualitative 48
Pegmatite From Stringers To Several Feet Thick - 50% Peg.
Pegmatite In Abundance - 60% Peg.
Qualitative 50
2-3 60% Pegmatite
Pegmatite 4 Ft Thick Heavily Impregnated With Cassiterite
Pegmatite Stringers 50% Peg.
Medium Sulphides
Heavy Cassiterite
Pegmatite Stringer
Sericite Schist 28 Ft. Thick
Quartz Stringers
Qualitative 41
Qualitative 42
Qualitative 43
Qualitative 44
Qualitative 45
Qualitative 46
Qualitative 47
Qualitative 49
CaWO4
Base Line
100 W
50 W
50 E
100 E
200 E
250 E
300 E
350 E
400 E
Elevation
750
725
700
675
650
625
600
575
550
525
500
475
450
425
400
375
350
1 Aplite Gneiss Containing Serpentine
2 Feldspar & Quartz (Pegmatite)
3 Biotite Gneiss
4 Garnetiferous Biotite Gneiss
5 Hornblende Gneiss (Pyroxene)
6 Biotite Gneiss Containing Quartz - Feldspar, Chlorite & Sulphides
7 Actenolite (Closely Related to Biotite - Hornblende Gneiss)
8 Hornblende With Actenolite
9 Garnetiferous Biotite, Actenolite And Hornblende
10 Sericite Schist
11 Quartz
12 Greisen
Suspected Minerals
Sn WO4 Ni
Be Li Au
Cu Cb Ta
SCALE 1" = 20 FT.
BANTA MINING CO.
ROSS TIN MINE
Profile Of Diamond Drill Holes 1.2.3.4 & 5
D. Banta 2-23-53


Pegmatite Cross Dikes
Pit
Ross Tin Mine
Banta Mining Co.
Bonner Property
Probable Fault Line
Probable Extent of multiple faulting
Tunnel
Strike at Tow El. 681
Pegmatite cross Dike
Approximate Location of Vertical Shaft
Caving shaft
Base Line 1468 E
D.D.H. 1
D.D.H. 2
D.D.H. 3
D.D.H. 4
Elevation 670 ft.
General strike of country rock N 10° E
Resource Shaft
To Greenie
N
Structural Geology
Section
Block
BANTA MINING CO.
ROSS TIN MINE
Topographic and Sectional map showing location of Diamond Drill Holes
DBJ-22-73
Scale 1" = 40 ft